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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-KSB

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE FISCAL YEAR ENDED DECEMBER 31, 2001.

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM _____ TO _____ .

Commission File Number 0-8092

OXIS International, Inc.

A Delaware corporation
I.R.S. Employer Identification No. 94-1620407
6040 N. Cutter Circle, Suite 317
Portland, OR 97217
Telephone: (503) 283-3911

Securities registered pursuant to Section 12(b) of the Act:
NONE

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, $.001 par value

Indicate by check mark whether the Issuer (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-B is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-KSB or any amendment to this Form 10-KSB. ☐

The Registrant's revenues for its fiscal year ended December 31, 2001 were $2,968,000.

Aggregate market value of the voting common equity held by nonaffiliates of the Registrant as of February 28, 2002 (assuming conversion of all outstanding voting preferred stock into common stock) was $2,162,979.

Number of shares outstanding of Registrant's common stock as of February 28, 2002: 9,660,458 shares.

Certain of the information required by Part III of this Form 10-KSB is incorporated by reference to portions of the Company's definitive form of Proxy Statement which will be filed with the Commission during April 2002 with respect to the Company's Annual Meeting of Shareholders scheduled for June 2002.

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PART 1

Certain statements set forth below may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. The forward looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements to differ from those expressed or implied by the forward-looking statements. With respect to the Company, the following factors, among others, could cause actual results or outcomes to differ materially from current expectations: the possible inability to obtain financing; uncertainties relating to patents and proprietary information; the potential for patent-related litigation expenses and other costs resulting from claims asserted against the Company or its customers by third parties; achievement of product performance specifications; the ability of new products to compete successfully in either existing or new markets; the potential for adverse fluctuations in foreign currency exchange rates; the effect of product or market development activities; availability and future costs of materials and other operating expenses; competitive factors; the risks involved in international operations and sales; the performance and needs of industries served by the Company and the financial capacity of customers in these industries to purchase the Company's products; as well as other factors discussed under the heading "RISK FACTORS" in Item 1. Given these uncertainties, readers are cautioned not to place undue reliance on the forward-looking statements. The Company disclaims any obligation subsequently to revise or update forward-looking statements to reflect events or circumstances after the date of such statements or to reflect the occurrence of anticipated or unanticipated events.

ITEM 1. BUSINESS

Introduction

OXIS International, Inc. ("OXIS" or "The Company") is a biopharmaceutical company engaged in the development of diagnostic and therapeutic products and new technologies applicable to conditions and/or diseases associated with oxidative stress. Oxidative stress is associated with an excess of free radicals, reactive oxygen species ("ROS"), and/or a decrease in antioxidant levels with a resultant development of tissue or organ damage.

The Company's corporate offices and assay manufacturing facilities are located in a 15,000 sq. ft. facility at 6040 N. Cutter Circle, Suite 317, Portland OR 97217.

The Company has invested significant resources to build an early and substantial patent position on both its antioxidant therapeutic technologies and selected oxidative stress assays.

The Company is structured into two wholly owned subsidiaries, OXIS Health Products, Inc. and OXIS Therapeutics, Inc. The Company's commercial health products business, which markets research and commercial diagnostic assays and fine chemicals to research and clinical laboratories and other customers, has been carried out by OXIS Health Products, Inc. The Company's pharmaceutical and nutraceutical discovery business, which is focused on new drugs to treat diseases associated with tissue damage from free radicals and ROS, is being carried out by OXIS Therapeutics, Inc. For financial information about these two operating segments, see Note 7 to the consolidated financial statements.

The Company derives revenues primarily from sales from its wholly owned subsidiary, OXIS Heath Products, which includes the sales of research assays, fine chemicals such as Ergothioneine to the cosmetics industry and researchers, and bovine superoxide dismutase (SOD) for human clinical and veterinary research. The Company's diagnostic products include twenty-six assays to measure markers of oxidative stress. The Company has also manufactured fourteen commercial therapeutic drug-monitoring (TDM) assays based on fluorescence polarization immunoassay technology (FPIA) on a contract basis for the entity that purchased such technology from the Company in 1999. The TDM assay manufacturing contract expired in March of 2001.

The Company's lead therapeutic drug candidate, BXT-51072, completed a Phase IIA clinical trial in inflammatory bowel disease (IBD) in 1999 and further clinical studies are being reviewed. Two other therapeutic programs are in the pre-clinical stage of development. The therapeutics operation from the United Kingdom was closed in July 2001. For further information see Note 7.

Also in July 2001, the Company closed its wholly owned subsidiary, OXIS Instruments, Inc. All employees of the instruments manufacturing facility were terminated. Accordingly, the inventory and equipment for manufacturing instruments was written down to their estimated net realizable value.

OXIS continues to refocus with the objective of maximizing current operations and increasing the value of its therapeutic ethical and nutraceutical product portfolio. This portfolio includes, but is not limited to, three classes of small molecular weight antioxidant molecules and a SOD product for veterinary research and human clinical application in Spain. The Company will focus on and intensify its efforts to consummate successful development of pharmaceutical/nutraceutical relationships and/or strategic partnerships with larger companies in the industry. The Company intends to increase the value of their OXIS Health Products, Inc. portfolio by the filing of new intellectual property related to its current products under development, through new acquisitions and expanded marketing efforts. No assurance can be given that the Company's restructuring will generate the results anticipated by the management of the Company or will in the future be favorable to the Company.

Commercial Health Products. Government regulation in the United States and certain foreign countries is not currently a significant factor in the Company's business. In the United States, the Company's products and its manufacturing practices are not subject to regulation by the FDA pursuant to the Federal Food, Drug and Cosmetic Act as it relates to research products.

Therapeutic Development. Therapeutic development is regulated by the FDA and all therapeutic development is in compliance with these regulations at this stage.

Patents and Trademarks

The Company has an extensive portfolio of patents for diagnostics and several novel series of molecules to detect, treat and monitor diseases associated with damage from free radicals and ROS. This portfolio provides opportunities for the Company to apply its technologies to a wide range of diseases and conditions of oxidative stress.

Currently, the Company's therapeutic patent portfolio includes 14 U.S. patents and seven French patents. The Company has also filed eight additional applications for U.S. patents. These patents and patent applications cover the Company's two lead series of therapeutic molecules, gluthathione peroxidase and lipid soluble antioxidants, and other non-lead series of small molecular weight antioxidants.

Marketing

For the fiscal year 2001, the Company continued to market its reagent products to professional researchers in academia, industry and government through its research catalog. In addition, the Company continued sales of its proprietary OxyScan instrument technology. The Company's marketing program is centered on targeting specific audiences interested in oxidative stress. Primary vehicles for this purpose include printed literature, the Oxis Research website and attendance at conferences targeting neuroscience, cancer and nutritional researchers, among others.

During 2001, the Company launched six new products. Among these were a new assay for aconitase, one for catalase, two for lipid peroxidation and one for the enzyme gluthathione S-transferase. In addition to the new assays, OXIS was also first to market with two new novel spin trap technologies.

During 2001, the Company strengthened their distribution network by terminating some distributors for non-performance and formalizing agreements with others. New distribution partners were added in China, Spain and Canada. The most significant change in the Company's distribution network occurred when in November of 2001, the Company ceased to use R&D Systems to promote the Company's Bioxytech product line. As a result, the Company's direct sales through existing vendors have also increased. To compensate for potential losses in the international sectors, in which the Company was underserved, an aggressive campaign seeking additional distribution partners began in December 2001.

Competition

The biopharmaceutical industry is highly competitive. Competition in most of the Company's primary current and potential market areas from large pharmaceutical companies, and other companies, universities and research institutions is intense and expected to increase.

The main commercial competition at present to OXIS Health Products, Inc. is represented but not limited to the following three companies: Randox, Cayman Chemical and Assay Designs. These companies work in the same market place but none of them have a marketing edge over the other at this time. Relative to the Company, many of these entities may have substantially greater capital resources, research and development staffs, facilities, as well as greater expertise manufacturing and making products. In addition, these companies, as well as others, may have or may develop new technologies or use existing technologies that are, or may in the future be, the basis for competitive products.

Commercial Health Products

Diagnostic Products.

Revenues from sales of the Company's research diagnostic assays and fine chemicals comprised 68% of total revenues in 2001, and 61% of total revenues in 2000.

Oxidative Stress Research Products. The Company offers more than 140 research products for sale that include:

Assays for markers of oxidative stress
Spin traps
Antibodies
Proteins
Specialty chemicals
Controls

The primary technology foundation for the research product line is twenty-six assay test kits, which measure key markers in free radical biochemistry (markers of oxidative stress). Specifically, these assays measure levels of antioxidant protection, oxidative alterations, and pro-oxidant activation of specific white blood cells.

These assay kits utilize either chemical (colorimetric) or immunoenzymatic (EIA) reactions that can be read using laboratory spectrophotometers and microplate readers, respectively. The Company believes its assays offer advantages over conventional laboratory methods, including ease of use, speed, specificity and accuracy.

The assays for markers of oxidative stress are currently being sold to researchers primarily in Europe, Japan and the United States, primarily through distributors. The Company estimates that there are more than 7,500 scientists and clinicians who are working directly in research on free radical biochemistry, and who are potential customers for these research assays. Eighteen of the Company's research assays are manufactured at the facility in Portland, Oregon. The others are manufactured pursuant to private label agreements.

The Company's assays for markers of oxidative stress are generally protected by trade secrets, and to a more limited extent, patents. Four U.S. patents have been issued with respect to these assays. The oxidative stress assays are sold under the registered trademark "Bioxytech®."

Therapeutic Drug Monitoring Assays. The Company entered into an agreement with the purchaser of the Company's therapeutic drug monitoring assays (TDM) pursuant to which the Company has continued to manufacture the products and perform certain other services for the purchaser through 2000. The sale of intellectual property and contract rights together with product sales to the purchaser amounted to 20% of the Company's revenues in 2000, and sales to the purchaser amounted to 13% of the Company's revenues in 2001. The agreement to manufacture TDM products terminated during March 2001, and the Company does not intend to manufacture any TDM products beyond 2001.

Wellness Services. The Company's Wellness Services program was intended to provide products and services to help consumers make informed decisions regarding their current and future health goals. Due to cost and other constraints, this program was discontinued during 2001.

OxyScan Instrument System. The Company has developed the OxyScan System, which includes both reagents and instrumentation to measure oxidative status. The Company believes the OxyScan System to be the first dedicated system on the market for measurement of oxidative stress. OxyScan instruments have been placed in research centers, but through 2001 revenues from the sale of OxyScan instrument have not been significant due to lack of operational funds.

Medical Instruments. The Company's subsidiary, OXIS Instruments, Inc., developed, manufactured, marketed and sold instruments in a Pennsylvania facility. Revenues from the development and sale of instruments comprised approximately 22% of the Company's total revenues in 2001 and 35% in 2000. OXIS Instruments was closed in July 2001 due to the lack of significant revenue and related profit margins.

Therapeutic Products. Revenues from sales of bulk bovine SOD (bSOD) comprised approximately 4% of the Company's total revenues in 2001. No bulk bSOD was sold during 2000. Commercial-scale manufacture and quality control of bulk bSOD, as well as subsequent quality control and processing of United States Department of Agriculture-inspected edible beef liver into highly purified bulk bSOD requires a complex, multi-step process. The Company has significant knowledge regarding the manufacture of bSOD that is protected through trade secrets and proprietary know-how.

The Company's patents protecting the manufacture of bSOD have expired. Expiration of the Company's patents may enable other companies to benefit from research and development efforts of the Company, but such other companies would not receive the benefits of the Company's unpatented trade secrets and know-how or unpublished pre-clinical or clinical data.

The Company sells bulk bSOD for human use outside the United States, but does not market dosage forms of bSOD for human use. The Company does not currently intend to seek approval for human use of bSOD in the United States for any indication and only intends to sell bulk bSOD to the extent that there is a demand for it. Palosein® is OXIS' registered trademark for its veterinary brand of bSOD. Palosein is indicated for acute and chronic inflammatory conditions in equine and canine animals. OXIS is in the process of revising, updating and modernizing the Palosein testing procedures and revalidating its manufacturing procedures to meet new requirements requested by the FDA to re-market the product in the U.S. and Europe. The Company will be addressing all of the FDA's questions and will be using appropriate experts in the field to respond as needed. We anticipate positive resolution of this matter and look forward to future sales of this product to the veterinary market. However, there are no guarantees regarding the success of this product. Although there are other sources of bSOD and other laboratory and pilot-scale processes to produce bSOD, the Company believes that it is the only company manufacturing bSOD on a commercial scale for pharmaceutical uses. The Company maintains a single contracted supplier for bSOD. Diosynth is the only manufacturer of bSOD worldwide, using the Company's proprietary information and know how. If Diosynth were to halt manufacturing bSOD, it could cause an interruption of sales.

The Company's Spanish licensee, Tedec-Meiji Farma, S.A., which distributes bSOD for human use in Spain, has been responsible for a significant portion of the Company's revenues in recent years. Sales of bSOD to Tedec-Meiji were $117,000, or 4%, of the Company's revenues in 2001, and none in 2000.

Research and Development

Research and development expenses were $762,000 and $1,910,000 for the years ended December 31, 2001 and 2000, respectively.

The Company will continue to research and develop selected therapeutics classes of antioxidant small molecules currently under development. These families are chemically diverse and represent the major molecules with antioxidant activity present in nature – catalysts, lipid soluble membrane antioxidants and thiols.

Much of the Company's success depends on potential products that are in research and development and no material revenues have been generated to date from sales of these potential products. The pre-clinical work for one potential new therapeutic product is completed, and the clinical development stage has commenced. No assurance can be given that the Company's product development efforts will be successfully completed, that required regulatory approvals will be obtained, or that any such products, if developed and introduced, will be successfully marketed. If the Company does not successfully introduce new products, the revenues and results of operations will be materially adversely affected.

Risk Factors

Future Profitability Uncertain

The Company expects to incur operating losses for the foreseeable future. The Company's research and development expenses are expected to increase as the Company continues clinical testing. These losses and expenses may increase and fluctuate from quarter to quarter as the Company expands their development activities. There can be no assurance that the Company will ever achieve profitable operations. The report of the Company's independent auditors on the Company's financial statements for the period ended December 31, 2001 includes an explanatory paragraph referring to the Company's ability to continue as a going concern. The Company anticipates that it may expend significant capital resources in product research and development and in clinical trials. Capital resources may also be used for the acquisition of complementary businesses, products or technologies. The Company's future capital requirements will depend on many factors including: continued scientific progress in their research and development programs; the magnitude of these programs; the success of pre-clinical and clinical trials; the costs associated with the scale-up of manufacturing; the time and costs required for regulatory approvals; the time and costs involved in filing, prosecuting, enforcing and defending patent claims; technological competition and market developments; the establishment of and changes in collaborative relationships; and the cost of commercialization activities and arrangements.

While the Company believes that the new products and technologies show considerable promise, its ability to realize significant revenues there from is dependent upon the Company's success in developing business alliances with pharmaceutical and/or biotechnology companies to develop and market these products. To date, the Company has not established such business alliances and there can be no assurance that the Company's effort to develop such business alliances will be successful.

Need for Additional Financing

The Company has incurred losses in each of the last six years. As of December 31, 2001, the Company had an accumulated deficit of approximately $57,881,000. The Company expects to incur operating losses for the foreseeable future. The Company currently does not have sufficient capital resources to complete the Company's contemplated development programs and no assurances can be given that the Company will be able to raise such capital on terms favorable to the Company or at all. The unavailability of additional capital could cause the Company to cease or curtail its operations and/or delay or prevent the development and marketing of the Company's potential pharmaceutical products.

Employees

As of December 31, 2001, the Company had fifteen full time employees in the United States. None of the Company's employees are subject to a collective bargaining agreement. The Company has never experienced a work interruption.

NASDAQ Listing

On May 17, 2001, the Company's common stock was de-listed from the NASDAQ National Market. However, the Company's stock continues to be traded over the counter and is listed in Europe on France's Le Nouveau Marché.

Foreign Operations and Export Sales

Revenues attributed to countries based on the location of customers:

	2001	2000
United Kingdom	$ 40,000	$ 33,000
France	$ 21,000	$ 257,000
Germany	$ —	$ 38,000
Japan	$ 164,000	$ 123,000
Spain	$ 122,000	$ 14,000
Other foreign countries	$ 242,000	$ 223,000

ITEM 2. PROPERTIES.

The Company occupies, pursuant to leases expiring in March of 2002, office, laboratory and manufacturing space in Portland, Oregon which is shared by the Company's health products and therapeutic development segments.

Although the premises currently occupied are suitable for the Company's present requirements, the Company believes that other equally suitable premises are readily available.

ITEM 3. LEGAL PROCEEDINGS.

As of December 31, 2001 no legal actions are pending against or have been filed by the Company. In the ordinary course of conducting its business, the Company has become subject to litigation and claims on various matters. There exists a reasonable possibility that the Company will not prevail in all cases. Although sufficient uncertainty exists in these cases to prevent the Company from determining the amount of its liability, if any, the ultimate exposure is not expected to substantially affect the Company's Statement of Operations, or its Balance Sheet as of December 31, 2001. However, in the event of an unanticipated adverse final determination in respect of certain matters, the Company's consolidated net income for the period in which such determination occurs could be materially affected.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

No shareholder meeting was held in 2001.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS.

The Company's stock continues to be traded over-the-counter and is listed in Europe on Le Nouveau Marché.

Previous quarterly high and low sales prices of the Company's common stock on the Nasdaq Stock Market and subsequently to de-listing on the over-the-counter board are as follows:

	2001				2000			
	4th	3rd	2nd	1st	4th	3rd	2nd	1st
High	.29	.25	.55	.78	1.125	2.250	5.000	10.000
Low	.07	.07	.13	.22	.281	1.000	1.563	1.250

The Company has an estimated 8,300 shareholders, including approximately 4,800 shareholders who hold their shares in street name. The Company utilizes its assets to develop its business and, consequently, has never paid a dividend and does not expect to pay dividends in the foreseeable future.

ITEM 6. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The Company expects to continue to report losses in 2002 and for the foreseeable future and can give no assurance as to when and if it will become profitable.

Additional capital will be required during 2002 to continue operating in accordance with its current plans. If the Company is unable to generate additional funding through an increase in revenues, additional borrowings or raising additional capital during 2002, it intends to curtail its operations through the reduction of personnel and facility costs and by reducing the research and development efforts; however, no assurances can be given that it will be able to do so. If the Company were to be unable to sufficiently curtail its costs in such a situation, it might be forced to seek protection of the courts through reorganization, bankruptcy or insolvency proceedings.

See the information under the heading "RISK FACTORS" in Item 1 for a further discussion of these matters. For more information concerning the Company's ability to continue as a going concern, see Note 1 to the consolidated financial statements.

While the Company believes that their new products and technologies show considerable promise, their ability to realize significant revenues therefrom is dependent upon the Company's success in developing business alliances with biotechnology and/or pharmaceutical companies that have the required resources to develop and market certain of these products. There is no assurance that the Company's effort to develop such business alliances will be successful.

Results of Operations

Revenues

The Company's revenues for the past two years consisted of the following:

	2001	2000
Research assays and fine chemicals	$ 1,653,000	$ 1,429,000
Therapeutic drug monitoring assays	380,000	722,000
Medical instruments	655,000	1,226,000
bSOD for research and human use	117,000	—
Other	163,000	163,000
Total sales	$ 2,968,000	$ 3,540,000

In 2001, sales of research assays and fine chemicals increased by $224,000 to $1,653,000, a 16% increase over the 2000 sales of $1,429,000. Six new research assays were released by the end of 2001, compared to two new research assays released in 2000.

In 2001, sales of therapeutic drug monitoring assays declined to $380,000 from $722,000 in 2000 due to the expiration of the TDM contract in March 2001.

Revenue from instrument sales and development declined in 2001 to $655,000 from $1,226,000 in 2000, resulting in the closure of the business in July 2001.

Sales of bSOD have been made primarily to the Company's Spanish licensee. In 2001, the Company sold $117,000 of bulk bSOD to the Spanish licensee. No bulk bSOD was sold to this customer in 2000. Future sales of bulk bSOD beyond 2001 are largely dependent on the needs of the Company's Spanish licensee, which are uncertain and difficult to predict, and no assurances can be given that the Company will continue to sell bulk bSOD to its Spanish licensee.

Other revenue represents primarily royalty income and contract laboratory revenue.

Costs and Expenses

Cost of revenue was 86% of revenue in 2000 and decreased to 82% in 2001.

Research and Development costs were $1,910,000 in 2000 and $762,000 in 2001 resulting in a decrease of $1,148,000, primarily as a result of a reduction in research and development activity by the Company's therapeutic segment as necessitated by the Company's lack of capital.

In 2001, sales, general and administrative expenses decreased by $1,010,000, from $3,297,000 in 2000 to $2,287,000 in 2001. This reduction in SG&A was a result of the closure of the wellness services program ($575,000), OXIS Instruments ($398,000) and the UK therapeutic facility ($152,000), partially offset by an increase in corporate legal costs of $99,000 in 2001.

The 2001 write down of inventory and equipment of $942,000 resulted from the closures of the wellness services program and OXIS Instruments business. The write down included $516,000 in inventory disposals and $426,000 in equipment disposals.

Interest Income and Expense

The net interest income decreased by $75,000 in 2001 from 2000 due primarily to the reduction of the Company's cash balance.

Liquidity and Capital Resources

The Company, on a consolidated basis, had cash and cash equivalents of $221,000 and $2,059,000 at December 31, 2001 and 2000, respectively.

Net cash used by operations was $1,425,000 for the year ended December 31, 2001. The majority of the cash used during 2001 was related to net loss of $3,495,000 offset by depreciation and amortization of $412,000, write down of inventory and equipment of $942,000, a decrease in accounts receivable of $353,000 and a decrease in inventory of $463,000. During 2000 net cash used by operations was $3,887,000, which was also related to net loss of $4,636,000 and a decrease in accounts payable of $501,000 offset by depreciation and amortization of $443,000, a decrease in accounts receivable of $567,000 and an increase in customer deposits of $174,000.

Net cash used by investing activities for 2001 was $156,000 and $303,000 in 2000 primarily related to purchases of property, plant and equipment and additions to patents.

The net cash used in financing activities was $212,000 for 2001 due to repayment of long-term debt. The net cash provided by financing activities for 2000 was $5,467,000. This was a result of repayments of long-term and short-term debt of $401,000 and the receipt of the net proceeds from the issuance of stock in the amount of $5,868,000.

Net Loss

The Company incurred net losses in 2001 and 2000, and does not expect to be profitable in the foreseeable future. The Company's net loss decrease of $1,141,000 to $3,495,000 is due primarily to the closure of OXIS Instruments, the wellness services program and the United Kingdom therapeutic development facility during 2001.

The Company expects to incur a net loss for 2002. If the Company develops substantial new revenue sources or if additional capital is raised through further sales of securities, the Company plans to continue to invest in research and development activities and incur sales, general and administrative expenses in amounts greater than its anticipated near-term product margins. If the Company is unable to raise sufficient additional capital or to develop new revenue sources, it will have to cease, or severely curtail, its operations. In this event, while expenses will be reduced, expense levels, and the potential write down of various assets, would still be in amounts greater than anticipated revenues.

ITEM 7. FINANCIAL STATEMENTS

INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders of
OXIS International, Inc.:

We have audited the accompanying consolidated balance sheet of OXIS International, Inc. and subsidiaries as of December 31, 2001, and the related consolidated statements of operations, shareholders' equity, and cash flows for the year then ended. These consolidated financial statements are the responsibility of the management of OXIS International, Inc. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts of disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall consolidated financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of OXIS International, Inc. and subsidiaries as of December 31, 2001 and the results of their operations and their cash flows for the year then ended in conformity with accounting principles generally accepted in the United States.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations and has a working capital deficit at December 31, 2001. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ King Griffin & Adamson P.C.

Dallas, Texas
February 22, 2002, except for Note 9,
for which the date is March 1, 2002.

INDEPENDENT AUDITORS' REPORT

To the Board of Directors and Shareholders of
OXIS International, Inc.

We have audited the accompanying consolidated balance sheet of OXIS International, Inc. and subsidiaries as of December 31, 2000, and the related consolidated statement of operations, shareholders' equity, and cash flows for the year then ended. These financial statements are the responsibility of the management of OXIS International, Inc. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, such financial statements present fairly, in all material respects, the financial position of OXIS International, Inc. and subsidiaries as of December 31, 2000, and the results of their operations and their cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has incurred losses in each of the last two years and at December 31, 2000, the Company had an accumulated deficit of $54,386,000 raising substantial doubt about its ability to continue as a going concern. Management's plans concerning these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

DELOITTE & TOUCHE LLP

Portland, Oregon
March 1, 2001

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

December 31, 2001 and 2000

	2001	2000
ASSETS		
Current assets:		
Cash and cash equivalents	$ 221,000	$ 2,059,000
Accounts receivable, net of allowance of $10,000 and $199,000	149,000	502,000
Inventories	292,000	1,271,000
Prepaid and current other	44,000	81,000
Total current assets	706,000	3,913,000
Property, plant and equipment, net	102,000	651,000
Technology for developed products, net	433,000	681,000
Patents, net	426,000	326,000
Other assets	54,000	54,000
Total assets	$ 1,721,000	$ 5,625,000
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Note payable to shareholder	$ 160,000	$ 160,000
Current portion of long-term debt	92,000	99,000
Accounts payable	589,000	628,000
Accrued liabilities	211,000	95,000
Accrued payroll	91,000	246,000
Customer deposits	43,000	174,000
Total current liabilities	1,186,000	1,402,000
Long-term debt, net of current portion	2,000	150,000
Commitments and contingencies (Notes 1 and 8)		
Shareholders' equity:		
Preferred stock—$.01 par value; 15,000,000 shares authorized:		
Series B—428,389 shares issued and outstanding (aggregate liquidation preference of $1,000,000)	4,000	4,000
Series C—296,230 shares issued and outstanding	3,000	3,000
Common stock—$.001 par value; 95,000,000 shares authorized; 9,660,458 and 9,560,458 shares issued and outstanding at December 31, 2001 and 2000	10,000	10,000
Warrants	1,670,000	2,870,000
Additional paid in capital	57,155,000	55,955,000
Accumulated deficit	(57,881,000)	(54,386,000)
Accumulated other comprehensive loss	(428,000)	(383,000)
Shareholders' equity	533,000	4,073,000
Total liabilities and shareholders' equity	$ 1,721,000	$ 5,625,000

The accompanying notes are an integral part of these consolidated financial statements.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

Years ended December 31, 2001 and 2000

	2001	2000
Revenue	$ 2,968,000	$ 3,540,000
Costs and expenses:		
Cost of revenue	2,430,000	3,059,000
Research and development	762,000	1,910,000
Sales, general and administrative	2,287,000	3,297,000
Write down of inventory and equipment	942,000	—
Total costs and expenses	6,421,000	8,266,000
Operating loss	(3,453,000)	(4,726,000)
Litigation settlement	(57,000)	—
Interest income	29,000	180,000
Interest expense	(14,000)	(90,000)
Net loss	$ (3,495,000)	$ (4,636,000)
Net loss per share—basic and diluted	$ (0.36)	$ (0.50)
Weighted average number of shares used in computation—basic and diluted	9,636,278	9,185,392

The accompanying notes are an integral part of these consolidated financial statements.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

Years ended December 31, 2001 and 2000

	Preferred Stock		Common Stock						
	Shares	Amount	Shares	Amount	Warrants	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total shareholders' equity
Balances, January 1, 2000	1,036,925	$10,000	7,928,784	$ 8,000	$ —	$52,756,000	$(49,750,000)	$ (335,000)	$ 2,689,000
Conversion of Series C preferred shares to common	(312,306)	(3,000)	90,221			3,000			—
Sales of common shares and warrants			1,376,949	2,000	2,870,000	3,133,000			6,005,000
Shares issued in connection with 1997 IMS business combination			100,000						
Options exercised			64,944			63,000			63,000
Other			(440)						
Net loss							(4,636,000)		(4,636,000)
Foreign currency translation adjustment								(48,000)	(48,000)
Other comprehensive loss									(4,684,000)
Balances, December 31, 2000	724,619	7,000	9,560,458	10,000	2,870,000	55,955,000	(54,386,000)	(383,000)	4,073,000
Shares issued in connection with 1997 IMS business combination			100,000						
Expiration of warrants					(1,200,000)	1,200,000			
Net loss							(3,495,000)		(3,495,000)
Foreign currency translation adjustment								(45,000)	(45,000)
Other comprehensive loss									(3,540,000)
Balances, December 31, 2001	724,619	$ 7,000	9,660,458	$10,000	$ 1,670,000	$57,155,000	$(57,881,000)	$ (428,000)	$ 533,000

The accompanying notes are an integral part of this consolidated financial statement.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

Years ended December 31, 2001 and 2000

	2001	2000
Cash flows from operating activities:		
Net loss	$ (3,495,000)	$ (4,636,000)
Adjustments to reconcile net loss to cash used for operating activities:		
Depreciation and amortization	412,000	443,000
Litigation settlement	57,000	—
Write down of inventory and equipment	942,000	—
Loss on disposals of property, plant and equipment	15,000	73,000
Changes in assets and liabilities:		
Accounts receivable	353,000	567,000
Inventories	463,000	56,000
Prepaid and other current assets	37,000	(45,000)
Accounts payable	(39,000)	(501,000)
Customer deposits	(131,000)	174,000
Accrued payroll	(155,000)	(31,000)
Accrued liabilities	116,000	13,000
Net cash used for operating activities	(1,425,000)	(3,887,000)
Cash flows from investing activities:		
Proceeds from sale of property, plant and equipment	19,000	—
Purchase of property, plant and equipment	(11,000)	(160,000)
Additions to patents	(164,000)	(100,000)
Other assets	—	(54,000)
Other	—	11,000
Net cash used for investing activities	(156,000)	(303,000)
Cash flows from financing activities:		
Proceeds from issuance of stock, net of related cost	—	5,868,000
Repayment of short-term notes	—	(361,000)
Repayment of long-term debt	(212,000)	(40,000)
Net cash provided by (used for) financing activities	(212,000)	5,467,000
Effect of exchange rate changes on cash	(45,000)	(7,000)
Net increase (decrease) in cash and cash equivalents	(1,838,000)	1,270,000
Cash and cash equivalents—beginning of year	2,059,000	789,000
Cash and cash equivalents—end of year	$ 221,000	$ 2,059,000
Cash paid for interest	$ 1,000	$ 68,000
Supplemental schedule of noncash operating and financing activities:		
Issuance of Common Stock in exchange for cancellation of notes and accrued interest	$ —	$ 200,000
Conversion of Preferred Stock into Common Stock	$ —	$ 366,000
Cancellation of note payable as a result of litigation settlement	$ 63,000	$ —
Issuance of note payable as a result of litigation settlement	$ 120,000	$ —

The accompanying notes are an integral part of these consolidated financial statements.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years Ended December 31, 2001 and 2000

1. Description of Business and Basis of Presentation

OXIS International, Inc. (the "Company") develops, manufactures and markets selected therapeutic and diagnostic products. The Company's research and development efforts are concentrated principally in the development of products to diagnose, treat and prevent diseases associated with free radicals and reactive oxygen species. The Company is headquartered in Portland, Oregon.

Assays to measure markers of oxidative stress are manufactured by the Company in the United States and are sold directly to researchers and to distributors for resale to researchers, primarily in Europe, the United States and Japan. The Company also sells pharmaceutical forms of superoxide dismutase (SOD) for human and research veterinary use. Through June 1999, therapeutic drug monitoring assays had been manufactured by the Company in the United States and were sold to hospital clinical laboratories and reference laboratories by an in-house sales force and a network of distributors both within and outside the United States. Subsequent to June 1999, the Company had manufactured therapeutic drug monitoring assays pursuant to a contract, which concluded on March 31, 2001, with the purchaser of the therapeutic drug monitoring technology (see Note 7).

These financial statements have been prepared on a going concern basis which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The Company has incurred recurring losses and at December 31, 2001 had an accumulated deficit of $57,881,000. In addition, at December 31, 2001, the Company has a working capital deficit of $480,000. These factors, among others, indicate that the Company may be unable to continue as a going concern for a reasonable period of time. These financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that may be necessary should the Company be unable to continue as a going concern. The Company's continuation as a going concern is contingent upon its ability to obtain additional financing, and to generate revenue and cash flow to meet its obligations on a timely basis.

The Company expects that additional capital will be required during 2002 to continue operating in accordance with its current plans. If the Company is unable to generate additional funding through an increase in revenues, additional borrowings or raising additional capital during 2002 it intends to curtail its operations through the reduction of personnel and facility costs and by reducing its research and development efforts; however, no assurances can be given that it will be able to do so. If the Company were to be unable to sufficiently curtail its costs in such a situation, it might be forced to seek protection of the courts through reorganization, bankruptcy or insolvency proceedings.

On December 14, 2000, the Company was notified by NASDAQ that it was not in compliance with certain NASDAQ requirements for continued listing on the NASDAQ National Market. Specifically, the Company failed to meet the requirements for maintaining (1) a minimum bid price of $1.00 and (2) a market value of public float greater than $5,000,000. NASDAQ staff notified the Company that it had determined to de-list the Company's common stock from the NASDAQ National Market. The Company appealed the staff's determination and appeared on April 26, 2001 at an oral hearing before a NASDAQ Listing Qualifications Panel (the "Panel"). On May 16, 2001, the Panel issued its decision denying the Company's appeal, and on May 17, 2001, the Company's common stock was de-listed from the NASDAQ National Market. However, the Company continues to be publicly traded over-the-counter and continues to be listed in Europe on Le Nouveau Marché.

2. Significant Accounting Policies

Principles of consolidation—The accompanying financial statements include the accounts of the Company as well as its subsidiaries. The functional currency of the Company's United Kingdom subsidiary is the British

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

pound and the functional currency of the Company's French subsidiary is the French franc. The foreign subsidiaries' assets and liabilities are translated at the exchange rates at the end of the year, and their statements of operations are translated at the average exchange rates during each year. Gains and losses resulting from foreign currency translation are recorded as other comprehensive income or loss and accumulated as a separate component of shareholders' equity. All significant intercompany balances and transactions are eliminated in consolidation.

Cash equivalents consist of money market accounts with commercial banks.

Inventories are stated at the lower of cost or market. Cost has been determined by using the first-in, first-out method. Inventories at December 31, 2001 and 2000, consisted of the following:

	2001	2000
Raw materials	$ 61,000	$ 682,000
Work in process	135,000	398,000
Finished goods	96,000	191,000
Total	$ 292,000	$ 1,271,000

Property, plant and equipment is stated at cost. Depreciation of equipment is computed using the straight-line method over estimated useful lives of three to ten years. Leasehold improvements are amortized over the shorter of five years or the remaining lease term.

Property, plant and equipment at December 31, 2001 and 2000, consisted of the following:

	2001	2000
Furniture and office equipment	$ 285,000	$ 348,000
Laboratory and manufacturing equipment	460,000	1,439,000
Leasehold improvements	63,000	57,000
Property, plant and equipment, at cost	808,000	1,844,000
Accumulated depreciation and amortization	(706,000)	(1,193,000)
Property, plant and equipment, net	$ 102,000	$ 651,000

Long-lived assets—The Company accounts for the impairment and disposition of long-lived assets in accordance with Statement of Financial Accounting Standards (SFAS) No. 121, "Accounting for the Impairment of Long-Lived Assets and Long-Lived Assets to Be Disposed Of." In accordance with SFAS No. 121, long-lived assets are reviewed for events or changes in circumstances which indicate that their carrying value may not be recoverable. There was no impairment of the value of such assets for the years ended December 31, 2001 and 2000.

Patents and technology for developed products—Technology for developed products was acquired in business combinations and is amortized over their estimated useful lives of seven to ten years. Accumulated amortization of technology for developed products was $1,068,000 and $820,000 as of December 31, 2001 and 2000, respectively. Patents are being amortized on a straight-line basis over the shorter of the remaining life of the patent or ten years. $332,000 of patents pending approval are not currently being amortized. Accumulated amortization as of December 31, 2001 and 2000 is $25,000 and $17,000, respectively. In accordance with SFAS No. 121, the Company periodically reviews net cash flows from sales of products and projections of net cash flows from sales of products on an undiscounted basis to assess recovery of intangible assets.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

Stock-based compensation—The Company accounts for common stock issued to employees in accordance with Accounting Principles Board Opinion No. 25 ("APB 25"), "Accounting for Stock Issued to Employees." Under APB 25, the Company recognizes compensation expense as shares are earned under terms of various employment agreements based on the fair value of the common stock. Fair value is calculated using the average cash sales price of the Company's common stock during each month in which the shares are earned.

The Company accounts for common stock issued to non-employees using Financial Accounting Standard No. 123 ("FAS 123"), "Accounting for Stock-Based Compensation," and the provision of Emerging Issues Task Force No. 96-18 ("EITF 96-18"), "Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring or in Conjunction with Selling Goods or Services." All transactions in which goods or services are the consideration received for the issuance of equity instruments are accounted for based on the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable. The measurement date of the fair value of the equity instrument issued is the earlier of the date on which the counterparty's performance is complete or the date on which it is probable that performance will occur.

Revenue recognition—The Company manufactures, or has manufactured on a contract basis, products that are sold to customers. The Company recognizes product sales upon shipment of the product to the customer. The Company also develops and acquires technology that is used in the Company's operations or sold, licensed or assigned to third parties. The Company recognizes revenue upon the sale or assignment of technology to third parties.

Income taxes—Deferred income taxes, reflecting the net tax effects of temporary differences between the carrying amount of assets and liabilities recognized for financial reporting purposes and the amounts recognized for income tax purposes, are based on tax laws currently enacted. A valuation allowance is established when necessary to reduce deferred tax assets to the amount expected to be realized.

Net loss per share—Net loss per share is computed based upon the weighted average number of common shares outstanding ("basic") and, if dilutive, the incremental shares issuable upon the assumed exercise of stock options or warrants and the assumed conversion of preferred stock ("dilutive"). Due to the net losses in 2001 and 2000, the computation of dilutive net loss per share is antidilutive and therefore is the same as basic.

Reclassifications—Certain reclassifications have been made to 2000 to conform to 2001 presentation.

Use of estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Fair value of financial instruments—The carrying amount reported in the balance sheet for cash and cash equivalents, accounts receivable, notes payable, customer deposits and accounts payable, accrued payroll and payroll taxes, and other accrued liabilities approximates fair value due to the short-term nature of the accounts. The carrying amount reported in the balance sheet for long-term debt reflects fair value based on approximate rates that would currently be available to the Company.

New accounting pronouncements—In July 2001, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets,"

which is effective January 1, 2002. SFAS 142 requires, among other things, the discontinuance of goodwill amortization. In addition, the standard includes provisions for the reclassification of certain existing recognized intangibles, reclassification of certain intangibles out of previously reported goodwill and the identification of reporting units for purposes of assessing potential future impairments of goodwill. SFAS 142 also requires the Company to complete a transitional goodwill impairment test within six months from the date of adoption. The Company believes the adoption of SFAS 142 will not have a material effect on its financial position or results of operation.

In August 2001, the FASB issued SFAS No. 143, "Accounting for Asset Retirement Obligations," which is effective January 1, 2003. SFAS 143 requires, among other things, the accounting and reporting of legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development or normal operation of a long-lived asset. The Company believes the adoption of SFAS 143 will not have a material effect on its financial position or results of operation.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets," which is effective January 1, 2002. SFAS 144 addresses accounting and reporting of all long-lived assets, except goodwill, that are either held and used or disposed of through sale or other means. The Company believes the adoption of SFAS 144 will not have a material effect on its financial position or results of operation.

3. Note Payable to Shareholder

Note payable to shareholder at December 31, 2001 and 2000 consisted of a $160,000, 8% unsecured note which was originally due in May 1997. The amount is currently due on demand.

4. Long-term Debt

Long-term debt at December 31, 2001 and 2000 consisted of the following:

	2001	2000
Non-interest uncollateralized note payable to shareholder due in monthly installments of $10,000 through August 2002	$ 70,000	$ 196,000
Other	24,000	53,000
	94,000	249,000
Less current portion	92,000	99,000
	$ 2,000	$ 150,000

5. Shareholders' Equity

Common Stock—In April 2000, the Company completed a private placement of units, consisting of one share of the Company's common stock plus warrants to purchase two shares of the Company's common stock (the "2000 Units"), primarily to a series of institutional investors. The 2000 Units were priced at the NASDAQ closing price for the Company's common stock the day prior to the signing of the subscription agreements relating to the purchase of such 2000 Units. The price per Unit ranged from $3.94 to $4.75. A total of 1,376,949 common shares and warrants to purchase approximately 2,753,000 common shares were issued in exchange for gross proceeds of $6,050,000 in cash and conversion of $200,000 of short-term notes and accrued interest payable. The exercise price of one-half of the warrants issued in the private placement is equal to 135% of the

price paid per 2000 Unit. The exercise price of the other half of the warrants is equal to 150% of the price paid per 2000 Unit. Holders of Series B Preferred Stock are entitled to noncumulative annual dividends at the rate of $0.115 per share if and when declared by the Company's Board of Directors.

The Company issued additional warrants in 2000 to its placement agents giving the agents the right to acquire 155,000 common shares at an exercise price of $5.94 per share.

Preferred Stock—Terms of the preferred stock are fixed by the Board of Directors at such time as the preferred stock is issued. The 428,389 outstanding shares of Series B Preferred Stock are convertible into and have voting rights equivalent to 85,678 shares of common stock. The Series B Preferred Stock has certain preferential rights with respect to liquidation and dividends. Holders of Series B Preferred Stock are entitled to noncumulative annual dividends at the rate of $0.115 per share if and when declared by the Company's Board of Directors.

The 296,230 shares of Series C Preferred Stock are convertible into 85,578 shares of the Company's common stock at the option of the holders at any time. The conversion ratio is based on the average closing bid price of the common stock for the fifteen consecutive trading days ending on the date immediately preceding the date notice of conversion is given, but cannot be less than .20 nor more than .2889 common shares for each Series C Preferred share. The conversion ratio may be adjusted under certain circumstances such as stock splits or stock dividends. The Company has the right to automatically convert the Series C Preferred Stock into common stock if the average closing bid price of the Company's common stock on the Nasdaq National Market for 15 consecutive trading days exceeds $13.00. Each share of Series C Preferred Stock is entitled to the number of votes equal to .26 divided by the average closing bid price of the Company's common stock during the fifteen consecutive trading days immediately prior to the date such shares of Series C Preferred Stock were purchased. In the event of liquidation, the holders of the Series C Preferred Stock shall participate on an equal basis with the holders of the Common Stock (as if the Series C Preferred Stock had converted into Common Stock) in any distribution of any of the assets or surplus funds of the Company. The holders of Series C Preferred Stock are entitled to noncumulative dividends after the payment of dividends on Series B Preferred Stock if and when declared by the Company's Board of Directors.

Stock Warrants—In connection with the issuance of common stock and Series C and E Preferred Stock prior to 1998, the Company has issued to its placement agents warrants to purchase 78,278 shares of common stock at prices ranging from $7.15 to $16.25 per share, that remained outstanding and were exerciseable at December 31, 2000 and expired unexercised during 2001.

A warrant to purchase 162,025 common shares at $12.50 per share was issued to the purchaser of the Company's Series D Preferred Stock. This Warrant was immediately exercisable and remained outstanding as of December 31, 2000 and expired unexercised during 2001.

Warrants to purchase 60,000 common shares were issued to purchasers of the secured convertible term notes issued in October 1996. The warrants had an exercise price of $3.05 per share. They were immediately exerciseable and remained outstanding as of December 31, 2000 and expired unexercised during 2001.

Warrants to purchase 1,985,678 common shares at exercise prices of $5.25 to $6.75 that were issued in connection with the sale of common shares during 1998 remained outstanding at December 31, 2001. These warrants became exerciseable during 1999 and expire in April and May 2003. (See Footnote 9 – Subsequent Events for further discussion on these warrants.)

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

Warrants to purchase 2,908,898 common shares at exercise prices of $4.92 to $7.13 that were issued in connection with the sale of common shares during 2000 remained outstanding at December 31, 2001. These warrants became exerciseable immediately upon issuance and expire between February 2001 and April 2005. 1,454,449 warrants at exercise prices of $4.92 to $5.94 expired unexercised during 2001. (See Footnote 9 – Subsequent Events for further discussion on these warrants.)

Stock Options—The Company has a stock incentive plan under which 2,250,000 shares of the Company's common stock are reserved for issuance. The plan permits granting stock options to acquire shares of the Company's common stock, awarding stock bonuses of the Company's common stock, and granting stock appreciation rights. Options granted pursuant to the Plan have a maximum term of ten years; vesting is determined by the Compensation Committee of the Company's Board of Directors. Options granted through 2001 have had vesting requirements of up to five years. The plan permits grants of options at less than the fair market value of the underlying shares on the date of the grant, but through 2001 no such options have been issued. Options granted and outstanding under the plan are summarized as follows:

	2001		2000	
	Shares	Weighted average exercise price	Shares	Weighted average exercise price
Outstanding at beginning of year	1,802,486	$ 2.53	1,034,582	$ 2.92
Granted	557,750	0.16	895,250	2.21
Exercised	—	—	(64,944)	0.97
Forfeitures	(503,445)	0.95	(62,402)	6.07
Outstanding at end of year	1,856,791	$ 1.88	1,802,486	$ 2.53
Exercisable at end of year	1,382,361	$ 2.06	825,137	$ 3.08

The number of shares under option, weighted average exercise price and weighted average remaining contractual life of all options outstanding as of December 31, 2001, by range of exercise price was as follows:

Range of exercise price	Shares	Weighted average exercise price	Weighted average remaining life
$ 0.09—$ 0.88	1,039,374	$ 0.29	8.24 years
$ 1.31—$ 1.91	442,750	$ 1.89	8.07 years
$ 2.12—$ 4.53	198,367	$ 3.10	6.05 years
$ 5.75—$ 8.45	130,300	$ 7.93	4.40 years
$11.25—$17.50	46,000	$15.20	3.33 years

The number of shares under option and weighted average exercise price of options exercisable as of December 31, 2001, by range of exercise price was as follows:

Range of exercise price	Shares	Weighted average exercise price
$ 0.09—$ 0.88	884,944	$ 0.31
$ 1.31—$ 1.91	122,750	$ 1.84
$ 2.12—$ 4.53	198,367	$ 3.10
$ 5.75—$ 8.45	130,300	$ 7.93
$11.25—$17.50	46,000	$15.20

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

The Company applies the intrinsic value based method described in Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees", in accounting for its stock options. Accordingly, since the exercise price of all options issued under the plan has been greater than or equal to the fair market value of the stock at the date of issue of the options, no compensation cost has been recognized for options granted under the plan. Had compensation cost for options granted under the plan been determined based on the fair value at the grant dates in a manner consistent with the method determined under Statement of Financial Accounting Standards No. 123, "Accounting for Stock-Based Compensation", the net loss and net loss per share for 2001 and 2000 would have been changed to the pro forma amounts indicated below:

	2001	2000
Net loss:		
As reported	$(3,495,000)	$(4,636,000)
Pro forma	$(3,651,000)	$(4,911,000)
Net loss per share – basic and diluted:		
As reported	$ (0.36)	$ (0.50)
Pro forma	$ (0.38)	$ (0.53)

For the purpose of computing the pro forma expense, the fair value of each option is estimated on the grant date using the Black-Scholes option-pricing model with the following assumptions:

	Grants issued in	
	2001	2000
Dividend yield	0%	0%
Expected volatility	140%	109%
Risk-free interest rate	4.7%	4.7%
Expected lives	3 years	3 years

The weighted average fair value as of the option date was computed to be $0.12 per share for options issued during 2001, $0.60 per share for options issued during 2000.

At December 31, 2001 the Company had the following additional stock options outstanding that were not issued pursuant to its stock incentive plan. Options to acquire 7,000 common shares at an exercise price of $8.44 per share were granted in 1996 and expire in 2006. Options to acquire 25,000 common shares at an exercise price of $1.38 were granted in 2000 and expire in 2005. Options to acquire 400,000 common shares at an exercise price of $1.56 were granted in 2000 and expired unexercised in 2001. Options to acquire 78,438 common shares at an exercise price of $0.085 were granted in 2001 and expire in 2011.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

6. Income Taxes

Deferred Taxes—Deferred taxes reflect the net tax effects of (a) temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, and (b) operating losses and tax credit carryforwards.

The tax effects of significant items comprising the Company's deferred taxes as of December 31 were as follows:

	2001	2000
United States taxes:		
Deferred tax assets:		
Federal net operating loss carryforward and capitalized research and development expenses	$ 9,165,000	$ 8,128,000
Federal R&D tax credit carryforward	553,000	676,000
State net operating loss carryforward and capitalized research and development expenses	1,007,000	816,000
Other	47,000	—
Deferred tax liabilities—book basis in excess of noncurrent assets acquired in purchase transactions	(142,000)	(181,000)
Net deferred tax assets	10,630,000	9,439,000
Valuation allowance	(10,630,000)	(9,439,000)
Net deferred taxes	$ —	$ —
French taxes:		
Deferred tax assets—		
Net operating loss carryforward	$ 3,604,000	$ 3,563,000
Valuation allowance	(3,604,000)	(3,563,000)
Net deferred taxes	$ —	$ —

The tax benefits ($5,136,000) of the net operating losses of $15,410,000 which existed at the date of acquisition (September 7, 1994) of the French subsidiary will be recorded as a reduction of income tax expense when and if realized. Due to the closure of the French subsidiary's operations in early 1999, it is unlikely that the Company will ever realize any benefit from the French subsidiary's operating loss carryforwards.

The tax benefits ($351,000) of the net operating losses of $1,032,000 which existed at the date of acquisition (December 31, 1997) of Innovative Medical Systems Corp. will be recorded as a reduction of the net unamortized balance of property, plant and equipment and intangible assets of $465,000 when and if realized.

Statement of Financial Accounting Standards No. 109 requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Because of the Company's history of operating losses, management has provided a valuation allowance equal to its net deferred tax assets.

Tax Carryforwards—At December 31, 2001, the Company had net operating loss carryforwards of approximately $9,471,000 to reduce United States federal taxable income in future years, and research and

development tax credit carryforwards of $553,000 to reduce United States federal taxes in future years. In addition, the Company's French subsidiary had operating loss carryforwards of $9,828,000 (68,392,000 French francs) to reduce French taxable income in future years. These carryforwards expire as follows:

Year of expiration	United States net operating loss carryforward	R&D tax credit carryforward	French operating loss carryforward
2002	$ 7,000	$ 6,000	$ —
2003	44,000	55,000	—
2004	5,000	34,000	443,000
2005	25,000	46,000	151,000
2006	44,000	176,000	—
2007-2021	9,346,000	236,000	—
No expiration	—	—	9,234,000
	$ 9,471,000	$ 553,000	$9,828,000

Utilization of the United States tax carryforwards is subject to certain restrictions in the event of a significant change (as defined in Internal Revenue Service guidelines) in ownership of the Company.

7. Operating Segments

The Company is organized into two reportable segments – health products and therapeutic development. The two segments have different strategic goals and have been managed separately since 1997. The health products segment manufactures and sells diagnostic products, medical instruments, pharmaceutical forms of SOD and other fine chemicals. The therapeutic development segment operates a drug discovery business focused on development of new drugs to treat diseases associated with tissue damage from free radicals and reactive oxygen species.

In the second quarter of 2001, the Company's health products segment decided to cease operating its instrument manufacturing facility and its wellness services program. All employees of the instruments manufacturing facility and wellness services program were terminated during the second quarter of 2001. Accordingly the inventory and equipment for manufacturing instruments and for the wellness services program was written down by $942,000 during 2001 to their estimated net realizable value.

The accounting policies of the segments are the same as those described in the summary of significant accounting policies. The Company accounts for inter-segment sales at cost. General corporate expenses were allocated equally to the health products and therapeutics development segments in 2001. In 2000, 23% of the Company's general corporate expenses were allocated to the health products segment and 77% to the therapeutic development segment.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

The following tables present information about the two segments for 2001 and 2000:

	Health products	Therapeutic development	Total
Year ended December 31, 2001:			
Revenues from external customers	$ 2,968,000	$ —	$ 2,968,000
Interest income	9,000	20,000	29,000
Interest expense	1,000	13,000	14,000
Depreciation and amortization	261,000	151,000	412,000
Net loss	(2,505,000)	(990,000)	(3,495,000)
Expenditures for long-lived assets	44,000	131,000	175,000
As of December 31, 2001—			
Segment assets	1,273,000	448,000	1,721,000

	Health products	Therapeutic development	Total
Year ended December 31, 2000:			
Revenues from external customers	$ 3,540,000	$ —	$ 3,540,000
Interest income	12,000	168,000	180,000
Interest expense	75,000	15,000	90,000
Depreciation and amortization	391,000	52,000	443,000
Net loss	(2,368,000)	(2,268,000)	(4,636,000)
Expenditures for long-lived assets	97,000	163,000	260,000
As of December 31, 2000—			
Segment assets	3,476,000	2,149,000	5,625,000

Revenues from external customers for the years ended December 31, 2001 and 2000 were as follows:

	2001	2000
Assays and fine chemicals	$ 2,033,000	$ 2,151,000
Medical instruments	655,000	1,226,000
SOD for human and research use	117,000	—
Other	163,000	163,000
Total	$ 2,968,000	$ 3,540,000

In 1999, the Company sold the intellectual property, commercial rights and finished goods inventory relating to its therapeutic drug monitoring assays. Pursuant to the sale, the Company had entered into an agreement with the purchaser of the therapeutic drug monitoring assays. Under this agreement, the Company continued to manufacture the products and perform certain other services for the purchaser through the first quarter of 2001.

Revenues of the health products segment for 2000 include $718,000 for product sales to the purchaser of the therapeutic drug monitoring assays, and decrease to $380,000 in 2001 with the completion of the contract in March of 2001.

OXIS INTERNATIONAL, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Years Ended December 31, 2001 and 2000

Revenues attributed to countries based on the location of customers:

	2001	2000
United States	$ 2,379,000	$ 2,852,000
United Kingdom	40,000	33,000
France	21,000	257,000
Germany	—	38,000
Japan	164,000	123,000
Spain	122,000	14,000
Other foreign countries	242,000	223,000
	$ 2,968,000	$ 3,540,000

Long-lived assets (principally property, plant and equipment, technology and patents) at December 31, 2001 and 2000 were located as follows:

	2001	2000
United States	$ 1,015,000	$ 1,694,000
United Kingdom	—	18,000
	$ 1,015,000	$ 1,712,000

8. Commitments And Contingencies

The Company leases their facilities in Oregon under an operating lease that expires in March 2002. Lease payments to which the Company is committed aggregate $21,000 in 2002. The Company currently holds a month-to-month lease and is currently negotiating the terms of a three-year lease.

During 2000 the Company's United Kingdom subsidiary entered into a three-year lease for office space. During the fourth quarter of 2000 the Company decided it did not want to continue the lease. In January 2001 the Company entered into an agreement to terminate the lease in exchange for forfeiture of a deposit and a cash payment aggregating $59,000 and surrender of the Company's leasehold improvements with a carrying value of $66,000. The cash payment, deposit forfeited and leasehold improvements were charged to expense in 2000. The premises were vacated in July 2001.

Rental expense included in the accompanying statements of operations was $207,000 in 2001 and $231,000 in 2000.

In 1995, the Company consummated the acquisition of Therox Pharmaceuticals, Inc. ("Therox") pursuant to a transaction wherein Therox was merged with and into a wholly owned subsidiary of the Company. In addition to the issuance of its common stock to Therox shareholders, the Company agreed to make payments of up to $2,000,000 to the Therox stockholders based on the successful commercialization of Therox technologies. As of December 31, 2001, no additional payments have been made. The Company has not recorded a liability associated with this agreement as the ultimate liability, if any, is uncertain.

In 1997, the Company consummated the acquisition of Innovative Medical Systems Corp. ("IMS") pursuant to a transaction whereby the Company acquired all of the outstanding stock of IMS in exchange for 200,000

shares of the Company's common stock issued immediately and additional shares to be issued. The name of IMS was changed to OXIS Instruments, Inc. during 1998. Additional common shares are to be issued to former IMS shareholders annually through 2003. The number of additional common shares which may be issued to former IMS shareholders depends on, among other things, future annual revenues of OXIS Instruments Inc. through 2002 and on the market price of the Company's common stock. During each of the years 2001 and 2000, the Company issued 100,000 shares (the minimum number of shares required under the original agreement) to the former IMS shareholders. The total number of additional shares of common stock which may be issued subsequent to December 31, 2001, to former IMS shareholders in exchange for IMS stock is limited to a maximum number of 678,009 shares.

In June 2001, the Company settled a claim by the former majority owner of IMS who is also a former employee of the Company. The settlement calls for the Company to remove Mr. Catarious as an obligor on an approximately $130,000 bank loan which was paid in full during 2001, to pay the claimant $10,000 per month for 12 months (partially offset by the Company's release from an obligation to pay the claimant a $63,000 note and its associated accrued interest of $8,000), and to make stock distributions to him in accordance with the terms of the Share Exchange Agreement pursuant to which the Company in December 1997 acquired IMS. Both the Company and the claimant released all other claims against each other. The Company's financial statements reflect it liabilities for its future obligations under the settlement, and the elimination of other actual or potential obligations that were extinguished as a result of the settlement.

The Company and its subsidiaries are also parties to various other claims in the ordinary course of business. The Company does not believe that there will be any material impact on the Company's financial position, results of operations or cash flows as a result of these claims.

9. Subsequent Events

In January 2002, the Board of Directors of the Company agreed to unilaterally offer to certain holders of warrants an extended maturity date and reduced exercise price. The holders of warrants to purchase 3,440,127 shares of the Company's Common Stock issued during the period 1998 through 2000 in connection with the sale of common shares received this offer. The exercise price for these warrants previously varied in a range from $5.25 to $7.13 per share. The exercise price for all of these warrants was reduced to $1.00 per share, and the maturity date for 1,376,949 warrants issued in 2000 was extended to a new maturity date of May 7, 2003. All warrants issued prior to May, 1998 have lapsed and were not affected by this board action. This unilateral offer to the warrant holders was made in January 2002 with the opportunity of any offeree to decline the amendments by the expiration date of February 15, 2002. None of the warrant holders declined the offer, and all such warrants are now deemed to be amended under the terms offered.

On January 30, 2002 the Company entered into an agreement with a third party investor to sell up to 2,000,000 shares of Series F Convertible Preferred Stock. In addition, the agreement provided for the Company's issuance of warrants to the investor to purchase up to 2,000,000 shares of Common Stock at an exercise price per share of $1.00. The initial conversion ratio provided under the terms of this Series F Preferred Stock is ten shares of the Company's Common Stock for every one share of Series F Preferred Stock converted. The Company has reserved up to 22,000,000 shares of Common Stock as a reserve for future issuance of its Common Stock pursuant to conversion and exercise of the warrants. Effective March 1, 2002 the Company issued 1,500,000 shares of Series F Convertible Preferred Stock at a price per share of $1.00 to the investor under this agreement. Also, on March 1, 2002, the Company issued warrants to this investor providing for the issuance of up to 1,500,000 shares of Common Stock at an initial warrant price of $1.00 per share of Common Stock. These

preferred shares vote on an as if converted basis, and therefore the issuance of these shares will result in a change of control of the Company.

ITEM 8. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

As reported to the Commission on January 17, 2002, the Company, as a cost conservation measure, on January 14, 2002, upon the recommendation of the Audit Committee of the Board, engaged the services of King Griffin & Adamson P.C., Dallas, Texas to report on the Company's year-end financial statements for the calendar year ending December 31, 2001. Accordingly, the Company dismissed its prior independent accountants, Deloitte & Touche LLP. Deloitte's independent auditor's report on the Company's consolidated financial statements for the calendar years 2000 and 1999 did not contain an adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope or accounting principles, except for an explanatory paragraph relating to the Company's ability to continue as a going concern. There were no disagreements between the Company and Deloitte on any matters of accounting principles or practices, financial statement disclosure or auditing scope of procedure, which disagreements, if not resolved to the satisfaction of Deloitte, would have caused it to make a reference to the subject matter of the disagreements in connection with its reports. Deloitte's letter confirming these matters accompanies the 8-K report filed with the Commission on January 17, 2002.

PART III

ITEM 9. DIRECTORS, EXECUTIVE OFFICERS AND CONTROL PERSONS; COMPLIANCE WITH SECTION 16(A) OF THE EXCHANGE ACT.

The information required by this item is incorporated herein by reference to the material contained under the caption "Proposal No. 1-Election of Directors" in the Company's definitive proxy statement to be filed with the Commission in April 2002, pursuant to Regulation 14A.

ITEM 10. EXECUTIVE COMPENSATION

The information required under this item is incorporated herein by reference to the material contained under the caption "Compensation of Executive Officers" in the Company's definitive proxy statement to be filed with the Commission in April 2002, pursuant to Regulation 14A.

ITEM 11. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT.

The information required under this item is incorporated herein by reference to the material contained under the caption "Proposal No. 1-Election of Directors" in the Company's definitive proxy statement to be filed with the Commission in April 2002, pursuant to Regulation 14A.

ITEM 12. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information required under this item is incorporated herein by reference to the material contained under the caption "Proposal No. 1-Election of Directors" in the Company's definitive proxy statement to be filed with the Commission in April 2002, pursuant to Regulation 14A.

PART IV

ITEM 13. EXHIBITS AND REPORTS ON FORM 8-K.

(a) Exhibits specified by item 601 of Regulation S-B.

See Exhibit Index—page 32

(b) Reports on Form 8-K.

The registrant did not file any reports on Form 8-K during the fourth quarter of calendar 2001.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: April 1, 2002

OXIS International, Inc.
Registrant

By: /s/ RAY R. ROGERS

Ray R. Rogers
President, Chief Executive Officer,
and Interim Principal Financial
and Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following directors on behalf of the Registrant.

/s/ RICHARD A. DAVIS	April 1, 2002
Richard A. Davis	
/s/ TIMOTHY C. RODELL	April 1, 2002
Timothy C. Rodell	
/s/ THOMAS M. WOLF	April 1, 2002
Thomas M. Wolf	
/s/ MARVIN S. HAUSMAN	April 1, 2002
Marvin S. Hausman	
/s/ RAY R. ROGERS	April 1, 2002
Ray R. Rogers	
/s/ STUART S. LANG	April 1, 2002
Stuart S. Lang	

EXHIBIT INDEX

Exhibit Number	Description of Document	Page
2(a)	Share Exchange Agreement by and among Innovative Medical Systems Corp., OXIS International, Inc and each of the shareholders who are signatories thereto	(1)
3(a)	Restated Certificate of Incorporation as filed in Delaware September 10, 1996 and as thereafter amended through March 1, 2002	
3(b)	Composite Bylaws of the Company effective September 7, 1994 and as amended through August 30, 2000	
4(a)	Forms of Common Stock and Warrant Purchase Agreement, Warrant to Purchase Common Stock, and Registration Rights Agreement Re Private Placement March-April, 2000	(2)
10(a)	OXIS International, Inc. Series B Preferred Stock Purchase Agreement dated July 18, 1995	(3)
10(b)	Series C Preferred Stock Subscription and Purchase Agreement (form); dated April 1996 (1,774,080 shares in total)	
10(c)	Form of Promissory Notes dated March 27, 1997—April 24, 1997	(4)
10(d)	Executive Separation and Employment Agreement dated April 3, 2000, between the Company and Ray R. Rogers	(5)
10(e)	Addendum to Executive Separation and Employment Agreement between OXIS International, Inc. and Ray R. Rogers dated August 1, 2001	(6)
21(a)	Subsidiaries of OXIS International, Inc.	
23(b)	Independent Auditors' Consent.	

(1) Incorporated by reference to the Company's Form 8-K Current Report, dated January 15, 1998.

(2) Incorporated by reference to the Company's Form 8-K Current Report dated March 3, 2000.

(3) Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 1995.

(4) Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 1997.

(5) Incorporated by reference to the Company's Form S-3 Registration Statement No. 333-40970 filed July 7, 2000 and effective December 22, 2000.

(6) Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2001.

EXHIBIT 3(a)

INDEX

SECOND (SIC) FOURTH RESTATED CERTIFICATE OF INCORPORATION OF
OXIS INTERNATIONAL, INC.
UNDER SECTION 242 AND SECTION 245 OF THE GENERAL CORPORATION LAW
OF THE STATE OF DELAWARE

We, RAY R. ROGERS, Chairman of the Board, and JON S. PITCHER, Secretary, of OXIS INTERNATIONAL, INC., a Delaware corporation organized and existing under the General Corporation Law of the State of Delaware, HEREBY CERTIFY that:

1. The name of the corporation is OXIS INTERNATIONAL, INC.

2. The original Certificate of Incorporation was filed under the name of Diagnostic Data, Inc. on October 15, 1973.

3. On March 11, 1985, the corporation changed the name of the corporation to DDI Pharmaceuticals, Inc., and another name change to OXIS INTERNATIONAL, INC. was effected on September 7, 1994.

4. This Fourth Restated Certificate of Incorporation restates and integrates and further amends the provisions of the corporation's original Certificate of Incorporation.

5. This Fourth Restated Certificate of Incorporation has been duly adopted in accordance with Section 242 and Section 245 of the General Corporation Law of the State of Delaware and the text of such Fourth Restated Certificate of Incorporation is as follows:

Filed Delaware
9/10/96

FOURTH RESTATED CERTIFICATE OF INCORPORATION
OF
OXIS INTERNATIONAL, INC.

FIRST: The name of the corporation (hereinafter called "Company" or "Corporation") is OXIS INTERNATIONAL, INC.

SECOND: The registered office of the Company in the State of Delaware

is located at Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801, in the County of New Castle. The name of its registered agent at that address is The Corporation Trust Company.

THIRD: The purpose of the Company is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.

FOURTH:

I. COMMON STOCK

The Company is authorized to issue a total of Forty Million (40,000,000) shares of Common Stock, each of which shares of Common Stock has a par value of Fifty Cents ($0.50). Dividends may be paid on the Common Stock as and when declared by the Board of Directors, out of any funds of the Company legally available for the payment of such dividends, and each share of Common Stock will be entitled to one vote on all matters on which such stock is entitled to vote. All duly authorized One Dollar ($1.00) par value shares outstanding shall be deemed shares having a par value of Fifty Cents ($0.50).

II. PREFERRED STOCK

The Company is authorized to issue a total of Fifteen Million (15,000,000) shares of Preferred Stock ($0.01 par value), each of which shares of Preferred Stock may be issued in one or more series of stock within the class of Preferred Stock. Each series may have such voting powers, full or limited, or no voting powers, and such designations, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions thereof, as shall be stated and expressed in the resolution or resolutions providing for the issue of such stock adopted by the Board of Directors pursuant to authority hereby expressly vested in it by the provisions of this Fourth Restated Certificate of Incorporation.

A. SERIES A PREFERRED STOCK. A series of the class of Preferred Stock of the Company shall be hereby created, and the shares of such series shall be designated as "Series A Preferred Stock." The number of shares of the class of Preferred Stock shall be 100,000, and the preferences and rights of the shares of such series shall be the same as the rights of the shares of

Common Stock of the Company except that the shares of such series shall have no voting power and that in the event of any liquidation, dissolution, or winding up of the Company, the holders of the Series A Preferred Stock shall be entitled to receive prior to and in preference to any distribution of any assets or surplus funds of the Company to the holders of Common Stock by reason of their ownership thereof, the amount of $.01 per share. If at any time and from time to time any holder of shares of Series A Preferred Stock owns less than 4.99% of the then outstanding shares of the Common Stock of the Company, a portion of such holder's shares of Series A Preferred Stock shall automatically convert into shares of the Company's Common Stock (on the basis of one share of Series A Preferred Stock converting into one fully paid and nonassessable share of Common Stock of the Company) until such holder owns 4.99% of the then outstanding shares of the Company's Common Stock.

B. SERIES B PREFERRED STOCK. A series of the class of Preferred Stock of the Company shall be hereby created, and the shares of such series shall be designated as "Series B Preferred Stock", par value $0.01 per share. The number of shares constituting such series shall be 642,583 and the rights, preferences, privileges and restrictions granted to or imposed upon the Series B Preferred Stock are as follows:

1. Series B Dividends.

(a) The holders of outstanding Series B Preferred Stock shall be entitled to receive in any fiscal year, when, as and if declared by the Board of Directors, out of any assets at the time legally

available therefor, dividends at the rate of $0.115 per share of Series B Preferred Stock per annum before any dividend or distribution (other than pursuant to Section B.4) is paid on Common Stock. Such dividend or distribution may be payable annually or otherwise as the Board of Directors may from time to time determine. Dividends or distributions (other than dividends payable solely in shares of Common Stock or distributions pursuant to Section B.4) of up to $0.115 per share may be declared and paid upon shares of Common Stock in any fiscal year of the Corporation only if dividends shall have been paid on and declared and set apart upon all shares of Series B Preferred Stock at such annual rate in such year. After dividends or distributions of $0.115 per share have been declared and paid on the Common Stock in any fiscal year, all further dividends and distributions during such fiscal year shall be distributed among the holders of the Common Stock and the Series B Preferred Stock in proportion to the shares of Common Stock then held by them and the shares of Common Stock which they then have the right to acquire upon conversion of the shares of Series B Preferred Stock then held by them. The right to such dividends on shares of Series B Preferred Stock shall not be cumulative and no right shall accrue to holders of shares of Series B Preferred Stock by reason of the fact that dividends on said shares are not declared in any prior year, nor shall any undeclared or unpaid dividend bear or accrue interest.

2. Series B Voting Rights.

(a) Each holder of shares of Series B Preferred Stock shall be entitled to the number of votes equal to the number of shares of Common Stock into which such holder's shares of Series B Preferred Stock could be converted on the record date for the vote or consent

of stockholders and, except as otherwise provided herein, shall have voting rights and powers equal to the voting rights and powers of the Common Stock. The holder of each share of Series B Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of the Corporation and shall vote with holders of the Common Stock upon the election of directors and upon any other matter submitted to a vote of stockholders, except those matters required by law to be submitted to a class or series vote and except as otherwise provided in Section B.2(b)hereof. Fractional votes by the holders of Series B Preferred Stock shall not, however, be permitted and any fractional voting rights resulting from the above formula (after aggregating all shares into which shares of Series B Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number.

(b) The number of directors shall be set as provided in the Bylaws of the Corporation. So long as any shares of Series B Preferred Stock remain outstanding, the holders of the Series B Preferred Stock outstanding shall vote together with the Common Stock as a single class with respect to the election of directors.

3. Series B Conversion. The holders of Series B Preferred Stock shall have conversion rights as follows (the "Conversion Rights");

(a) Right to Convert. Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing $2.33433 by the Series B conversion Price, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of the Series B Preferred Stock (the "Series B Conversion Price") shall initially be $2.33433 per share of Common Stock. Such initial Series B Conversion Price shall be adjusted as hereinafter provided.

(b) Automatic Conversion. Each share of Series B Preferred Stock shall automatically be converted into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing $2.33433

by the Series B Conversion Price, in effect on the date of the receipt by the Corporation of the written consent to, or request for, such conversion from holders of at least three-fourths (3/4) of the Series B Preferred Stock then outstanding.

(c) Mechanics of Conversion.

(i) Before any holder of Series B Preferred Stock shall be entitled to convert the same into shares of Common Stock, he shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and shall give written notice to the Corporation at such office that he elects to convert the same and shall state therein the name or names in which he wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series B Preferred Stock, a certificate or

certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of surrender of the shares of Series B Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

(ii) If a voluntary conversion is made in connection with an underwritten offering of securities pursuant to a registration statement filed pursuant to the Securities Act of 1933, as amended (the "Securities Act"), the conversion may, at the option of any holder tendering shares of Series B Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the person(s) entitled to receive the Common Stock upon conversion of the Series B Preferred Stock shall not be deemed to have converted such Series B Preferred Stock until immediately prior to the closing of such sale of securities.

(d) Adjustments for Stock Dividends, Subdivisions, or Split-ups of Common Stock. If the number of shares of Common Stock outstanding at any time after the filing of the original Certificate of Designation with respect to the Series B Preferred Stock (July 19, 1995) is increased by a stock dividend payable in shares of Common Stock or by a subdivision or split-up of shares of Common Stock, then, effective at the close of business upon the record date fixed for the determination of holders of Common Stock entitled to receive such stock dividend, subdivision or split-up, the Conversion Price for the Series B Preferred Stock shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of Series B Preferred Stock shall be increased in proportion to such increase of outstanding shares of Common Stock.

(e) Adjustments for Combinations of Common Stock. If the number of shares of Common Stock outstanding at any time after the filing of the original Certificate of Designation with respect to the Series B Preferred Stock (July 19, 1995) is decreased by a combination of the outstanding shares of Common Stock, then, effective at the close of business upon the record date of such combination, the Conversion Price for the Series B Preferred Stock shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of Series B Preferred Stock shall be decreased in proportion to such decrease in outstanding shares of Common Stock.

(f) Adjustments for Other Distributions. In the event the Corporation at any time or from time to time makes, or fixes a record date for the determination of holders of Common Stock entitled to receive any distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the

holders of Series B Preferred Stock shall receive upon conversion thereof, in addition to the number of shares of Common Stock receivable thereupon, the amount of securities of the Corporation which they would have received had their Series B Preferred Stock been converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by

them as aforesaid during such period, subject to all other adjustments called for during such period under this Section B.3(f) with respect to the rights of the holders of the Series B Preferred Stock.

(g) Adjustments for Reorganizations, Reclassifications, etc. If the Common Stock issuable upon conversion of the Series B Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock or other securities or property, whether by reclassification, a merger or consolidation of this Corporation with or into any other corporation or corporations, or a sale of all or substantially all of the assets of this Corporation, or otherwise, the Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series B Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock or securities or other property equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series B Preferred Stock immediately before such event; and, in any such case, appropriate adjustment (as determined by the Board) shall be made in the application of the provisions herein set forth with respect to the rights and interests thereafter of the holders of the Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the Conversion Price) shall thereafter be applicable, as nearly as may be reasonable, in relation to any shares of stock or other property thereafter deliverable upon the conversion of the Series B Preferred Stock.

(h) Certificates as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Series B Conversion Price pursuant to this Section B.3, the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Series B Preferred Stock a certificate executed by the Corporation's President or Chief Financial Officer setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any holder of Series B Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (A) such adjustments and readjustments, (B) the Conversion Price for such Series B Preferred Stock at the time in effect, and (C) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of the Series B Preferred Stock.

(i) Notices of Record Date. In the event that the Corporation shall propose at any time: (a) to declare any special dividend or distribution upon its Common Stock, whether in cash, property, stock or other securities, whether or not out of earnings or earned surplus; (b) to offer for subscription pro rata to the holders of any class or series of its stock any additional shares of stock of any class or series or other rights; (c) to effect any reclassification or recapitalization of its Common Stock outstanding involving a change in the Common Stock; or (d) to merge or consolidate with or into any other corporation (other than a mere reincorporation transaction), or sell, lease or convey all or substantially all of its assets, or to liquidate, dissolve

or wind up; then, in connection with each such event, the Corporation shall send to the holders of Series B Preferred Stock:

(i) at least twenty (20) days' prior written notice of the date on which a record shall be taken for such dividend, distribution or subscription rights (and specifying the date on which the holders of Common Stock shall be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (c) and (d) above; and

(ii) In the case of the matters referred to in (c) and (d) above, at least twenty (20) days' prior written notice of the date when the same shall take place (and specifying the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon the occurrence of such event).

(j) Reservation of Stock Issuable Upon Conversion. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series B Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series B Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series B Preferred Stock, the Corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including, without limitation, engaging in its best efforts to obtain the requisite stockholder approval of any necessary amendment to the Certificate of Incorporation.

(k) Fractional Shares. No fractional share shall be issued upon the conversion of any share or shares of Series B Preferred Stock. All shares of Common Stock (including fractions thereof) issuable upon conversion of more than one share of Series B referred Stock by a holder thereof shall be aggregated for purposes of determining whether the conversion would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion would result in the issuance of a fraction of a share of Common Stock, the Corporation shall, in lieu of issuing any fractional share, pay the holder otherwise entitled to such fraction a sum in cash equal to the fair market value of such fraction on the date of conversion (as determined in good faith by the board of directors of the Corporation).

(l) Notices. Any notice required by the provisions of this Section B.3 to be given to the holders of shares of Series B Preferred Stock shall be deemed given on the date of delivery if delivered by hand delivery or by facsimile, or, if deposited in the United States mail (registered or certified), postage prepaid, and addressed to each holder of record at his or its address appearing on the books of the Corporation.

4. Series B Liquidation Preferences.

(a) In the event of any liquidation, dissolution or winding up of the Corporation whether voluntary or involuntary, the holders of the Series B Preferred Stock shall

be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of Common Stock or any other shares of this corporation other than Series B Preferred Stock by reason of their ownership thereof, the amount of $2.33433 per share (as adjusted for any stock dividends, combinations or splits with respect to such shares), plus all declared or accrued but unpaid, dividends on such share, for each share of Series B Preferred Stock then held by them. If upon the occurrence of such event, the assets and funds thus distributed among the holders of the Series B Preferred Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amount, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the holders of the Series B Preferred Stock in proportion to the

preferential amount each such holder is otherwise entitled to receive.

(b) After the payment to the holders of the Series B Preferred Stock of the amounts set forth in Section B.4(a) above, the holders of the Common Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of the other capital stock of the Company by reason of their ownership thereof, an aggregate distribution equal to the total consideration received by the Corporation for the sale and issuance of all issued and outstanding Series B Preferred Stock, with each holder of Common Stock participating on a pro rata basis based on the number of shares of Common Stock they own. If upon the occurrence of such event, the assets and funds thus distributed among the holders of the Common Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amount, then all assets and funds of the Corporation legally available for distribution after the payment to the holders of the Series B Preferred Stock of the amounts set forth in Section B.4(a) shall be distributed ratably among the holders of the Common Stock in proportion to the preferential amount each such holder is otherwise entitled to receive.

(c) After payments to (i) the holders of the Series B Preferred Stock of the amounts set forth in Section B.4(a) above, and (ii) the holders of the Common Stock of the amounts set forth in Section B.4(b) above, the entire remaining assets and funds of the Corporation legally available for distribution, if any, shall be distributed among the holders of the Common Stock and the Series B Preferred Stock in proportion to the shares of Common Stock then held by them and the shares of Common Stock which they then have the right to acquire upon conversion of the shares of Series B Preferred Stock then held by them.

5. Series B Protective Provisions. In addition to any other rights provided by law, so long as any share of Series B Preferred Stock shall be outstanding, the Corporation shall not, without first obtaining the affirmative vote or written consent of the holders of the majority of the outstanding shares of Series B Preferred Stock voting separately as a separate class, take any action which alters or changes any of the rights, privileges or preferences of the Series B Preferred Stock, including without limitation increasing or decreasing the aggregate number of authorized shares of such series other than an increase incident to a stock split.

C. SERIES C PREFERRED STOCK. A series of the class of Preferred Stock of the Company shall be hereby created, and the shares of such series shall be designated as "Series C

Preferred Stock", par value $0.01 per share. The number of shares constituting such series shall be 3,076,923 and the rights, preferences, privileges and restrictions granted to or imposed upon the Series C Preferred Stock are as follows:

1. Series C Dividends.

(a) The holders of outstanding Series C Preferred Stock shall be entitled to receive in any fiscal year, when, as and if declared by the Board of Directors, after the payment of dividends on Series B Preferred Stock, out of any assets at the time legally available therefor, dividends in amounts determined by the Corporation's Board of Directors before any other dividend or distribution (other than pursuant to Section C.4, or distributions with respect to the Series B Preferred Stock) is paid on Common Stock. Such dividend or distribution may be payable annually or otherwise as the Board of Directors may from time to time determine. The right to such dividends on shares of Series C Preferred Stock shall not be cumulative and no right shall accrue to holders of shares of Series C Preferred Stock by reason of the fact that dividends on said shares are not declared in any prior year, nor shall any undeclared or unpaid dividend bear or accrue interest.

2. Series C Voting Rights. Each holder of shares of

Series C Preferred Stock shall be entitled to the number of votes equal to the number of shares of Common Stock into which such holder's shares of Series C Preferred Stock could be converted on the record date for the vote or consent of stockholders multiplied by the Voting Power Fraction and, except as otherwise provided herein, shall have voting rights and powers equal to the voting rights and powers of the Common Stock. The Voting Power Fraction shall equal $1.30 divided by the average closing bid price of the Company's Common Stock during the 15 consecutive trading days immediately prior to the date the Series C Preferred was purchased (the "Average Closing Price"); but in no event shall be greater than one (1). The holder of each share of Series C Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of the Corporation and shall vote with holders of the Common Stock upon the election of directors and upon any other matter submitted to a vote of stockholders, except those matters required by law to be submitted to a class or series vote. Fractional votes by the holders of Series C Preferred Stock shall not, however, be permitted and any fractional voting rights resulting from the above formula (after aggregating all shares into which shares of Series C Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number.

3. Series C Conversion. The holders of Series C Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

(a) Right to Convert. Each share of Series C Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing $1.30 by the Series C Conversion Price, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The Series C Conversion Price shall initially be $1.30. Such initial Series C Conversion Price shall be adjusted as hereinafter provided.

(b) Mechanics of Conversion.

(i) Before any holder of Series C Preferred Stock shall be entitled to convert the same into shares of Common Stock, he shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and shall give written notice to the Corporation at such office that he elects to convert the same and shall state therein the name or names in which he wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series C Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of surrender of the shares of Series C Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

(ii) If a voluntary conversion is made in connection with an underwritten offering of securities pursuant to a registration statement filed pursuant to the Securities Act of 1933, as amended (the "Securities Act"), the conversion may, at the option of any holder tendering shares of Series C Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the person(s) entitled to receive the Common Stock upon conversion of the Series C Preferred Stock shall not be deemed to have converted such Series C Preferred Stock until immediately prior to the closing of such sale of securities.

(c) Adjustments for Stock Dividends, Subdivisions, or Split-ups of Common Stock. If the number of shares of Common

Stock outstanding at any time after the filing of the original Certificate of Designation with respect to the Series C Preferred Stock (February 8, 1996) is increased by a stock dividend payable in shares of Common Stock or by a subdivision or split-up of shares of Common Stock, then, effective at the close of business upon the record date fixed for the determination of holders of Common Stock entitled to receive such stock dividend, subdivision or split-up, the Series C Conversion Price shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of Series C Preferred Stock shall be increased in proportion to such increase of outstanding shares of Common Stock.

(d) Adjustments for Combinations of Common Stock. If the number of shares of Common Stock outstanding at any time after the filing of the original Certificate of Designation with respect to the Series C Preferred Stock (February 8, 1996) is decreased by a combination of the outstanding shares of Common Stock, then, effective at the close of business upon the record date of such combination, the Series C Conversion Price shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of Series C Preferred Stock shall be decreased in proportion to such decrease in outstanding shares of Common Stock.

(e) Adjustments for Other Distributions. In the event the Corporation at any time or from time to time makes, or fixes a record date for the determination of holders of Common Stock entitled to receive any distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series C Preferred Stock shall receive upon conversion thereof, in addition to the

number of shares of Common Stock receivable thereupon, the amount of securities of the Corporation which they would have received had their Series C Preferred Stock been converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by them as aforesaid during such period, subject to all other adjustments called for during such period under this Section C.3(e) with respect to the rights of the holders of the Series C Preferred Stock.

(f) Adjustments for Reorganizations, Reclassifications, etc. If the Common Stock issuable upon conversion of the Series C Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock or other securities or property, whether by reclassification, a merger or consolidation of this Corporation with or into any other corporation or corporations, or a sale of all or substantially all of the assets of this Corporation, or otherwise, the Series C Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series C Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock or securities or other property equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series C Preferred Stock immediately before such event; and, in any such case, appropriate adjustment (as determined by the Board) shall be made in the application of the provisions herein set forth with respect to the rights and interests thereafter of the holders of the Series C Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the Series C Conversion Price) shall thereafter be applicable, as nearly as may be reasonable, in relation to any shares of stock or other property thereafter deliverable upon the conversion of the Series C Preferred Stock.

(g) Certain Other Adjustment. If at any time after six (6)months following the consummation ("Closing") of the sale of Series

C Preferred Stock purchased pursuant to those certain Subscription and Purchase Agreements between the Corporation and each holder of such Series C Preferred Stock (such Closing having occurred on May 9, 1996), any such holder converts the Series C Preferred Stock, then the Series C Conversion Price applicable to such holder's shares shall be the lesser of (i) $1.30, or (ii) the greater of (x) .90 or (y) 80% of the average closing bid price of the Common Stock for the fifteen (15) consecutive trading days ending on the date immediately preceding the date notice of conversion is given. The Series C Conversion Price may only adjust once for each holder.

(h) Company's Right to Automatically Convert. If
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at any time after eight (8) months following the Closing the average closing bid price of the Corporation's Common Stock for 15 consecutive trading days as quoted on the Nasdaq National Market is equal to or greater than $2.60, the Corporation shall thereafter have the right to automatically convert the Series C Preferred Stock into such number of shares of Common Stock as is determined by dividing $1.30 by the then applicable Series C Conversion Price by notice given to such holders of Series C Preferred Stock.

(i) Certificates as to Adjustments. Upon the
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occurrence of each adjustment of the Series C Conversion Price pursuant to this Section C.3, the Corporation at its expense shall promptly compute such adjustment in accordance with the terms hereof and prepare and furnish to each applicable holder of Series C Preferred Stock a certificate executed by the Corporation's President or Chief Financial Officer setting forth such computation of adjustment.

(j) Notices of Record Date. In the event that
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the Corporation shall propose at any time: (a) to declare any special dividend or distribution upon its Common Stock, whether in cash, property, stock or other securities, whether or not out of earnings or earned surplus; (b) to offer for subscription pro rata to the holders of any class or series of its stock any additional shares of stock of any class or series or other rights; (c) to effect any reclassification or recapitalization of its Common Stock outstanding involving a change in the Common Stock; or (d) to merge or consolidate with or into any other corporation (other than a mere reincorporation transaction), or sell, lease or convey all or substantially all of its assets, or to liquidate, dissolve or wind up; then, in connection with each such event, the Corporation shall send to the holders of Series C Preferred Stock:

(i) at least twenty (20) days' prior written notice of the date on which a record shall be taken for such dividend, distribution or subscription rights (and specifying the date on which the holders of Common Stock shall be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (c) and (d) above; and

(ii) in the case of the matters referred to in (c) and (d) above, at least twenty (20) days' prior written notice of the date when the same shall take place (and specifying the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon the occurrence of such event).

(k) Reservation of Stock Issuable Upon

Conversion. The Corporation shall at all times reserve and keep available out of
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its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series C Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series C Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series C Preferred Stock, the Corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares s shall be sufficient for such purpose, including, without limitation, engaging in its best efforts to obtain the requisite stockholder approval of any necessary amendment

to the Certificate of Incorporation.

(l) Fractional Shares. No fractional share shall
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be issued upon the conversion of any share or shares of Series C Preferred Stock. All shares of Common Stock (including fractions thereof) issuable upon conversion of more than one share of Series C Preferred Stock by a holder thereof shall be aggregated for purposes of determining whether the conversion would result in the issuance of any fractional share. If, after the aforementioned

aggregation, the conversion would result in the issuance of a fraction of a share of Common Stock, the Corporation shall, in lieu of issuing any fractional share, pay the holder otherwise entitled to such fraction a sum in cash equal to the fair market value of such fraction on the date of conversion (as determined in good faith by the board of directors of the Corporation).

(m) Notices. Any notice required by the
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provisions of this Section C.3 to be given to the holders of shares of Series C Preferred Stock shall be deemed given on the date of delivery if delivered by hand delivery or by facsimile, or, if deposited in the United States mail (registered or certified), postage prepaid, and addressed to each holder of record at his or its address appearing on the books of the Corporation.

4. Series C Liquidation Preferences. In the event of any
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liquidation, dissolution or winding up of the Corporation whether voluntary or involuntary, the holders of the Series C Preferred Stock shall participate on an equal basis with the holders of the Common Stock (as if the Series C Preferred Stock had converted into Common Stock) in any distribution of any of the assets or surplus funds of the Corporation.

5. Series C Protective Provisions. In addition to any
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other rights provided by law, so long as any share of Series C Preferred Stock shall be outstanding, the Corporation shall not, without first obtaining the affirmative vote or written consent of the holders of the majority of the outstanding shares of Series C Preferred Stock voting separately as a separate class, take any action which alters or changes any of the rights, privileges or preferences of the Series C Preferred Stock, including without limitation increasing or decreasing the aggregate number of authorized shares of such series other than an increase incident to a stock split.

D. SERIES D PREFERRED STOCK. A series of the class of Preferred
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Stock of the Company shall be hereby created, and the shares of such series shall be designated as "Series D Preferred Stock", par value $0.01 per shares. The number of shares constituting such series shall be 2,000 and the stated value shall be One Thousand Dollars ($1,000) per share (the "Stated Value").

1. Rank With Respect to Liquidation Event. In the event
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of any distribution of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, the holders of Series D Preferred Stock shall participate on an equal basis with (i) the holders of the Corporation's Common Stock, par value $.50 per share (the "Common Stock"), as if the Series D Preferred Stock had converted into Common Stock; (ii) the holders of the Corporation's Series C Preferred Stock, par value $.01 per share (the "Series C Preferred Stock"); and (iii) the holders of any class or series of capital stock of the Corporation hereafter created (with the consent of the holders of Series D Preferred Stock obtained in accordance with Section 7 hereof) which specifically, by its terms, ranks pari passu with the Series D Preferred Stock (collectively, with the Common Stock and the Series C Preferred Stock, "Pari Passu Securities").

2. No Dividends. The Series D Preferred Stock will bear
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no dividends, and the holders of the Series D Preferred Stock shall not be entitled to receive dividends on the Series D Preferred Stock.

3. Cash Redemption of Premium by Corporation; Redemption of Series D Preferred Stock.

(a) The Corporation shall have the right, in its sole discretion, upon receipt of a Notice of Conversion pursuant to Section 4(d) or in the event of a Mandatory Conversion effected in accordance with Section 5 hereof, to redeem all or any portion of the Premium (as defined in Section 4(a) below) subject to such conversion for a sum of cash equal to the amount of the Premium being so redeemed. All cash redemption payments hereunder shall be paid in lawful money of the United States of America at such address for the holder as appears on the record books of the Corporation (or at such other address as such holder shall hereafter give to the Corporation by written notice). In the event the Corporation elects, pursuant to this Section 3(a), to redeem all or any portion of the Premium in cash and fails to pay such holder the applicable redemption amount to which such holder is entitled by depositing a check in the U.S. Mail to such holder within seven (7) business days of receipt by the Corporation of a Conversion Notice (in the case of a redemption in connection with an Optional Conversion) or May 15, 2001 (in the case of a redemption in connection with a Mandatory Conversion), the Corporation shall thereafter forfeit its right to redeem such Premium in cash and such Premium shall thereafter be converted into shares of Common Stock in accordance with Section 4 hereof.

(b) Each holder of Series D Preferred Stock shall have the right to require the Corporation to provide advance notice to such holder stating whether the Corporation will elect to redeem all or any portion of the Premium in cash pursuant to the Corporation's redemption rights discussed in Section D.3(a) as set forth herein. A holder may exercise such right from time to time by sending notice (an "Election Notice") to the Corporation, by facsimile, requesting that the Corporation disclose to such holder whether the Corporation would elect to redeem any portion of the Premium for cash in lieu of issuing Common Stock in accordance with Section 4 hereof if such holder were to exercise his, her or its right of conversion pursuant to Section 4. The Corporation shall, no later than the fifth (5th) business day following receipt of an Election Notice, disclose to such holder, whether the Corporation would elect to redeem any portion of a Premium in connection with a conversion pursuant to a Conversion Notice delivered over the subsequent ten (10) business day period. If the Corporation does not respond to such holder within such five (5) business day period via facsimile, the Corporation shall, with respect to any conversion pursuant to a Conversion Notice delivered within the subsequent ten (10) business day period, forfeit its right to redeem such Premium in accordance with Section D.3(a) and shall be required to convert such Premium into shares of Common Stock in accordance with Section 4 hereof.

(c) Except as provided in Section D.3 and Section D.4 hereof, the Series D Preferred Stock is not subject to redemption.

(d) Commencing May 15, 1998, at any time that the average of the closing bid prices for the Common Stock on NASDAQ, or on the principal securities exchange or other securities market on which the Common Stock is being traded, for the twenty (20) consecutive Trading Days ending one Trading Day prior to the date the Corporation provides the

holders a Redemption Notice (as defined herein) under this Section D.3 is equal to or greater than 200% of the closing bid price for the Common Stock on NASDAQ (or on the principal securities exchange or other securities market on which the Common Stock is being traded) on the Closing Date (as defined herein) (the "Optional Redemption Threshold Price"), the Corporation shall have the right, in its sole discretion, to redeem ("Redemption at Corporation's Election") any or all of the Series D Preferred Stock at the Redemption Price (as defined herein), in accordance with the redemption procedures set forth below; provided, however, that if the average closing bid price of the Common Stock for any ten (10) consecutive Trading Days after a Redemption Notice is less than 75% of the Optional Redemption Threshold Price, the Corporation's Redemption Notice shall

thereafter be rendered null and void and the Corporation shall not have the right to redeem the Series D Preferred Stock pursuant to the terms of this Section D.3 unless and until it delivers another Redemption Notice to the holders of the Series D Preferred Stock in accordance with the provisions of this Section D.3. "Trading Day" shall mean any day on which the Common Stock is traded for any period on NASDAQ, or on the principal securities exchange or other securities market on which the Common Stock is then being traded. If the Corporation elects to redeem some, but not all, of the Series D Preferred Stock, the Corporation shall redeem a pro-rata amount from each holder of Series D Preferred Stock. Holders of Series D Preferred Stock may convert all or any part of their shares of Series D Preferred Stock into Common Stock by delivering a Notice of Conversion (as defined herein) to the Corporation at any time prior to the Effective Date of Redemption (as defined herein).

(e) The "Redemption Price" with respect to each share of Series D Preferred Stock shall mean the amount equal to the sum of (i) the Stated Value thereof plus (ii) the amount equal to eight (8%) percent per annum of such Stated Value for the period beginning on the issuance of such share and ending on the Effective Date of Redemption hereunder.

(f) The Corporation shall effect each redemption under this Section D.3 by giving at least ninety (90) days (subject to extension as set forth below) prior written notice (the "Redemption Notice") to (i) the holders of Series D Preferred Stock selected for redemption at the address and facsimile number of such holder appearing in the Corporation's register for the Series D Preferred Stock and (ii) the Transfer Agent, which Redemption Notice shall be deemed to have been delivered three (3) business days after the Corporation's mailing (by overnight courier, with a copy by facsimile) of such notice. Such Redemption Notice shall indicate the number of shares of the holder's Series D Preferred Stock that have been selected for redemption, the date which such redemption is to become effective (the "Effective Date of Redemption") and the Redemption Price. The Corporation shall not be entitled to send any Redemption Notice and begin the redemption procedure unless it has (i) the full amount of the Redemption Price, in cash, available in a demand or other immediately available account in a bank or similar financial institution or (ii) immediately available credit facilities, in the full amount of the Redemption Price, with a bank or similar financial institution on the date the Redemption Notice is delivered to the applicable holder. Notwithstanding the foregoing, the ninety (90) day notice period referred to herein shall be extended with respect to any holder of Series D Preferred Stock by such number of days after the date of the Redemption Notice as such holder is not permitted to sell all of its Series D Preferred Stock pursuant to an effective

registration statement filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (or a successor statute) (the "1933 Act") or pursuant to Rule 144(k) under the 1933 Act.

The Redemption Price shall be paid to the holder of the Series D Preferred Stock being redeemed within 10 business days of the Effective Date of Redemption; provided, however, that the Corporation shall not be obligated to deliver any portion of the Redemption Price until either the certificates evidencing the Series D Preferred Stock being redeemed are delivered to the office of the Corporation or the Transfer Agent, or the holder notifies the Corporation or the Transfer Agent that such certificates have been lost, stolen or destroyed and delivers the documentation in accordance with Section D.4(d) hereof. Notwithstanding anything herein to the contrary, in the event that the certificates evidencing the Series D Preferred Stock redeemed are not delivered to the Corporation or the Transfer Agent prior to the 10th business day following the Effective Date of Redemption, the redemption of the Series D Preferred Stock pursuant to this Section D.3 shall still be deemed effective as of the Effective Date of Redemption and the Redemption Price shall be paid to the holder of Series D Preferred Stock redeemed within 5 business days of the date the certificates evidencing the Series D Preferred Stock redeemed are actually delivered to the Corporation or the Transfer Agent.

(g) If of any of the following events (each, a "Mandatory Redemption Event") shall occur:

(i) Conversion and the Shares. The

Corporation fails to issue shares of Common Stock (subject to the limitations set forth in Section D.4(g)) to the holders of Series D Preferred Stock upon exercise by the holders of their conversion rights in accordance with the terms of this Certificate of Designation (for a period of at least sixty (60) days if such failure is solely as a result of the circumstances governed by Section D.4(e) below and the Corporation is using all commercially reasonable efforts to authorize a sufficient number of shares of Common Stock as soon as practicable), fails to transfer any certificate for shares of Common Stock issued to the holders upon conversion of the Series D Preferred Stock and when required by Section D of the Fourth Restated Certificate of Incorporation or the Registration Rights Agreement, dated as of May 15, 1996, by and among the Corporation and the other signatories thereto (the "Registration Rights Agreement") (or shares of Common Stock issuable upon exercise of the warrants (the "Warrants") issued pursuant to the Securities Purchase Agreement, dated as of May 15, 1996, by and between the Corporation and the other signatory thereto (the "Purchase Agreement") in accordance with the Warrants), or fails to remove any restrictive legend on any certificate or any shares of Common Stock issued to the holders of Series D Preferred Stock upon conversion of the Series D Preferred Stock as and when required by this Fourth Restated Certificate of Incorporation, the Purchase Agreement or the Registration Rights Agreement (or shares of Common Stock issuable upon exercise of the Warrants in accordance with the Warrants) and any such failure shall continue uncured for twenty (20) business days after the Corporation shall have been notified thereof in writing by the holder;

(ii) Failure to Register. The Corporation
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fails to obtain effectiveness with the Securities and Exchange Commission (the "SEC") of the Registration

Statement (as defined in the Registration Rights Agreement) prior to November 15, 1996 (other than because of issues raised by the SEC arising from the transactions contemplated by the Purchase Agreement or because of a change in the policy, procedures, interpretations, positions, practice or rules of the SEC made public after the date hereof so long as, in either case, the Corporation is using all commercially reasonable efforts to achieve the effectiveness of such Registration Statement) or lapses in effect (or sales otherwise cannot be made thereunder) for more than thirty (30) consecutive days or sixty (60) days in any twelve (12) month period after such Registration Statement becomes effective;

(iii) Receiver or Trustee. The

Corporation or any subsidiary of the Corporation shall make an assignment for the benefit of creditors, or apply for or consent to the appointment of a receiver or trustee for it or for all or substantially all of its property or business; or such a receiver or trustee shall otherwise be appointed;

(iv) Bankruptcy. Bankruptcy, insolvency,
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reorganization or liquidation proceedings or other proceedings for relief under any bankruptcy law or any law for the relief of debtors shall be instituted by or against the Corporation or any subsidiary of the Corporation.

Then, upon the occurrence and during the continuation of any Mandatory Redemption Event specified in subparagraphs (i) or (ii), at the option of the holders of at least 50% of the then outstanding shares of Series D Preferred Stock by written notice (the "Mandatory Redemption Notice") to the Corporation of such Mandatory Redemption Event, the Corporation shall, and upon the occurrence of any Mandatory Redemption Event specified in subparagraphs (iii) or (iv), purchase the holder's shares of Series D Preferred Stock for an amount per share equal to 125% multiplied by the Redemption Price in effect at the time of the redemption hereunder.

Subject to the limitations contained in Section D.4(g), if the Corporation fails to pay the Mandatory Redemption Amount for each share within five (5) business days of written notice that such amount is due and payable, then each holder of Series D Preferred Stock shall have the right at any time, so long as the Mandatory Redemption Event continues to require the Corporation, upon written notice, to immediately issue (in accordance with the terms of Section D.4 below), in lieu of the Mandatory Redemption Amount, with respect to

each outstanding share of Series D Preferred Stock held by such holder, the number of shares of Common Stock of the Corporation equal to the Mandatory Redemption Amount divided by the Conversion Price then in effect.

4. Conversion at the Option of the Holder.

(a) Each holder of shares of Series D Preferred Stock may, at its option at any time and from time to time (whether or not the Corporation has sent an Optional Conversion Notice to the holders of Series D Preferred Stock pursuant to Section D.3), upon surrender of the certificates therefor, convert any or all of its shares of Series D Preferred Stock into Common Stock as follows (an "Optional Conversion"). Each share of Series D Preferred Stock shall be convertible into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing (x) the sum of (I) the Stated Value thereof, plus (II) unless the Corporation has timely redeemed such Premium in cash in accordance with Section D.3, an amount equal to eight percent (8%) per annum of such Stated Value for the period beginning on the date of issuance of such share and ending on the Conversion Date (the "Premium"), by (y) the then effective Conversion Price (as defined below); provided, however, that in no event shall holders of shares of Series D Preferred Stock be entitled to convert any such shares in excess of that number of shares upon conversion of which the sum of (x) the number of shares of Common Stock beneficially owned by the holder and its affiliates (other than shares of Common Stock which may be deemed beneficially owned through the ownership of the unconverted portion of the shares of Series D Preferred Stock and the unexercised portion of the Warrants) and (y) the number of shares of Common Stock issuable upon the conversion of the shares of Series D Preferred Stock with respect to which the determination of this proviso is being made would result in beneficial ownership by the holder and its affiliates of more than 4.9% of the outstanding shares of Common Stock. For purposes of the second proviso to the immediately preceding sentence, beneficial ownership shall be determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended, and Regulation 13 D-G thereunder, except as otherwise provided in clause (x) of such proviso.

(b) The "Conversion Price" shall be the lesser of (i) the Applicable Percentage (as hereinafter defined) of the average of the closing bid prices for the Common Stock on the NASDAQ National Market ("NASDAQ"), or on the principal securities exchange or other securities market on which the Common Stock is then being traded, for the five (5) consecutive Trading Days (as defined below) ending one Trading Day prior to the date (the "Conversion Date") the Conversion Notice is sent by a holder to the Corporation via facsimile (the "Variable Conversion Price"), and (ii) the average of the closing bid prices for the Common Stock on NASDAQ for the five (5) consecutive Trading Days ending on the Closing Date under the Purchase Agreement (the "Closing Date") (the "Fixed Conversion Price") (subject to equitable adjustments from time to time pursuant to the antidilution provisions of Section D.4(c) below). Applicable Percentage means (i) 100%, if the Conversion Date is within forty (40) days after the Closing Date, and (ii) 90%, if the Conversion Date is within eighty (80) days, but more than forty (40) days, after the Closing Date, and (iii) 75%, if the Conversion Date is more than eighty (80) days after the Closing Date.

(c) The Conversion Price shall be subject to adjustment from time to time as follows:

(i) Adjustment to Fixed Conversion Price Due to Stock Split, Stock Dividend, Etc. If at any time when the Series D Preferred Stock is issued and outstanding, the number of outstanding shares of Common Stock is increased by a stock split, stock dividend, or other similar event, the Fixed Conversion Price shall be proportionately reduced, or if the number of outstanding shares of Common Stock is decreased by a reverse stock split, combination or reclassification of shares, or other similar event, the Fixed Conversion Price shall be proportionately increased. In such event the

Corporation shall notify the Transfer Agent of such change on or before the effective date thereof.

(ii) Adjustment to Variable Conversion Price. If at any time when Series D Preferred Stock is issued and outstanding, the number of outstanding shares of Common Stock is increased or decreased by a stock split, stock dividend, combination, reclassification or other similar event, which event shall have taken place during the reference period for determination of the Conversion Price for any Optional Conversion or Mandatory Conversion of the Series D Preferred Stock, then the Variable Conversion Price shall be calculated giving appropriate effect to the stock split, stock dividend, combination, reclassification or other similar event for all five (5) Trading Days immediately preceding the Conversion Date.

(iii) Adjustment Due to Merger, Consolidation, Etc. If, at any time when Series D Preferred Stock is issued and outstanding and prior to the conversion of all Series D Preferred Stock, there shall be (i) any reclassification or change of the outstanding shares of Common Stock (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), (ii) any consolidation or merger of the Corporation with any other corporation (other than a merger in which the Corporation is the surviving or continuing corporation and its capital stock is unchanged), (iii) any sale or transfer of all or substantially all of the assets of the Corporation or (iv) any share exchange pursuant to which all of the outstanding shares of Common Stock are converted into other securities or property, then the holders of Series D Preferred Stock shall, upon being given at least thirty (30) days prior written notice of such transaction, thereafter have the right to purchase and receive upon conversion of Series D Preferred Stock, upon the basis and upon the terms and conditions specified herein and in lieu of the shares of Common Stock immediately theretofore issuable upon conversion, such shares of stock and/or securities or other property as may be issued or payable with respect to or in exchange for the number of shares of Common Stock immediately theretofore purchasable and receivable upon the conversion of Series D Preferred Stock held by such holders had such merger, consolidation, exchange of shares, recapitalization, reorganization or other similar event not taken place and in any such case appropriate provisions shall be made with respect to the rights and interests of the holders of the Series D Preferred Stock to the end that the provisions hereof (including, without limitation, provisions for adjustment of the Conversion Price and of the number of shares issuable upon conversion of the Series D Preferred Stock) shall thereafter be applicable, as nearly as may be practicable in relation to any shares of stock or securities thereafter deliverable upon the conversion thereof. The Corporation shall not effect any transaction described in this subsection (c) unless (i) each holder of Series D Preferred Stock has received written notice of such transaction at least thirty (30) days prior thereto and in no event later than ten (10) days prior to

the record date for the determination of shareholders entitled to vote with respect thereto, and (ii) the provisions of this paragraph have been complied with. The above provisions shall similarly apply to successive reclassifications, consolidations, mergers, sales, transfers or share exchanges.

(iv) No Fractional Shares. If any adjustment under this Section D.4(c) would create a fractional share of Common Stock or a right to acquire a fractional share of Common Stock, such fractional share shall be disregarded and the number of shares of Common Stock issuable upon conversion shall be the next higher number of shares.

(d) In order to convert Series D Preferred Stock into full shares of Common Stock, a holder shall: (i) fax a copy of the fully executed notice of conversion in the form attached hereto as Exhibit A ("Notice of Conversion") to the Corporation at the office of the Corporation for the Series D Preferred Stock that the holder elects to convert the same, which notice shall specify the number of shares of Series D Preferred Stock to be

converted, the applicable Conversion Price and a calculation of the number of shares of Common Stock issuable upon such conversion (together with a cop of the first page of each certificate to be converted) prior to Midnight, New York City time (the "Conversion Notice Deadline") on the date of conversion specified on the Notice of Conversion; and (ii) surrender the original certificates representing the Series D Preferred Stock being converted (the "Preferred Stock Certificates"), duly endorsed, along with a copy of the Notice of Conversion as soon as practicable thereafter to the office of the Corporation for the Series D Preferred Stock; provided, however, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless either the Preferred Stock Certificates are delivered to the Corporation as provided above, or the holder notifies the Corporation that such certificates have been lost, stolen or destroyed (subject to the requirements of subparagraph (i) below). In the case of a dispute as to the calculation of the Conversion Price, the Corporation shall promptly issue such number of shares of Common Stock that are not disputed in accordance with subparagraph (ii) below. The Corporation shall submit the disputed calculations to its outside accountant via facsimile within three (3) business days of receipt of the Notice of Conversion. The accountant shall audit the calculations and notify the Corporation and the holder of the results no later than 48 hours from the time it receives the disputed calculations. The accountant's calculation shall be deemed conclusive absent manifest error.

(i) Lost or Stolen Certificates. Upon
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receipt by the Corporation of evidence of the loss, theft, destruction or mutilation of any Preferred Stock Certificates representing shares of Series D Preferred Stock, and (in the case of loss, theft or destruction) of indemnity or security reasonably satisfactory to the Corporation, and upon surrender and cancellation of the Preferred Stock Certificate(s), if mutilated, the Corporation shall execute and deliver new Preferred Stock Certificate(s) of like tenor and date. However, the Corporation shall not be obligated to reissue such lost or stolen Preferred Stock Certificate(s) if the holder contemporaneously requests the Corporation to convert such Series D Preferred Stock.

(ii) Delivery of Common Stock Upon

Conversion. Upon the surrender of certificates as described above from a holder
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of Series D Preferred Stock accompanied by a Notice of Conversion, the Corporation shall issue and, within two (2) business

days (the "Delivery Period") after such surrender (or, in the case of lost, stolen or destroyed certificates, after provision of agreement and indemnification pursuant to subparagraph (i) above), deliver to or upon the order of the holder (i) that number of shares of Common Stock for the portion of the shares of Series D Preferred Stock converted as shall be determined in accordance herewith and (ii) a certificate representing the balance of the shares of Series D Preferred Stock not converted, if any. In addition to any other remedies available to the holder, including actual damages and/or equitable relief, the Corporation shall pay to a holder $250 in cash for the first day beyond such Delivery Period that the Corporation fails to deliver Common Stock issuable upon surrender of shares of Series D Preferred Stock with a Notice of Conversion and $500 per day in cash for each day thereafter until such time as the earlier of the date that the Corporation has delivered all such Common Stock and the tenth day beyond such Delivery Period. Such cash amount shall be paid to such holder by the fifth day of the month following the month in which it has accrued. In the event the Corporation fails to deliver such Common Stock prior to the expiration of the ten (10) business day period after the Delivery Period for any reason (whether due to a requirement of law or a stock exchange or otherwise), such holder shall be entitled to (in addition to any other remedies available to the holder) Conversion Default Payments in accordance with Section D.4(e) hereof beginning on the expiration of such ten (10) business day period.

(iii) No Fractional Shares. If any
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conversion of Series D Preferred Stock would result in a fractional share of Common Stock or the right to acquire a fractional share of Common Stock, such fractional share shall be disregarded and the number of shares of Common Stock

issuable upon conversion of the Series D Preferred Stock shall be the next higher number of shares.

(iv) Conversion Date. The "Conversion Date" shall be the date specified in the Notice of Conversion, provided (i) that the advance copy of the Notice of Conversion is faxed to the Corporation before Midnight, New York City time, on the Conversion Date, and (ii) that the original Preferred Stock Certificate(s), duly endorsed, are surrendered along with a copy of the Notice of Conversion as soon as practicable thereafter to the office of the Corporation or the Transfer Agent for the Series D Preferred Stock. The person or persons entitled to receive the shares of Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such securities as of the Conversion Date and all rights with respect to the shares of Series D Preferred Stock surrendered shall forthwith terminate except the right to receive the shares of Common Stock or other securities or property issuable on such conversion.

(e) A number of shares of the authorized but unissued Common Stock sufficient to provide for the conversion of the Series D Preferred Stock outstanding at the then current Conversion Price shall at all times be reserved by the Corporation, free from preemptive rights, for such conversion or exercise. If the Corporation shall issue any securities or make any change in its capital structure which would change the number of shares of Common Stock into which each share of the Series D Preferred Stock shall be convertible at the then current Conversion Price, the Corporation shall at the same time also make proper provision so that thereafter there shall be a sufficient number of shares of Common Stock authorized and reserved,

free from preemptive rights, for conversion of the outstanding Series D Preferred Stock on the new basis. If, at any time a holder of shares of Series D Preferred Stock submits a Conversion Notice, the Corporation does not have sufficient authorized but unissued shares of Common Stock available to effect such conversion in accordance with the provisions of this Section 4 (a "Conversion Default"), the Corporation shall issue to the holder all of the shares of Common Stock which are available to effect such conversion (including, with the Holder's written consent, any shares underlying outstanding Warrants ("Borrowed Shares")). The number of shares of Series D Preferred Stock included in the Notice of Conversion which exceeds the amount which is then convertible into available shares of Common Stock (including Borrowed Shares, if any) (the "Excess Amount") shall, notwithstanding anything to the contrary contained herein, not be convertible into Common Stock in accordance with the terms hereof until (and at the holder's option at any time after) the date additional shares of Common Stock are authorized by the Corporation to permit such conversion, at which time the Conversion Price in respect thereof shall be the lesser of (i) the Conversion Price on the Conversion Date Default (as defined below) and (ii) the Conversion Price on the Conversion Date elected by the holder in respect thereof. The Corporation shall pay to the holder payments ("Conversion Default Payments") for a Conversion Default in the amount of (N/365), multiplied by the sum of the Stated Value with respect to each share of Series D Preferred Stock, multiplied by the Default Amount (as defined below) on the first day of the Conversion Default (the "Conversion Default Date"), multiplied by .25, where (i) N = the number of days from the Conversion Default Date to the earlier of (A) the date (the "Authorization Date") that the Corporation authorizes a sufficient number of shares of Common Stock to effect conversion of the full number of shares of Series D Preferred Stock and (B) the date such share of Series D Preferred Stock is redeemed in accordance with Section D.4(d) and (ii) "Default Amount" means the Excess Amount plus the number of shares of Series D Preferred Stock that would not be convertible as a result of this Section D.4(e) but for the Borrowed Shares. The Corporation shall send notice to the holder of the authorization of additional shares of Common Stock, the Authorization Date and the amount of holder's accrued Conversion Default Payments. The accrued Conversion Default Payments for each calendar month shall be paid in cash or, subject to the limitations contained in Section D.4(g), shall be convertible into Common Stock at the Conversion Price, at the holder's option, as follows:

(i) In the event holder elects to take such payment in cash, cash payment shall be made to holder by the fifth day of the month following the month in which it has accrued; and

(ii) In the event holder elects to take such payment in Common Stock, the holder may convert such payment amount into Common Stock at the Conversion Price (as in effect at the time of Conversion) at any time after the fifth day of the month following the month in which it has accrued in accordance with the terms of this Section 4.

1. Nothing herein shall limit the holder's right to pursue actual damages for the Corporation's failure to maintain a sufficient number of authorized shares of Common Stock, and each holder shall have the right to pursue all remedies available at law or in equity (including a decree of specific performance and/or injunctive relief).

(f) Upon the occurrence of each adjustment or readjustment of the Conversion Price pursuant to this Section 4, the Corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Series D Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any holder of Series D Preferred Stock, furnish or cause to be furnished to each holder a like certificate setting forth (i) such adjustment or readjustment, (ii) the Conversion Price at the time in effect and (iii) the number of shares of Common Stock and the amount, if any, of other securities or property which at the time would be received upon conversion of a share of Series D Preferred Stock.

(g) Notwithstanding anything contained herein to the contrary, in no event shall the aggregate number of shares of Common Stock issuable upon conversion or redemption of, or otherwise issuable with respect to, all of the Series D Preferred Stock issued by the Corporation pursuant to the Purchase Agreement (including, without limitation, all shares of Common Stock issued with respect to such Series D Preferred Stock pursuant to Section D.3 and Section D.4(e) hereof, but without taking into account any shares of Common Stock issuable upon exercise of Warrants) plus all shares of Common Stock issuable pursuant to Section 2(c) of the Registration Rights Agreement exceed 2,424,884 (subject to equitable adjustments from time to time pursuant to the antidilution provisions of Section D.4(c) above). In the event the Corporation is prohibited from issuing shares of Common Stock as a result of the operation of this Section D.4(g), the provisions of Section 3, subparagraph (ii) of Section D.4(d) and Section D.4(e) shall apply to the extent applicable.

5. Mandatory Conversion.

Each share of Series D Preferred Stock issued and outstanding on May 15, 2001, automatically shall be converted into shares of Common Stock on such date at the then effective Conversion Price in accordance with the provisions of Section D.4 hereof (the "Mandatory Conversion").

6. Voting Rights.

The holders of the Series D Preferred Stock have no voting power whatsoever, except as otherwise provided by the Delaware General Corporation Law ("DGCL"), and in this Section D.6, and in Section D.7 below.

Notwithstanding the above, the Corporation shall provide each holder of Series D Preferred Stock with prior notification of any meeting of the shareholders (and copies of proxy materials and other information sent to shareholders). In the event of any taking by the Corporation of a record of its shareholders for the purpose of determining shareholders who are entitled to receive payment of any dividend or other distribution, any right to subscribe for, purchase or otherwise acquire (including by way of merger, consolidation or recapitalization) any share of any class or any other securities or property, or to receive any other right, or for the purpose of determining shareholders who are entitled to vote in connection with any proposed

sale, lease or conveyance of all or substantially all of the assets of the Corporation, or any proposed liquidation, dissolution or winding up of the Corporation, the Corporation shall mail a notice to each holder, at least ten (10) days prior to the record date specified therein (or 30 days prior to the consummation of the transaction or event, whichever is earlier), of the date on which any such record is to be taken for the purpose of such dividend, distribution, right or other event, and a brief statement regarding the amount and character of such dividend, distribution, right or other event to the extent known at such time.

To the extent that under the DGCL the vote of the holders of the Series D Preferred Stock, voting separately as a class or series as applicable, is required to authorize a given action of the Corporation, the affirmative vote or consent of the holders of at least a majority of the shares of the Series D Preferred Stock represented at a duly held meeting at which a quorum is present or by written consent of a majority of the shares of Series D Preferred Stock (except as otherwise may be required under the DGCL) shall constitute the approval of such action by the class. To the extent that under the DGCL holders of the Series D Preferred Stock are entitled to vote on a matter with holders of Common Stock, voting together as one class, each share of Series D Preferred Stock shall be entitled to a number of votes equal to the number of shares of Common Stock into which it is then convertible using the record date for the taking of such vote of shareholders as the date as of which the Conversion Price is calculated. Holders of the Series D Preferred Stock shall be entitled to notice of (and copies of proxy materials and other information sent to shareholders) all shareholder meetings or written consents with respect to which they would be entitled to vote, which notice would be provided pursuant to the Corporation's by-laws and the DGCL.

7. Protection Provision.

So long as shares of Series D Preferred Stock are outstanding, the Corporation shall not, without first obtaining the approval (by vote or written consent, as provided by the DGCL) of the holders of at least a majority of the then outstanding shares of Series D Preferred Stock:

(a) alter or change the rights, preferences or privileges of the Series D Preferred Stock or any other class or series of capital stock of the Corporation so as to affect adversely the Series D Preferred Stock;

(b) create any new class or series of capital stock having a preference over the Series D Preferred Stock as to distribution of assets upon liquidation, dissolution or winding up of the Corporation ("Senior Securities");

(c) create any new class or series of capital stock ranking pari passu with the Series D Preferred Stock as to distribution of assets upon liquidation, dissolution or winding up of the Corporation (as previously defined in Section D.1 hereof, "Pari Passu Securities");

(d) increase the authorized number of shares of Series D Preferred Stock.

(e) do any act or thing not authorized or contemplated by this Certificate of Designation which would result in taxation of the holders of shares of the Series D Preferred Stock under Section 305 of the Internal Revenue Code of 1986, as amended (or any comparable provision of the Internal Revenue Code as hereafter from time to time amended); or

(f) issue after the Closing Date any Senior Securities or Pari Passu Securities (other than Common Stock).

In the event holders of at least a majority of the then outstanding shares of Series D Preferred Stock agree to allow the Corporation to alter or change the rights, preferences or privileges of the shares of Series D Preferred Stock, pursuant to subsection (a) above, so as to affect the Series D Preferred Stock, then the Corporation will deliver notice of such approved change to the holders of the Series D Preferred Stock that did not agree to such alteration or

change (the "Dissenting Holders") and Dissenting Holders shall have the right for a period of twenty (20) days to convert pursuant to the terms of this Section D of the Fourth Restated Certificate of Incorporation of the Corporation as they exist prior to such alteration or change or continue to hold their shares of Series D Preferred Stock.

8. Notices.

Each holders of Series D Preferred Stock shall send a copy of all notices to be given to the Corporation under this Section D of the Second Restated Certificate of Incorporation to such one (1) counsel as the Corporation may designate in writing at least five (5) business days prior to such holder sending such notice. For purposes of this Section D.8, the initial counsel designated by the Corporation for receiving copies of notices under this Section D of the Fourth Restated Certificate of Incorporation shall be Jackson Tufts Cole & Black, LLP, 60 South Market Street, San Jose, California 95113, Attention: Richard Scudellari, Telecopier (408) 998-4889.

FIFTH: In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to adopt, alter or repeal the by-laws of the Company, subject always to the right of the stockholders entitled to vote with respect thereto to adopt additional bylaws and to alter or repeal by-laws adopted by the Board of Directors, and to provide in connection therewith that any by-law adopted or altered by the stockholders may be altered or repealed only by a vote of a designated proportion of the stockholders.

SIXTH:

(A) If with respect to any of the following transactions, a stockholder vote is required by law or by any other rules or policies to which the Company may then be subject, the affirmative vote of two-thirds of the outstanding stock entitled to vote thereon, given in person or by proxy, at a meeting called for the purpose shall be necessary.

(a) To approve (i) the lease, sale, exchange, transfer or other disposition by the Company of all or substantially all, of its assets or business to a related company, or an affiliate of a related company, or (ii) the consolidation of the Company with or its merger into a related company or an affiliate of a related company, or (iii) the merger into the Company or a subsidiary of the Company of a related company or an affiliate of a related company, or (iv) an acquisition of substantially all of the assets of a corporation or of the securities representing such assets, in which the Company, or any subsidiary of the Company, is the acquiring corporation and voting shares of the Company are issued or transferred to a related company or an affiliate of a related company, or to stockholders of a related company, or an affiliate of a related company, or an associated person.

(b) To approve any agreement, contract, or other arrangement with a related company or an affiliate of a related company, or an associated person providing for any of the transactions described in subparagraph (a) above; or

(c) To effect any amendment of the Certificate of Incorporation which changes the provisions of this Article Sixth:

1. For the purpose of this Article Sixth, (i) a "related company" in respect of a given transaction, shall be any person, partnership, corporation,

or firm (except a subsidiary of the Company at least a majority of whose stock is owned by the Company) which, together with its affiliates and associated persons owns of record or beneficially, directly or indirectly, in excess of 10% of the outstanding shares of the Company, entitled to vote upon such transaction, as of the record

date used to determine the stockholders of the Company entitled to vote upon such transaction; (ii) an "affiliate" of a related company shall be any individual, joint venture, trust, partnership, or corporation which, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, the related company; and (iii) an "associated person" of a related company shall be any officer or director or any beneficial owner, directly or indirectly, of 10% or more of any class of equity security of such related company or any of its affiliates.

The determination of the Board of Directors of the Company, based on information known to the Board of Directors and made in good faith, shall be conclusive as to whether any person, partnership, corporation or firm is a related company or affiliate or associated person as defined in this Article Sixth.

(B) If the provisions of this Article Sixth are applicable to a transaction and if the provisions of Section 262 of the Delaware General Corporation Law, or any similar provision hereinafter enacted, would be applicable thereto but for the provisions of subparagraph (k) thereof, then the stockholders of the Company shall be entitled to the rights granted by Section 262 of the Delaware General Corporation Law or any similar provision hereafter enacted notwithstanding the exemptions contained in subparagraph (k) of such section.

(C) If the provisions of this Article Sixth are applicable to a transaction, but the provisions of Section 262 of the Delaware General Corporation Law are not applicable thereto, notwithstanding the elimination of the exemptions contained in subparagraph (k) of such Section, then a holder of dissenting shares with respect to such transaction shall be entitled to receive from the Company, payment for the value of his stock on the effective date of the transaction, excluding any appreciation or depreciation in value from the expectation or accomplishment of the transaction.

(a) To qualify as a holder of dissenting shares, a stockholder shall, before the taking of the vote on the transaction, file with the Company a written objection to such proposed transaction. Following the effective date of such transaction, the Company shall notify each stockholder who has filed such written objection and whose shares were not voted in favor of the transaction, that the transaction has become effective. The notice shall be sent by registered or certified mail, return receipt requested, addressed to the stockholder at his address as it appears on the records of the Company. Such stockholder shall, within 20 days after the mailing of the notice, demand, in writing, from the Company, payment of the value of his stock. The demand shall state the number and class of shares held of record by the stockholder which he demands that the Company purchase and shall contain a request that the Company state what it claims to be the fair market value of these shares. In addition, within 20 days after the date of mailing of such notice, such stockholder shall submit to the Company at its principal office or at the office of any transfer agent thereof, his certificate representing the shares which he demands

that the Company purchase to be stamped or endorsed with a statement that the shares are dissenting shares or to be exchanged for a certificate of appropriate denomination to be so stamped or endorsed. Upon subsequent transfers of such dissenting shares on the books of the Company, the new certificates issued therefor shall bear a like statement, together with the name of the original dissenting holder of the shares.

(b) As used in this paragraph (C) "dissenting shares" means shares which come within all the following descriptions:

1. Which were held of record on the date for the determination of stockholders entitled to vote at the meeting at which the transaction was approved and the holder thereof filed written objection thereto with the Company before the taking of the vote thereon and did not vote in favor thereof.

2. Which the holder has demanded that the Company purchase at their fair market value in accordance with subparagraph (a) above.

3. Which the holder has submitted for endorsement in accordance with subparagraph (a) above.

(c) Within five days after receipt of a copy of a demand for purchase of shares as dissenting shares, the Company shall, by registered or certified mail, return receipt requested, addressed to the stockholder at his address as it appears on the records of the Company, mail a written offer to purchase the shares if they are determined to be dissenting shares, at a price deemed by the Company to represent their fair market value.

(d) Payment of the fair market value of the dissenting shares shall be made within 30 days after the amount thereof has been agreed upon, upon surrender of the certificates therefor unless provided otherwise by agreement.

(e) If the Company shall deny that the shares are dissenting hares, or the Company shall fail to make an offer for the shares, or the Company and the stockholder fail to agree upon the fair market value of the shares, the Company or any stockholder demanding purchase of his shares as dissenting shares, within four months after the date upon which the Company mailed notice that the transaction was effective, but not thereafter, may make written demand to the American Arbitration Association, Los Angeles, California, for a determination of the value of the dissenting shares or of whether the shares are dissenting shares, or both, in accordance with the Commercial Arbitration Rules of such Association, which arbitration shall be conducted in Los Angeles, California. If such arbitration is commenced by the Company, there shall be named therein all stockholders who have theretofore qualified as dissenting stockholders. If such arbitration is commenced by any one or more of such stockholders, the Company shall be permitted to join therein all stockholders who have theretofore qualified as dissenting stockholders. The arbitration shall be conducted before a panel of three arbitrators selected in accordance with the Commercial Arbitration Rules of the America Arbitration Association, and such panel of arbitrators shall determine those stockholders who have complied

with the provisions of this Paragraph (C), and who have become entitled to the valuation of any payment for their shares and the value of such dissenting shares. Each stockholder who is a party to such arbitration, and the Company, shall be afforded reasonable opportunity to submit pertinent evidence on the value of the shares. Upon the determination of the value of the stock and of the stockholders entitled to payment therefor by the panel of arbitrators, such panel of arbitrators shall direct the payment of such value to the stockholders entitled thereto by the Company upon transfer to it of the certificates representing such stock, which determination may be enforced by a court of competent jurisdiction in the State of New York.

(f) The costs of the arbitration shall be assessed or apportioned as the panel of arbitrators considers equitable.

(g) All action required or permitted to be taken by the panel of arbitrators shall be taken by the majority decision of the members of the panel of arbitrators.

(h) Except as expressly limited in this Paragraph (C), holders of dissenting shares continue to have all the rights and privileges incident to those shares until the fair market value of their shares is agreed upon or determined. A holder of dissenting shares may not withdraw his dissent or demand for payment unless the Company, by its Board of Directors, consents thereto.

(i) Dissenting shares lose their status as dissenting hares, and the holders thereof cease to be entitled to require the Company to purchase their shares upon the happening of any of the following

1. The Company abandons the transaction which the dissenting stockholder did not approve.

2. The shares are surrendered for conversion into shares of another class in accordance with the Certificate of

Incorporation, or transferred prior to their submission for endorsement in accordance with subparagraph (a) above.

3. The holder of the dissenting shares and the Company do not agree upon the status of the shares as dissenting shares and upon the purchase price of the shares, and the holder of the dissenting shares does not file a written demand for arbitration or intervene in an arbitration or is not made a party to an arbitration in respect to dissenting shares within four months after the date on which the notice of the effective date of the transaction is mailed to the stockholders.

(j) If litigation is instituted to test the sufficiency or regularity of the votes of the stockholders in authorizing a transaction, the proceeding for compensation of any holder of dissenting shares shall be suspended until final determination of such litigation.

SEVENTH: The Company shall indemnify any and all persons whom it has the power to indemnify pursuant to the General Corporation Law of Delaware against any and all expenses,

judgments, fines, amounts paid in settlement, and any other liabilities to the fullest extent permitted by such law and may at the discretion of the Board of Directors, purchase and maintain insurance, at its expense, to protect itself and such persons against any expense, judgment, fine, amount paid in settlement or other liability, whether or not the Company would have the power to so indemnify such person under the General Corporation Law of Delaware.

EIGHTH: A director of the Company shall not be personally liable to the Company or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the Company or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the Delaware General Corporation Law or (iv) for any transaction from which the director derived an improper personal benefit. If the Delaware General Corporation Law is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Company shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended. Any repeal or modification of this Article by the stockholders of the Company shall not adversely affect any right or protection of a director of the Company existing at the time of such repeal or modification.

IN WITNESS WHEREOF, OXIS INTERNATIONAL,INC., a Delaware corporation has caused this Fourth Restated Certificate of Incorporation to be signed by its Chairman of the Board and attested by its Secretary, this 26th day of August, 1996.

OXIS INTERNATIONAL, INC., a
Delaware corporation

/s/ RAY R. ROGERS

Ray R. Rogers,
Chairman of the Board

ATTEST:

By: /s/ JON S. PITCHER

Jon S. Pitcher,
Secretary

EXHIBIT A

NOTICE OF CONVERSION

(To be executed by the Registered Holder
in order to Convert the Series D Preferred Stock)

The undersigned hereby irrevocably elects to convert shares of Series D Preferred Stock, represented by stock certificate No.(s). (the "Preferred Stock Certificates") into shares of common stock ("Common Stock") of OXIS International, Inc. (the "Corporation") according to the conditions of the Corporation's Certificate of Incorporation with respect to Series D Preferred Stock, as of the date written below. If securities are to be issued in the name of a person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates. No fee will be charged to the Holder for any conversion, except for transfer taxes, if any. A copy of each Preferred Stock Certificate is attached hereto (or evidence of loss, theft or destruction thereof).

The undersigned represents and warrants that all offers and sales by the undersigned of the securities issuable to the undersigned upon conversion of Series D Preferred Stock shall be made pursuant to registration of the securities under the Securities Act of 1933, as amended (the "Act"), or pursuant to an exemption from registration under the Act.

Date of Conversion:_____

Applicable Conversion Price:_____

Number of Shares of
Common Stock to be Issued:_____

Signature:_____

Name:_____

Address:_____

_____

_____

* The Corporation is not required to issue shares of Common Stock until the original Series D Preferred Stock Certificate(s) (or evidence of loss, theft or destruction thereof) to be converted are received by the Corporation or its Transfer Agent. The Corporation shall issue and deliver shares of Common Stock to an overnight courier not later than two (2) business days following receipt of the original Preferred Stock Certificate(s) to be converted, and shall make payments

pursuant to the Certificate of Incorporation for the number of business days such issuance and delivery is late.

CERTIFICATE OF DESIGNATIONS,
PREFERENCES AND RIGHTS
of
SERIES E CONVERTIBLE PREFERRED STOCK
of
OXIS INTERNATIONAL, INC.

Pursuant to Section 151 of the Delaware General Corporation Law

OXIS International, Inc., a corporation organized and existing under

the General Corporation Law of the State of Delaware (the "Corporation"), hereby certifies that the following resolutions were adopted by the Board of Directors of the Corporation pursuant to authority of the Board of Directors as required by Section 151 of the Delaware General Corporation Law:

RESOL VED, that pursuant to the authority granted to and vested in the Board of Directors of this Corporation {the "Board of Directors" or the "Board") in accordance with the provisions of its Restated Certificate of Incorporation, the Board of Directors hereby authorizes a series of the Corporation's previously authorized Preferred Stock, par value $.01 per share (the "Preferred Stock'.), an hereby states the designation and number of shares, and fixes the relative rights, preferences, privileges, powers and restrictions thereof as follows:

Series E Convertible Preferred Stock:

I. DESIGNATION AND AMOUNT

The designation of this series, which consists of 3,000 shares of Preferred Stock, is Series E Convertible Preferred Stock (the "Series E Preferred Stock") and the stated value shall be Five Hundred Dollars ($500) per share (the "Stated Value").

II. RANK WITH RESPECT TO LIQUIDATION EVENT

In the event of any distribution of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, the holders of Series E Preferred Stock shall participate on an equal basis with the holders of the Corporation's Common Stock, par value $.50 per share (the "Common Stock"), as if the series E Preferred Stock had converted into Common Stock.

III. NO DIVIDENDS

The Series E Preferred Stock will bear no dividends, and the holders of the Series E Preferred Stock sha11 not be entitled to receive dividends on the Series E Preferred Stock.

Filed Delaware
12/9/96

IV. [INTENTIONALLY OMITTED]

V. CASH REDEMPTION OF SERIES E PREFERRED STOCK

A. Except as provided in Article V.B hereof, the Series E Preferred Stock is not subject to redemption.

B. If any of the following events (each, a "Mandatory Redemption Event") shall occur:

(i) Conversion and the Shares. The Corporation

fails to issue shares of Common Stock (subject to the limitations set forth in Article VI.G.) to the holders of Series E Preferred Stock upon exercise by the holders of their conversion rights in accordance with the terms of this Certificate of Designation (for a period of at least one hundred twenty (120) days if such failure is solely as a result of the circumstances governed by Article VI.E. below and the Corporation is using all commercially reasonable efforts to authorize a sufficient number of shares of Common Stock as soon as practicable), fails to transfer any certificate for shares of Common Stock issued to the holders upon conversion of the Series E Preferred Stock and when required by this Certificate of Designation or the Registration Rights Agreement dated as of December 10, 1996, by and among the Corporation and the other signatories thereto (the "Registration Rights Agreement"), or fails to remove any restrictive legend on any certificate or any shares of Common Stock issued

to the holders of Series E Preferred Stock upon conversion of the Series E Preferred Stock as and when required by this Certificate of Designation, the Securities Subscription Agreement dated as of December 10, 1996 ("Purchase Agreement") or the Registration Rights Agreement and any such failure shall continue uncured for ten (10) business days after the Corporation sha11 have been notified thereof in writing by the holder;

(ii) Failure to Register. The Corporation fails
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to obtain effectiveness with the Securities and Exchange Commission (the "SEC") of the Registration Statement (as defined in the Registration Rights Agreement) prior to April 1, 1997 or lapses in effectiveness (or sales otherwise cannot be made thereunder) for more than thirty (30) consecutive days or sixty (60) days in any twelve (12) month period after such Registration Statement becomes effective;

(iii) Receiver or Trustee. The Corporation or any
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subsidiary of the corporation shall make an assignment for the benefit of creditors, or apply for or consent to the appointment of a receiver or trustee for it or for all or substantially all of its property or business; or such a receiver or trustee shall otherwise be appointed;

(iv) Bankruptcy. Bankruptcy, insolvency,
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reorganization or liquidation proceedings or other proceedings for relief under any bankruptcy law or any law for the relief of debtors shall be instituted by or against the Corporation or any subsidiary of the Corporation.

Then. upon the occurrence and during the continuation of any Mandatory Redemption Event specified in subparagraph (i) or (ii), at the option of the holders of at least 50% of the then outstanding shares of Series E Preferred Stock by written notice (the "Mandatory Redemption Notice") to the Corporation of such Mandatory Redemption Event, the Corporation shall, and upon the occurrence of any Mandatory Redemption Event specified in subparagraphs (iii) or (iv) the Corporation shall, without the necessity of any such notice, purchase the holder's shares of Series E Preferred Stock for an amount per share equal to (y) 125% multiplied by the Redemption Price in effect at the time of the redemption hereunder (the "Mandatory Redemption Amount") with respect to the events specified in subparagraphs (ii), (iii) and (iv) above and (z) with respect to the event specified in subparagraph (i) above, 1he greater of (yy) the Mandatory Redemption Amount or (zz) the Redemption Price multiplied by the ratio of the highest closing bid price of the Common Stock for the ten (10) business days following the Conversion Date (numerator) and the "Conversion Price" (denominator) as defined in Article VI.B. The "Redemption Price" with respect to each share of Series E Preferred Stock shall mean the amount equal to the Stated Va1ue thereof.

Subject to the limitations contained in Article VI.G, if the Corporation fails to pay the Mandatory Redemption Amount for each share within fifteen (15) business days of written notice that such amount is due and payable, then each holder of Series E Preferred Stock shall have the right at any time (so long as the Mandatory Redemption Event continues in effect) to require the Corporation, upon written notice, to immediately issue (in accordance with the terms of Article VI below), in lieu of the Mandatory Redemption Amount, with respect to each outstanding share of Series E Preferred Stock held by such holder, the number of shares of Common Stock of the Corporation equal to the Mandatory Redemption Amount divided by the Conversion Price then in effect.

VI. CONVERSION AT THE OPTION OF THE HOLDER

A. Each holder of shares of Series E Preferred Stock may, at its option at any time and from time to time after the earlier of (i) April 9, 1997 or (ii) thirty (30) days following the closing of a public offering of Common Stock by the Corporation, upon surrender of the certificates therefore, convert any or all of its shares of Series E Preferred Stock into Common Stock as follows (an "Optional Conversion"). Each share of Series E Preferred Stock shall be convertible into such number of fully paid and nonassessable shares of Common

Stock as is determined by dividing (x) the Stated Value thereof by (y) the then effective Conversion Price (as defined below); provided, however, that in no event shall holders of shares of Series E Preferred Stock be entitled to convert any such shares in excess of Common Stock beneficially owned by the holder and its affiliates (other than shares of Common Stock which may be deemed beneficially owned through the ownership of the unconverted portion of the shares of Series E Preferred Stock) and (yy) the number of shares of Common Stock issuable upon conversion of the shares of Series E Preferred Stock with respect to which the determination of this proviso is being made would result in beneficial ownership by the holder and its affiliates of more than 4.9% or the outstanding shares of Common Stock. For purposes of the second proviso to the immediately preceding sentence, beneficial ownership shall be determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended, and Regulation 13 D-G thereunder, except as otherwise provided in clause (xx) of such proviso.

B. The "Conversion Price" shall be the lesser (i) the Applicable Percentage (as hereinafter defined) of the average of the closing bid prices for the Common Stock on the NASDAQ National Market ("NASDAQ"), or on the principal securities exchange or other securities market on which the Common Stock is then being traded, for the five (5) consecutive Trading Days ending one Trading Day prior to the date (the "Conversion Date") the Conversion Notice is sent by a holder to the Corporation via facsimile (the "Variable Conversion Price"), and (ii) $2.00 (the "Fixed Conversion Price") (subject to equitable adjustments from time to time pursuant to the antidilution provisions of Article VI.C. below). "Applicable Percentage" means 75%. "Trading Day" shall mean any day on which the Common Stock is traded for any period on NASDAQ, or on the principal securities exchange or other securities market on which the Common Stock is then being traded.

C. The Conversion Price shall be subject to adjustment from time to time as follows:

(a) Adjustment to Fixed Conversion Price Due to Stock Split, Stock Dividend Etc. If a any time when the Series E Preferred Stock is issued and outstanding, the number of outstanding shares of Common Stock is increased by a stock split, stock dividend, or other similar event, the Fixed Conversion Price shall be proportionately reduced, or if the number of outstanding shares of Common Stock is decreased by a reverse stock split, combination or reclassification of shares, or other similar event, the Fixed Conversion Price shall be proportionately increased. In such event the Corporation shall notify the Transfer Agent of such change on or before the effective date thereof

(b) Adjustment to Variable Conversion Price. If at any time when Series E Preferred Stock is issued and outstanding, the number of outstanding shares of Common Stock is increased or decreased by stock split, stock dividend, combination, reclassification or other similar event, which event shall have taken place during the reference period for determination of the Conversion Price for any Optional Conversion or Mandatory Conversion of the Series E Preferred Stock, then the Variable Conversion Price shall be calculated giving appropriate effect to the stock split, stock dividend, combination, reclassification or other similar event for all five (5) Trading Days immediately preceding the Conversion Date.

(c) No Fractional Shares. If any adjustment under this Article VI.C. would create a fractional share of Common Stock or a right to acquire a fractional share of Common Stock, such fractional share shall be disregarded and the number of shares of Common Stock issuable upon conversion shall be the next higher number of shares.

D. In order to convert Series E Preferred Stock into full shares of Common Stock, a holder shall: (i) fax a copy of the fully executed notice of conversion in the form attached hereto ("Notice of Conversion") to the Corporation at the office of the Corporation for the Series E Preferred Stock that the holder elects to convert the same, which notice shall specify the

number of shares of Series E Preferred Stock to be converted, the applicable Conversion Price and a calculation of the number of shares of Common Stock issuable upon such conversion (together with a copy of the first page of each certificate to be converted) prior to Midnight, New York City time (the "Conversion Notice Deadline") on the date of conversion specified on the Notice of Conversion; and (ii) surrender the original certificates representing the Series E Preferred Stock being converted (the "Preferred Stock Certificates"), duly endorsed, along with a copy of the Notice of Conversion as soon as practicable thereafter to the office of the Corporation for the Series E Preferred Stock; provided. however, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless either the Preferred Stock Certificates are delivered to the Corporation as provided above, or the holder notifies the corporation that such certificates have been lost, stolen or destroyed (subject to the requirements of subparagraph (a) below). In the case of a dispute as to the calculation of the Conversion Price, the Corporation shall promptly issue such number of shares of Common Stock that are not disputed in accordance with subparagraph (b) below. The Corporation shall submit the disputed calculations to its outside accountant via facsimile within three (3) business days of receipt of the Notice of Conversion. The accountant shall audit the calculations and notify the Corporation and the holder of the results no later than 48 hours from the time it receives the disputed calculations. The accountant's calculation shall be deemed conclusive absent manifest error.

(a) Lost or Stolen Certificates. Upon receipt by the

Corporation of evidence of the loss, theft, destruction or mutilation of any Preferred Stock Certificates representing shares of Series E Preferred Stock, and (in the case of loss, theft or destruction) of indemnity or security reasonably satisfactory to the Corporation, and upon surrender and cancellation of the Preferred Stock Certificate(s), if mutilated, the Corporation shall execute and deliver new Preferred Stock Certificate(s) of like tenor and date. However, the Corporation shall not be obligated to reissue such lost or stolen Preferred Stock Certificate(s) if the holder contemporaneously requests the Corporation to convert such Series E Preferred Stock.

(b) Delivery of Common Stock Upon Conversion. Upon the
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surrender of certificates as described above from a holder of Series E Preferred Stock accompanied by a Notice of Conversion, the Corporation shall issue and, within three (3) business days (the "Delivery Period") after such surrender (or, in the case of lost, stolen or destroyed certificates, after provisions of agreement and indemnification pursuant to subparagraph (a) above), deliver to or upon the order of the holder (i) that number of shares of Common Stock for the portion of the shares of Series E Preferred Stock converted as shall be determined in accordance herewith and (ii) a certificate representing the balance of the shares of Series E Preferred Stock not converted, if any. In addition to any other remedies available to the holder, including actual damages and/or equitable relief, the Corporation shall pay to a holder $250 in cash for the first day beyond such Delivery Period that the Corporation fails to deliver Common Stock issuable upon surrender of shares of Series E Preferred Stock with a Notice of Conversion and $500 per day in cash for each day thereafter until such time as the earlier of the date that the Corporation has delivered all such Common Stock and the tenth day beyond such Delivery Period. Such cash amount shall be paid to such holder by the fifth day of the month following the month in which it has accrued. In the event the Corporation fails to deliver such Common Stock prior to the expiration of the ten (10) business day period after the Delivery Period for any reason (whether due to a requirement of law or a stock exchange or otherwise), such holder shall be entitled to (in addition to any other remedies available to the holder) Conversion Default Payments in accordance with Article V1.E. hereof beginning on the expiration of such ten (10) business day period.

(c) No Fractional Shares. If any conversion of Series E

Preferred Stock

would result in a fractional share of Common Stock or the right to acquire a fractional share of Common Stock, such fractional share shall be disregarded and the number of shares of Common Stock issuable upon conversion of the Series E

Preferred Stock shall be the next higher number of shares.

(d) Conversion Date. The "Conversion Date" sha11 be the
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date specified in the Notice of Conversion, provided (i) that the advance copy of the Notice of Conversion is faxed to the Corporation before Midnight, New York City time, on the Conversion Date, and (ii) that the original Preferred Stock Certificate(s), duly endorsed, are surrendered along with a copy of the Notice of Conversion as soon as practicable thereafter to the office of the Corporation or the Transfer Agent for the Series E Preferred Stock. The person or persons entitled to receive the shares of Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such securities as of the Conversion Date and all rights with respect to the shares of Series E Preferred Stock surrendered shall forthwith terminate except the right to receive the shares of Common Stock or other securities or property issuable on such conversion.

E. A number of shares of the authorized but unissued Common Stock sufficient to provide for the conversion of the Series E Preferred Stock outstanding at the then current Conversion Price shall at all times be reserved by the Corporation, free from preemptive rights, for such conversion or exercise. If the Corporation shall issue any securities or make any change in its capital structure which would change the number of share of Common Stock into which each share of the Series E Preferred Stock shall be convertible at the then current Conversion Price, the Corporation shall at the same time also make proper provisions so that thereafter there shall be a sufficient number of shares of Common Stock authorized and reserved, free from preemptive rights, for conversion of the outstanding Series E Preferred Stock on the new basis. If, at any time a holder of shares of Series E Preferred Stock submits a Conversion Notice, the Corporation does not have sufficient authorized but unissued shares of Common Stock available to effect such conversion in accordance with the provisions of this Article VI (a "Conversion Default"), the Corporation shall issue to the holder all of the shares of Common Stock which are available to effect such conversion. The number of shares of Series E Preferred Stock included in the Notice of Conversion which exceeds the amount which is then convertible into available shares of Common Stock (the "Excess Amount") shall, notwithstanding anything to the contrary contained herein, not be convertible into Common Stock in accordance with the terms hereof until (and at the holder's option at any time after) the date additional shares of Common Stock are authorized by the Corporation to permit such conversion, at which time the Conversion Price in respect thereof shall be the lesser of (i) the Conversion Price on the Conversion Date Default (as defined below) and (ii) the Conversion Price on the Conversation Date elected by the holder in respect thereof. The Corporation shall pay to the bolder payments ("Conversion Default Payments") for a Conversion Default in the amount of (N/365), multiplied by the sum of the Stated Value with respect to each share of Series E Preferred Stock, multiplied by the Default Amount (as defined below) on the first day of the Conversion Default (the "Conversion Default Date"), multiplied by .25, where (i) N = the number of days from the Conversion Default Date to the earlier of (A) the date (the "Authorization Date") that the Corporation authorizes a sufficient number of shares of Common Stock to effect conversion of the full number of shares of Series E Preferred Stock and (B) the date such share of Series E Preferred Stock is redeemed in accordance with Article VI.D. and (ii) "Default Amount" means the Excess Amount. The Corporation shall send notice to the holder of the authorization of additional shares of Common Stock, the Authorization Date and the amount of holder's accrued Conversion Default Payments. The accrued Conversion Default Payments for each calendar month shall be paid in cash or, subject to the limitations contained in Article VI.G., shall be convertible into Common Stock at the Conversion Price, at the holder's option, as follows:

(a) In the event holder elects to take such payment in cash, cash payment shall be made to holder by the fifth day of the month following the month in which it has accrued; and

(b) In the event holder elects to take such payment in Common Stock, the holder may convert such payment amount into Common Stock at the Conversion Price (as in effect at the time of Conversion) at any time after the fifth day of the month following the month in which it has accrued in accordance with the terms of this Article VI.

Nothing herein shall limit the holder's right to pursue actual damages for the Corporation's failure to maintain a sufficient number of authorized shares of Common Stock, and each holder shall have the right to pursue all remedies available at law or in equity (including a decree of specific performance and/or injunctive relief).

F. Upon the occurrence of each adjustment or readjustment of the Conversion Price pursuant to this Article VI, the Corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Series E Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any holder of Series E Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustment or readjustment, (ii) the Conversion Price at the time in effect and (iii) the number of shares of Common Stock and the amount, if any, of other securities or property which at the time would be received upon conversion of a share of Series E Preferred Stock.

G. Notwithstanding anything contained herein to the contrary, in no event shall the aggregate number of shares of Common Stock issuable upon conversion or redemption of, or otherwise issuable with respect to, all of the Series E Preferred Stock issued by the Corporation pursuant to the Purchase Agreement or any purchase agreement pertaining to the sale of Series E Preferred Stock (including, without limitation, all shares of Common Stock issued with respect to such Series E Preferred Stock pursuant to Article V.C and Article VI.E hereof) plus all shares of Common Stock issued pursuant to the Purchase Agreement or issuable pursuant to Section 2(c) of the Registration Rights Agreement exceed 2,733,799 (subject to equitable adjustments from time to time pursuant to the antidilution provisions of Article VI.C above). In the event the Corporation is prohibited from issuing shares of Common Stock as a result of the operation of this Article VI.G., the provisions of Article V.C., subparagraph (b) of Article VI.D. and Article VI.E. shall apply to the extent applicable.

VII. MANDATORY CONVERSION

Each share of Series E Preferred Stock issued and outstanding on December 11, 2001, automatically shall be converted into shares of Common Stock on such date at the then effective Conversion Price in accordance with the provisions of Article VI hereof (the "Mandatory Conversion").

VIII. VOTING RIGHTS.

The holders of the Series E Preferred Stock have no voting power whatsoever, except as otherwise provided by the Delaware General Corporation Law ("DGCL"), and in this Article VIII, and in Article IX below.

Notwithstanding the above, the Corporation shall provide each holder of Series E Preferred Stock with prior notification of any meeting of the shareholders (and copies of proxy materials and other information sent to shareholders). In the event of any taking by the Corporation of a record of its shareholders for the purpose of determining shareholders who are entitled to receive payment of any dividend or other distribution, any right to subscribe for, purchase or otherwise acquire (including by way of merger, consolidation or recapitalization) any share of any class or any other securities or property, or to receive any other right or for the purpose of determining shareholders who are entitled to vote in connection with any proposed sale, lease or conveyance of all or substantially all of the assets of the Corporation, or any proposed liquidation, dissolution or winding up of the Corporation, the Corporation shall mail a notice to each holder, at least ten (10) days prior to the record date specified therein (or 30 days prior to the consummation of the transaction or event, whichever is earlier), of the date on which any such record is to be taken for the purpose of such dividend, distribution, right, or other event, and a brief statement regarding the amount and character of such dividend, distribution, right or other event to the extent known at such time.

To the extent that under the DGCL the vote of the holders of the Series E Preferred Stock, voting separately as a class or series as applicable, is required to authorize a given action of the Corporation, the affirmative vote or

consent of the holders of at least a majority of the shares of the Series E Preferred Stock represented at a duly held meeting at which a quorum is present or by written consent of a majority of the shares of Series E Preferred Stock (except as otherwise may be required under the DGCL) shall constitute the approval of such action by the class. To the extent that under the DGCL holders of the Series E Preferred are entitled to vote on a matter with holders of Common Stock, voting together as one class, each share of Series E Preferred Stock shall be entitled to a number of votes equal to the number of shares of Common Stock into which it is then convertible using the record date for the taking of such vote of shareholders as the date as of which the Conversion Price is calculated. Holders of the Series E Preferred Stock shall be entitled to notice of (and copies of proxy materials and other information sent to shareholders) all shareholder meetings or written consents with respect to which they would be entitled to vote, which notice would be provided pursuant to the Corporation's by-laws and the DOCL.

IX. PROTECTION PROVISION

So long as shares of Series E Preferred Stock are outstanding, the Corporation shall not, without first obtaining the approval (by vote or written consent, as provided by the DGCL) of the holders of at least a majority of the then outstanding shares of Series E Preferred Stock:

(a) alter or change the rights, preferences or privileges of the Series E Preferred Stock or any other class or series of capital stock of the Corporation so as to effect adversely the Series E Preferred Stock;

(b) create any new class or series of capital stock having a preference over the Series E Preferred Stock as to distribution of assets upon liquidation, dissolution or winding up of the Corporation ("Senior Securities");

(c) increase the authorized number of shares of Series E Preferred Stock;

(d) do any act or thing not authorized or contemplated by this Certificate of Designation which would result in taxation of the holders of shares of the Series E Preferred Stock under Section 305 of the Internal Revenue Code of 1986, as amended (or any comparable provision of the Internal Revenue Code as hereafter from time to time amended); or

(e) issue after the Closing Date any Senior Securities.

In the event holders of at least a majority of the then outstanding shares of Series E Preferred Stock agree to allow the Corporation to alter or change the rights, preferences or privileges of the shares of Series E Preferred Stock, pursuant to subsection (a) above, so as to affect the Series E Preferred Stock, then the Corporation will deliver notice of such approved change to the holders of the Series E Preferred Stock that did not agree to such alteration or change (the "Dissenting Holders") and Dissenting Holders shall have the right for a period of twenty (20) days to convert pursuant to the terms of this Certificate of Designation as they exist prior to such alteration or change or continue to hold their shares of Series E Preferred Stock.

X. NOTICES

Each holder of Series E Preferred Stock shall send a copy of all notices to be given to the Corporation under this Certificate of Designation to such one (1) counsel as the Corporation may designate in writing at least five (5) business days prior to such holder sending such notice. For purposes of this Article X, the initial counsel designated by the Corporation for receiving copies of notices under this Certificate of Designation shall be Jackson Tufts Cole & Blank, LLP, 60 South Market Street, San Jose, California 95113, Attention: Richard Scudellari, Telecopier (408) 998-4889.

IN WITNESS WHEREOF, this Certificate of Designations, Rights and

Preferences is executed on behalf of the Corporation this 9th date of December, 1996.

OXIS INTERNATIONAL, INC.

By: /s/ RAY R. ROGERS

Name: Ray R. Rogers
Title: Chairman

NOTICE OF CONVERSION

(To be Executed by the Registered Holder
in order to Convert the Series E Preferred Stock)

The undersigned hereby irrevocably elects to convert shares of Series E Preferred Stock, represented by stock certificate No(s), (the "Preferred Stock Certificates") into shares of common stock ("Common Stock") of OX1S International, Inc. (the "Corporation") according to the conditions of the Certificate of Designation of Series E Preferred Stock, as of the date written below. If securities are to be issued in the name of a person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates. No fee will be charged to the Holder for any conversion, except for transfer taxes, if any. A copy of each Preferred Stock Certificate is attached hereto (or evidence of loss, theft or destruction thereof).

The undersigned represents and warrants that all offers and sales by the undersigned of the securities issuable to the undersigned upon conversion of the Series E Preferred Stock shall be made pursuant to registration of the securities under the Securities Act of 1933, as amended (the "Act"), or pursuant to an exemption from registration under the Act.

Date of Conversion: _____

Applicable Conversion Price: _____

Number of Shares of
Common Stock to be Issued:_____

Signature:_____

Name:_____

Address:_____
_____
_____

*The Corporation is not required to issue shares of Common Stock until the original Series E Preferred Stock Certificate(s) (or evidence of toss, theft or destruction thereof) to be converted are received by the Corporation or its Transfer Agent. The Corporation shall issue and deliver shares of Common Stock to an overnight courier not later than three (3) business days following receipt of the original Preferred stock Certificate(s) to be converted, and shall make payments pursuant to the Certificate of Designation for the number of business days such issuance and delivery is late.

CERTIFICATE OF AMENDMENT
OF
SECOND (SIC) FOURTH RESTATED CERTIFICATE OF INCORPORATION

OF
OXIS INTERNATIONAL, INC.

OXIS INTERNATIONAL, INC., a Delaware corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That the Board of Directors of said corporation, at duly called meeting of the directors, adopted a resolution proposing and declaring advisable the following amendment to the Restated Certificate of Incorporation of said corporation:

RESOLVED, that the Fourth Restated Certificate of Incorporation of the Company be amended by amending the first paragraph of Article Fourth of the Fourth Restated Certificate of Incorporation of the Company to read in its entirety as follows:

"FOURTH:

I. COMMON STOCK

The Company is authorized to issue a total of Fifty Million (50,000,000) shares of Common Stock, each of which shares of Common Stock has a par value of Fifty Cents ($0.50). Dividends may be paid on the Common Stock as and when declared by the Board of Directors, out of any funds of the Company legally available for the payment of such dividends, and each share of Common Stock will be entitled to one vote on all matters on which such stock is entitled to vote. All duly authorized One Dollar ($1.00) par value shares outstanding shall be deemed shares having a par value of Fifty Cents ($0.50).

SECOND: That thereafter, pursuant to resolution of its Board of Directors, a meeting of the stockholders of said corporation was held in accordance with Section 222 of the General Corporation Law of the State of Delaware, at which meeting the necessary number of shares required by statute were voted in favor of the amendment.

THIRD: That the aforesaid amendment was duly adopted in accordance with the applicable provisions of Sections 242 of the General Corporation Law of the State of Delaware.

Filed Delaware
7/17/97

IN WITNESS WHEREOF, OXIS INTERNATIONAL, INC., a Delaware corporation, has caused this Certificate to be signed by its Chairman of the Board and attested by its Secretary, this 11th day of July, 1997.

OXIS INTERNATIONAL, INC.,
a Delaware corporation

By: /s/ RAY R. ROGERS

Chairman of the Board

ATTEST:

By: /s/ JON S. PITCHER
- ---
Jon S. Pitcher,
Secretary

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
OXIS INTERNATIONAL, INC.
(a Delaware Corporation)

OXIS International, Inc. (the "Corporation"), a corporation organized and existing under the Delaware General Corporation Law (the "DGCL"), DOES HEREBY CERTIFY:

FIRST: That the Board of Directors and Stockholders of the Corporation have duly adopted resolutions proposing and declaring advisable the following amendment to the Corporation's Certificate of Incorporation:

The first paragraph of Article FOURTH shall be amended to read in full as follows:

FOURTH:

I. COMMON STOCK

The Company is authorized to issue a total of Ninety-Five million (95,000,000) shares of Common Stock, each of which shares of Common Stock has a par value of one-tenth of one cent ($.001). Dividends may be paid on the Common Stock as and when declared by the Board of Directors, out of any funds of the Company legally available for the payment of such dividends, and each share of Common Stock will be entitled to one vote on all matters on which such stock is entitled to vote. All duly authorized Fifty Cent ($.50) par value shares outstanding shall be deemed shares having a par value of one-tenth of one cent ($.001).

SECOND: That said amendment has been duly adopted in accordance with the requirements of Section 242 of the DGCL. IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed on this 13th day of July, 1998 by Ray R. Rogers, its authorized officer, who acknowledges under penalty of perjury that said amendment is the act and deed of the Corporation and that the facts stated herein are true and correct.

IN WITNESS WHEREOF the Corporation has caused this Certificate to be signed on this ___ day of July, 1998, by Ray R. Rogers, its authorized officer, who acknowledges under penalty of perjury that said amendment is the act and deed of the Corporation and that the facts stated herein are true and correct.

OXIS INTERNATIONAL, INC.

By: /s/ RAY R. ROGERS

Name: Ray R. Rogers
Title: Chief Executive Officer

Filed Delaware 7/14/98

CERTIFICATE OF AMENDMENT
OF
RESTATED
CERTIFICATE OF INCORPORATION
OF
OXIS INTERNATIONAL, INC.
(a Delaware Corporation)

OXIS International, Inc. (the "Corporation"), a corporation organized and existing under the Delaware General Corporation Law (the "DGCL"), DOES HEREBY CERTIFY:

FIRST: That the Board of Directors and Stockholders of the Corporation have duly adopted resolutions proposing and declaring advisable the following amendment to the Corporation's Restated Certificate of Incorporation:

The first paragraph of Article FOURTH shall be amended by appending the following to the existing text:

> Simultaneously with the effective date of this amendment (the "Effective Date"), each share of Common Stock issued and outstanding immediately prior to the Effective Date (the "Old Common Stock") shall automatically and without any action on the part of the holder thereof be reclassified as and changed into one-fifth (1/5) share of New Common Stock (the "New Common Stock "), subject to the treatment of fractional share interests as described below. Such reclassification and change of Old Common Stock into New Common Stock shall not change the par value per share of the shares reclassified and changed. Each holder of a certificate or certificates which immediately prior to the Effective Date represented outstanding shares of Old Common Stock (the "Old Common Stock Certificates," whether one or more) shall be entitled to receive upon surrender of such Old Common Stock Certificates to the Corporation's Transfer Agent for cancellation, a certificate or certificates (the "New Common Stock Certificates," whether one or more) representing the number of whole shares of New Common Stock into which and for which the shares of the Old Common Stock formerly represented by such Old Common Stock Certificates so surrendered, are reclassified under the terms hereof. From and after the Effective Date, Old Common Stock Certificates shall represent only the right to receive New Common Stock Certificates (and, where applicable, cash in lieu of fractional shares, as provided below) pursuant to the provisions hereof. No certificates or scrip

> representing fractional share interests in New Common Stock will be issued, and no such fractional share interest will entitle the holder thereof to vote, or to any rights of a stockholder of the Corporation.

Filed Delaware 10/20/98

> A holder of Old Common Stock Certificates shall receive, in lieu of any fraction of a share of New Common Stock to which the holder would otherwise be entitled, a cash payment therefor in an amount equal to the product of (a) the fraction of such share and (b) the average of the closing reported bid and asked prices of one share of Old Common Stock, as reported on the NASDAQ National Market System, for the ten trading days immediately preceding the Effective Date for which transactions in Old Common Stock are reported thereon. If more than one Old Common Stock Certificate shall be surrendered at one time for the account of the same stockholder, the number of full shares of New Common Stock for which New Common Stock Certificates shall be issued shall be computed on the basis of the aggregate number of shares represented by the Old Common Stock Certificates so surrendered. In the event that the Transfer Agent determines that a holder of Old Common Stock Certificates has not tendered all the holder's certificates for exchange, the Transfer Agent shall carry forward any fractional share until all certificates of that holder have been presented for exchange such that payment for fractional shares to any one holder shall not exceed the value of one share. If any New Common Stock Certificate is to be issued in

a name other than that in which the Old Common Stock Certificates surrendered for exchange are issued, the Old Common Stock Certificates so surrendered shall be properly endorsed and otherwise in proper form for transfer, and the person or persons requesting such exchange shall affix any requisite stock transfer tax stamps to the Old Common Stock Certificates surrendered, or provide funds for their purchase, or establish to the satisfaction of the Transfer Agent that such taxes are not payable. From and after the Effective Date, the amount of capital represented by the shares of the New Common Stock into which and for which the shares of the Old Common Stock are reclassified under the terms hereof shall be the same as the amount of capital represented by the shares of Old Common Stock so reclassified, until thereafter reduced or increased in accordance with applicable law.

SECOND: That said amendment has been duly adopted in accordance with the requirements of Sections 141, 228 and 242 of the DGCL.

THIRD: That this Certificate of Amendment of the Restated Certificate of Incorporation shall be effective on October 21, 1998 at 12:01 a.m., Eastern Standard Time.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed on this 28th day of September, 1998 by Ray R. Rogers, its authorized officer, who acknowledges under penalty of perjury that said amendment is the act and deed of the Corporation and that the facts stated herein are true and correct.

OXIS INTERNATIONAL, INC.

By: /s/ RAY R. ROGERS

Name: Ray R. Rogers
Title: Chief Executive Officer

CERTIFICATE OF DESIGNATIONS,
RIGHTS AND PREFERENCES
of
SERIES F CONVERTIBLE PREFERRED STOCK
of
OXIS INTERNATIONAL, INC.

Pursuant to Section 151 of the Delaware General Corporation Law

Oxis International, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"), hereby certifies that the following resolutions were adopted by the Board of Directors of the Corporation pursuant to authority of the Board of Directors as required by Section 151 of the Delaware General Corporation Law:

RESOLVED, that, pursuant to authority granted to and vested in the Board of Directors of this Corporation in accordance with the provision of its Fourth Restated Certificate of Incorporation, as amended, the Board of Directors hereby authorizes a series of the Corporation's previously authorized Preferred Stock, par value $.01 per share (the "Preferred Stock") and hereby states the designation and number of shares, and fixes the relative rights, preferences, privileges, powers and restrictions thereof as follows:

Series F Convertible Preferred Stock:

I. DESIGNATION AND AMOUNT.

2,000,000 shares of the Corporation's authorized Preferred Stock are hereby designated as Series F Convertible Preferred Stock (the "Series F

Preferred Stock") with par value $.01 per share.

II. DIVIDENDS.

No dividends shall be declared and set aside for any shares of the Series F Preferred Stock except in the event that the Board of Directors of the Corporation shall declare a dividend payable upon the then outstanding shares of the Common Stock of the Corporation, in which event the holders of the Series F Preferred Stock, subject to the prior rights of Series B and Series C Preferred Stock, shall be entitled to receive dividends in preference to the holders of

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Common Stock at the rate of $.03 per share of Series F Preferred Stock then outstanding from legally available funds. The right to such dividends on shares of Series F Preferred Stock shall not be cumulative and no right shall accrue to the holders of Series F Preferred Stock by reason of the fact that dividends on said shares are not declared in any prior year, nor shall any undeclared or unpaid dividend bear or accrue interest.

III. LIQUIDATION, DISSOLUTION OR WINDING UP.

A. Preference. Subject to the prior rights of the holders of Series B and Series C Preferred Stock, in the event of any liquidation, dissolution, or winding up of the Corporation, whether voluntary or involuntary, the holders of each share of Series F Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any assets or surplus funds of the Corporation to the holders of Common Stock, the amount of $1.00 per share (which is the initial issue price and is subject to adjustment for stock splits, up or down, stock dividends or other corporate events resulting in the issuance of additional Series F Preferred Stock without consideration) plus any declared and unpaid dividends on such share (the "Series F Liquidation Preference"), for each share of Series F Preferred Stock then held by them. After all preferential amounts have been paid to the holders of Series F Preferred Stock and any other eligible preferred shares, all remaining assets and funds will be distributed to the holders of the other securities of the Corporation as required. If upon the occurrence of such an event, the assets and funds of the Corporation shall be insufficient to permit the payment in full to holders of the Series F Preferred Stock of the amount thus distributable, then the entire assets and funds of the Corporation legally available for such distribution shall be distributed ratably among the holders of the Series F Preferred Stock.

A liquidation, dissolution or winding-up of the Corporation shall be deemed to have occurred within the meaning of this Article III upon (A) the sale, lease or other disposition by the Corporation of all or substantially all of its assets, or (B) the acquisition of the Corporation by another entity by stock purchase, consolidation, merger or other reorganization in which the holders of the Corporation's outstanding voting stock immediately prior to such transaction own, immediately after such transaction, securities representing less than fifty percent (50%) of the voting power of the entity surviving such transaction. This means that the holders of Series F Preferred Stock, when presented with a transaction as described above in this paragraph, must choose between one or the other (but not both) of receiving the Series F Liquidation Preference or converting their shares to Common Stock in order to participate in such transaction.

B. Distributions Other than Cash. Whenever the distribution provided for in this Article III shall be paid in property other than cash, the value of such distribution shall be: (x) if such securities are listed on an exchange or market, the closing price thereon as of the day preceding the date of distribution, (y) if such securities are traded on the over-the-counter market, the average of the closing bid and asked prices on such date, and (z) if such securities are not publicly traded, the fair market value as determined in good faith by the Corporation's Board of Directors.

C. Notices. Written notice of such liquidation, dissolution or

winding-up, stating a payment date and the place where said sums will be payable shall be given by mail, postage prepaid, not less than 30 days prior to the payment date stated therein, to the holders of record of the Series F Preferred Stock, such notice to be addressed to each stockholder at his or its mailing address as shown by the records of the Corporation.

IV. Voting Power.

Each holder of Series F Preferred Stock shall be entitled to vote on all matters submitted to the Corporation's stockholders and shall be entitled to that number of votes equal to the number of votes that would be accorded to the largest number of whole shares of Common Stock into which such holder's shares of Series F Preferred Stock could be converted, pursuant to the provisions of Article V of this Certificate, at the record date for the determination of stockholders entitled to vote on such matter or, if no such record date is established, at the date such vote is taken or any written consent of stockholders is solicited and, except as otherwise provided herein, shall have voting rights and powers equal to the voting rights and powers of Common Stock. Except as set forth in Article IV.B below and to those matters submitted to the stockholders wherein Delaware law requires that the Series F Preferred stockholders vote as a separate class or voting group, the holders of shares of Series F Preferred Stock shall be entitled to notice of any stockholders meeting in accordance with the Bylaws of the Corporation and shall

vote with the holders of Common Stock as a single class on all matters. In all cases where the holders of shares of Series F Preferred Stock have the right to vote separately as a class or group, such holders shall be entitled to one vote for each such share held by them respectively.

V. Conversion Rights.

The holders of the Series F Preferred Stock shall have the following conversion rights:

A. General. Subject to and in compliance with the provisions of this Article V, any shares of Series F Preferred Stock may, at the option of the holder, be converted at any time or from time to time into such number of fully paid and nonassessable shares (calculated as to each conversion to the largest whole share) of Common Stock as is determined by dividing $1.00 by the Applicable Conversion Rate as hereinafter provided. The price as to which shares of Common Stock shall be deliverable upon conversion of the shares of Series F Preferred Stock (the "Applicable Conversion Rate") shall initially be ten cents ($.10) per share of Common Stock. Such initial Applicable Conversion Rate shall be adjusted as hereinafter provided.

The rights of conversion contained in this Article V.A may be exercised by the holder of shares of Series F Preferred Stock by giving written notice that such holder elects to convert a stated number of shares of Series F Preferred Stock into Common Stock, and by surrender of a certificate or certificates for the shares so to be converted to the Corporation at its principal office (or such other office or agency of the Corporation as the Corporation may designate by notice in writing to the holder or holders of the Series F Preferred Stock) at any time during its usual business hours, together with a statement of the name or names (with address) in which the certificate or certificates for shares of Common Stock shall be issued. In the event some but not all of the shares of Series F Preferred Stock represented by a certificate or certificates surrendered by a holder are converted, the Corporation shall execute and deliver to the holder a new certificate representing the number of shares of Series F Preferred Stock that were not converted. Upon any liquidation, dissolution or winding-up of the Corporation, the right of conversion shall terminate at the close of business on the last full business day next preceding the date fixed for payment of the Series F Liquidation Preference.

All rights, preferences, and privileges granted to the Series F Preferred Stock, including, without limitation, the right to receive any declared but unpaid dividends, shall terminate with respect to any shares of Series F Preferred Stock upon the conversion thereof into Common Stock.

B. Automatic Conversion. Each share of Series F Preferred Stock shall automatically be converted into such number of fully paid and nonassessable shares of Common Stock (calculated in the manner set forth in Article V.A) (i) upon the closing of an underwritten public offering of shares of the Common Stock of the Corporation, the public offering price of which was not less than three dollars ($3.00) per share (adjusted to reflect subsequent stock dividends, stock splits or recapitalizations) and the aggregate offering proceeds (before transaction expenses and underwriting discounts) of which were not less than ten million dollars ($10,000,000) or (ii) upon the vote or written consent of the holders of not less than a majority of the then-outstanding shares of Series F Preferred Stock. Notice of an election under (ii) above shall be given by the Corporation to the holders of Series F Preferred Stock within 30 days of such vote or consent. The effective date of such conversion hereunder shall be the date specified in the vote causing conversion, or if no such date is specified, the date such vote is taken.

C. Adjustment of Applicable Conversion Rate. The Applicable Conversion Rate shall be subject to adjustment from time to time as follows:

(a) Adjustment for Stock Splits and Combinations. If the Corporation, at any time or from time to time after the Series F Preferred Stock is issued, shall effect a subdivision or split of the outstanding Common Stock, the Applicable Conversion Rate then in effect immediately before that subdivision or split shall be proportionately decreased. Conversely, if this Corporation at any time or from time to time after the Series F Preferred Stock is issued shall combine the outstanding shares of Common Stock, the Applicable Conversion Rate then in effect immediately before the combination shall be proportionately increased. Any adjustment under this Article V.C(a) shall become effective at the close of business on the date the subdivision, split or combination becomes effective.

(b) Adjustment for Certain Dividends and Distributions. If the Corporation at any time or from time to time after the Series F Preferred Stock is issued shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Applicable Conversion Rate then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Applicable Conversion Rate for such Series F Preferred Stock then in effect by a fraction:

i. the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date; and

ii. the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Applicable Conversion Rate for such Series F Preferred Stock shall be recalculated accordingly as of the close of business on such record date, and thereafter the Applicable Conversion Rate for Series F Preferred Stock shall be adjusted pursuant to this Article V.C(b) as of the time of actual payment of such dividends or distributions.

(c) Adjustment for Reclassification, Exchange or Substitution. If the Common Stock issuable upon the conversion of the Series F Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, or otherwise (other than a subdivision or combination of

shares or stock dividend provided for above), then and in each such event the holder of each share of Series F Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification or other change, by holders of the number of shares of Common Stock into which such shares of Series F Preferred Stock might have been converted immediately prior to such reorganization, reclassification or change, all subject to further adjustment as provided herein.

(d) Adjustment Notice. Whenever the Applicable Conversion Rate shall be adjusted as provided in this Article V.C, this Corporation promptly shall file, at the office of the Secretary of this Corporation and any transfer agent for the Series F Preferred Stock, a statement, signed by its President or any Vice President and by its Treasurer, an Assistant Treasurer, its Secretary or an Assistant Secretary, showing in detail the facts requiring such adjustment and the Applicable Conversion Rate that shall be in effect after such adjustment. This Corporation shall also cause a copy of such statement to be sent by mail, first-class postage prepaid, to each holder of shares of Series F Preferred Stock at each such holder's address appearing on this Corporation's records. Where appropriate, such copy may be given in advance and may be included as part of a notice required to be mailed under the provisions of Article V.C(e) following.

(e) Notice of Action. In the event this Corporation shall propose to take any action of the types described in Article V.C(a), (b) or (c), the Corporation shall give notice to each holder of shares of Series F Preferred Stock, in the manner set forth in Article V.C(d), which notice shall specify the record date, if any, with respect to any such action and the date on which such action is to take place. Such notice shall also set forth such facts with respect thereto as shall be reasonably necessary to indicate the effect of such action (to the extent such effect may be known at the date of such notice) on the Applicable Conversion Rate and the number, kind or class of shares or other securities or property which shall be deliverable or purchasable upon the occurrence of such action or deliverable upon conversion of shares of Series F Preferred Stock. In the case of any action that would require the fixing of a record date, such notice shall be given at least ten days prior to the date so fixed, and in case of all other action, such notice shall be given at least 20 days prior to the taking of such proposed action. Failure to give such notice, or any defect therein, shall not affect the legality or validity of any such action.

D. No Fractional Shares or Adjustments. No fractional shares of Common Stock shall be issued upon conversion of any Series F Preferred Stock, but in lieu of fractional shares this Corporation shall pay an amount in cash equal to the fair value of such fractional interest. If the Common Stock is listed on an exchange or market, the fair value shall be the closing price thereon as of the day preceding the date of conversion, or if traded on the over-the-counter market, the average of the closing bid and asked prices on such date; if such stock is not publicly traded, the fair value shall be as determined in good faith by the Board of Directors. No adjustment in the Applicable Conversion Rate shall be made if such adjustment would result in a change of less than one cent ($0.01) thereto. Any adjustment of less than one cent ($0.01) that is not made shall be carried forward and made at the time of and together with any subsequent adjustment that, on a cumulative basis, amounts to an adjustment of one cent ($0.01) or more in the Applicable Conversion Rate.

E. Reserved Shares. As long as any of the Series F Preferred Stock remains outstanding, this Corporation shall take all steps necessary to reserve and keep available a number of its authorized but unissued shares of Common Stock sufficient for issuance upon conversion of all such outstanding shares of Series F Preferred Stock.

VI. Redemption Rights.

A. Mandatory Redemption. Subject to any limitations on redemption

set forth in the Corporation's Second Restated Certificate of Incorporation, as amended, if requested in writing by holders of not less than a majority of the then outstanding shares of Series F Preferred Stock at any time after February 15, 2007, the Corporation shall redeem, with funds legally available therefor, all outstanding shares of Series F Preferred Stock at a redemption price equal to the Series F Liquidation Preference plus $.03 per share of Series F Preferred Stock then outstanding (the "Redemption Value") payable by the Corporation in three (3) equal annual installments, without interest.

B. Surrender of Certificates. Ten days prior to payment by the Corporation of the first annual installment of the Redemption Value (the "Redemption Date") , the Corporation shall mail written notice (the "Redemption Notice"), postage prepaid, to each holder of record of Series F Preferred Stock, at such holder's address as shown on the records of the Corporation; provided, however, that the Corporation's failure to give such Redemption Notice shall in no way affect its obligation to redeem the Series F Preferred Stock as provided in Article VI.A hereof. The Redemption Notice shall contain the following information:

(a) The number of shares of Series F Preferred Stock held by the holder which shall be redeemed by the Corporation on such Redemption Date pursuant to the provisions of Article VI.A;

(b) the Redemption Date; and

(c) the address at which the holder may surrender to the Corporation its certificate or certificates representing shares of Series F Preferred Stock to be redeemed.

Each holder of shares of Series F Preferred Stock to be redeemed shall surrender the certificate or certificates representing such shares to the Corporation at the place specified in the Redemption Notice on or before the Redemption Date designated in the Redemption Notice (provided that failure to surrender a stock certificate shall not prevent the redemption of the underlying stock), and thereupon the applicable Redemption Value for such shares as set forth in this Article VI shall be paid to the order of the person whose name appears on such certificate or certificates. Each surrendered certificate shall be canceled and retired.

C. Dividends After Redemption Date. No share of Series F Preferred Stock is entitled to any dividends after the date on which the first installment of the Redemption Value is paid to the holder thereof. On such date all rights of the holder of such share shall cease, and such share shall not be deemed to be outstanding.

D. Redeemed or Otherwise Acquired Shares. Any shares of Series F Preferred Stock which are redeemed or otherwise acquired by the Corporation shall be canceled and shall not be reissued, sold or transferred.

E. Funds Legally Available. If the funds of the Corporation legally available for redemption on the Redemption Date or on the date of the following two installments of the Redemption Value are insufficient to redeem all of the shares of Series F Preferred Stock submitted for redemption, those funds which are legally available will be used to redeem the maximum possible number of whole shares ratably among the holders of such shares.

G. Cancellation of Series F Preferred Stock. Notice of Redemption having been given as aforesaid in respect of shares of Series F Preferred Stock to be redeemed pursuant to Article VI.A, notwithstanding that any certificates for such shares shall not have been surrendered for cancellation, from and after the date of the payment of the first installment designated in the notice of redemption (i) none of the shares of Series F Preferred Stock represented thereby shall be deemed outstanding, (ii) the rights to receive dividends, if any, thereon shall cease to accrue, and (iii) all rights of the holders of Series F Preferred Stock to be redeemed shall cease and

terminate, excepting only the right to receive the remaining balance of the Redemption Value in the two remaining installments.

VII. Protective Provisions.

So long as at least twenty percent (20%) of the original issue amount of shares of Series F Preferred Stock are outstanding, the Corporation shall not, without the approval of the holders of at least a majority of the then outstanding Series F Preferred Stock voting separately as a class or group:

(a) amend or change any of the rights, preferences, privileges or powers of, or the restrictions provided for the benefit of, the Series F Preferred Stock;

(b) take any action that authorizes, creates or issues shares of any class of stock having preferences superior to or on a parity with the Series F Preferred Stock;

(c) declare or pay any dividends on or make any distribution on account of the Common Stock (other than a dividend payable solely in shares of Common Stock);

(d) take any action that increases or decreases the authorized number of shares of the Series F Preferred Stock (other than incident to a stock split up or down);

(e) repurchase any shares of any other series of preferred stock or Common Stock (except for the repurchase of shares of Common Stock from directors, employees and consultants, or other repurchases aggregating no more than $25,000 in any twelve-month period, or repurchases as may be required under the terms of the Series B Preferred Stock or Series C Preferred Stock);

(f) purchase or redeem any shares of Series F Preferred Stock other than pursuant to the redemption provisions contained in Article VI of this Certificate;

(g) effect the sale of all or substantially all of the Corporation's assets or take any action which results in the holders of the Corporation's capital stock prior to the transaction owning less than 50% of the voting power of the Corporation's capital stock after the transaction; or

(h) permit a subsidiary of the Corporation to sell securities to a third party.

VIII. Notices.

Each holder of Series F Preferred Stock shall send a copy of all notices to be given to the Corporation under this Certificate of Designation to such counsel as the Corporation may designate in writing at least five (5) business days prior to such holder sending such notice. For purposes of this Article VIII, the initial counsel designated by the Corporation for receiving copies of notices under this Certificate of Designation shall be Tonkon Torp LLP, 1600 Pioneer Tower, 888 SW Fifth Avenue, Portland, Oregon 97204, Attention: George C. Spencer, facsimile number (503) 972-3714.

IN WITNESS WHEREOF, this Certificate of Designations, Rights and Preferences is executed on behalf of the Corporation this 26th day of February, 2002

OXIS INTERNATIONAL, INC.

By: /s/ RAY R. ROGERS

Ray R. Rogers
President and Chief Executive Officer

Exhibit 3(b)

COMPOSITE OF

BYLAWS

OXIS INTERNATIONAL, INC .

Effective Date September 7, 1994

and as amended August 30, 2000

ARTICLE I

MEETINGS OF STOCKHOLDERS

Section 1. The Meeting. The annual meeting of the stockholders of OXIS INTERNATIONAL, INC. a Delaware corporation (the "Corporation") for the election of directors and for the transaction of such other business as may come before the meeting shall be on the third Tuesday of May of each year, if not a legal holiday, and if a legal holiday, then on the next succeeding day not a legal holiday, at such time and at such location as shall be designated by the Board of Directors or at such other date, time, and location as the Board of Directors shall designate.

Section 2. Special Meetings. Special meetings of the stockholders, unless otherwise prescribed by statute, maybe called at any time by the Board of Directors or the President and shall be called by the President or Secretary at the request in writing of stockholders of record owning at least fifty percentum of the shares of stock of the Corporation outstanding and entitled to vote.

Section 3. Notice of Meetings. Notice of the place, date and time of the holding of each annual and special meeting of the stockholders and, in the case of a special meeting, the purpose or purposes thereof, shall be given personally or by mail in a postage prepaid envelope to each stockholder entitled to vote at such meeting, not less than ten nor more than sixty days before the date of such meeting, and, if mailed, shall be directed to such stockholder at his or her address as it appears on the records of the Corporation, unless he or she shall have filed with the Secretary of the Corporation a written request that notices to him or her be mailed to some other address, in which case it shall be directed to him or her at such other address. Notice of any meeting of stockholders shall not be required to be given to any stockholder who shall attend such meeting in person or by proxy and shall not, at the beginning of such meeting, object to the transaction of any business because the meeting is not lawfully called or convened, or who shall, either before or after the meeting, submit a signed waiver of notice, in person or by proxy. Unless the Board of Directors fix, after the adjournment, a new record date for an adjourned meeting, notice of such adjourned meeting need not be given if the time and place to which the meeting shall be adjourned were announced at the meeting at which the adjournment is taken. At the adjourned meeting, the Corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 4. Place of Meetings. Meetings of the stockholders may be held at such place, within or without the State of Delaware, as the Board of Directors or the officer calling the same shall specify in the notice of such meeting, or in a duly executed waiver of notice thereof.

Section 5. Quorum. At all meetings of the stockholders the holders of a majority of the votes of the shares of stock of the Corporation issued and outstanding and entitled to vote shall be present in person or by

proxy to constitute a quorum for the transaction of any business, except as otherwise provided by statute or in the

Certificate of Incorporation. In the absence of a quorum, the holders of a majority of the shares of stock present in person or by proxy and entitled to vote, or if no stockholder entitled to vote is present, then any officer of the Corporation may adjourn the meeting. At any such adjourned meeting at which a quorum may be present, any business may be transacted which might have been transacted at the meeting as originally called.

Section 6. Organization. At each meeting of the stockholders, the Chairman of the Board, or in his or her absence or inability to act, the President, or in his or her absence or inability to act, the Vice President, or in his or her absence or inability to act, any person chosen by a majority of those stockholders present, in person or by proxy and entitled to vote, shall act as chairman of the meeting. The Secretary, or in his or her absence or inability to act, any person appointed by the chairman of the meeting, shall act as secretary of the meeting and keep the minutes thereof.

Section 7. Order of Business. The order of business at all meetings of the stockholders shall be as determined by the chairman of the meeting.

Section 8. Voting. Except as otherwise provided by statute, by the Certificate of Incorporation, or by any certificate duly filed in the State of Delaware pursuant to Section 151 of the Delaware General Corporation Law, each holder of record of shares of stock of the Corporation having voting power shall be entitled at each meeting of the stockholders to one vote for every share of such stock standing in his or her name on the record of stockholders of the Corporation on the date fixed by the Board of Directors as the record date for the determination of the stockholders who shall be entitled to notice of and to vote at such meeting; or if such record date shall not have been so filed, then at the close of business on the day next preceding the date on which notice thereof shall be given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; or each stockholder entitled to vote at any meeting of stockholders may authorize another person or persons to act for him or her by a proxy signed by such stockholder or his or her attorney-in-fact. Any such proxy shall be delivered to the secretary of such meeting at or prior to the time designated in the order of business for so delivering such proxies. No proxy shall be valid after the expiration of three years from the date thereof, unless otherwise provided in the proxy. Every proxy shall be revocable at the pleasure of the stockholder executing it, except in those cases where an irrevocable proxy is permitted by law. Except as otherwise provided by statute, these Bylaws, or the Certificate of Incorporation, any corporate action to be taken by vote of the stockholders shall be authorized by a majority of the total votes, cast at a meeting of stockholders by the holders of shares present in person or represented by proxy and entitled to vote on such action. Unless required by statute, or determined by the chairman of the meeting to be advisable, the vote on any question need not be by written ballot. On a vote by written ballot, each ballot shall be signed by the stockholder voting, or by his or her proxy, if there be such proxy, and shall state the number of shares voted.

Section 9. List of Stockholders. The officer who has charge of the stock ledger of the Corporation shall prepare and make, at least ten days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten days prior to the meeting either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

Section 10. Inspectors. The Board of Directors may, in advance of any meeting of stockholders, appoint one or more inspectors to act at such meeting or any adjournment thereof. If the inspectors shall not be so appointed or if any of them fail to appear or act, the chairman of the meeting may, and on the request of any stockholder entitled to vote thereat shall, appoint inspectors. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector at such meeting with strict impartiality and according to the best of his or her ability. The inspectors shall determine, in number of shares represented at the meeting, the existence of a quorum, the validity and effect of proxies, and shall receive votes, ballots or consents, hear and determine all challenges and questions arising in connection with the right to vote, count and tabulate all votes, ballots or consents, determine the result, and do such acts as are proper to conduct the

election or vote with fairness to all stockholders. On request of the chairman of the meeting or any stockholder entitled to vote thereat, the inspectors shall make a report in. writing of any challenge, request or matter determined by them and shall execute a certificate of any fact found by them. No director or candidate for the office of director shall act as inspector of an election of directors. Inspectors need not be stockholders.

Section 11. Consent of Stockholders in Lieu of Meeting. Whenever the vote of stockholders at a meeting thereof is required or permitted to be taken for or in connection with any corporate action, the meeting and vote of stockholders can be dispensed with: (1) if all of the stockholders who would have been entitled to vote upon the action if such meeting were held shall consent in writing to such corporate action being taken; or (2) unless the Certificate of Incorporation provides otherwise, with the written consent of the holders of not less than the minimum percentage of the total vote required by statute for the proposed corporate action, and provided that prompt notice must be given to all stockholders not signing such written consent of the taking of corporate action without a meeting and by less than unanimous written consent.

ARTICLE II

BOARD OF DIRECTORS

Section 1. General Powers. The business and affairs of the Corporation shall be managed by the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or the Certificate of Incorporation directed or required to be exercised or done by the stockholders.

Section 2. Number, Qualifications, Election, and Term of Office. The number of directors of the Corporation shall be six (6) but, by vote of a majority of the entire Board of Directors or amendment of these Bylaws, the number thereof may be increased or decreased as may be so provided, subject to the provisions of Section 11 of this Article II. All of the directors shall be of full age. Directors need not be stockholders. Except as otherwise provided by statute or these Bylaws, the directors shall be elected at the annual meeting of the stockholders for the election of directors at which a quorum is present, and the persons receiving a plurality of the votes cast at such election shall be elected. Each director shall hold office until the next annual meeting of the stockholders and until his or her successor shall have been duly elected and qualified or until his or her death, or until he shall have resigned, or have been removed, as hereinafter provided in these Bylaws, or as otherwise provided by statute or the Certificate of Incorporation.

Section 3. Place of Meeting. Meetings of the Board of Directors may be held at such place, within or without the State of Delaware, as the Board of Directors may from time to time determine or shall be specified in the notice of waiver of notice of such meeting.

Section 4. Annual Meeting. The Board of Directors shall meet for the purpose of the election of officers and the transaction of other business, as soon as practicable after each annual meeting of the stockholders, on the same day and at the same place where such annual meeting shall be held. Notice of such meeting need not be given. Such meeting may be held at any other time or place (within or without the State of Delaware) which shall be specified in a notice thereof given as hereinafter provided in Section 7 of this Article II.

Section 5. Regular Meetings. Regular meetings of the Board of Directors shall be held quarterly at such place as the Board of Directors may from time to time determine. If any day fixed for a regular meeting shall be a legal holiday at the place where the meeting is to be held, then the meeting which would otherwise be held on that day shall be held at the same hour on the next succeeding business day. Notice of regular meetings of the Board of Directors need not be given except as otherwise required by statute or these Bylaws.

Section 6. Special Meetings. Special meetings of the Board of Directors may be called by one or more directors of the Corporation or by the President.

Section 7. Notice of Meetings. Notice of each special meeting of the Board of Directors (and of each regular meeting for which notice shall be required) shall be given by the Secretary as hereinafter provide in this

Section 7, in which notice shall be stated the time and place of the meeting. Notice of each such meeting shall be delivered to each director either personally or by telephone, telegraph cable or wireless, at least twenty-four hours before the time at which such meeting is to be held or by first-class mail, postage prepaid, addressed to him or her at his or her residence, or usual place of business, at least three days before the day on which such meeting is to be held. Notice of any such meeting need not be given to any director who shall, either before or after the meeting, submit a signed waiver of notice or who shall attend such meeting without protesting, prior to or at its commencement, the lack of notice to him or her. Except as otherwise specifically required by these Bylaws, a notice or waiver of notice of any regular or special meeting need not state the purpose of such meeting.

Section 8. Quorum and Manner of Acting. A majority of the entire Board of Directors shall be present in person at any meeting of the Board of Directors in order to constitute a quorum for the transaction of business at such meeting, and, except as otherwise expressly required by statute or the Certificate of Incorporation, the act of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board of Directors. In the absence of a quorum at any meeting of the Board of Directors, a majority of the directors present thereat, or if no director be present, the Secretary, may adjourn such meeting to another time and place, or such meeting, unless it be the first meeting of the Board of Directors, need not be held. At any adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally called. Except as provided in Article III of these Bylaws, the directors shall act only as a Board and the individual directors shall have no power as such.

Section 9. Organization. At each meeting of the Board of Directors, the President, or, in his or her absence or inability to act another director chosen by a majority of the directors present shall act as chairman of the meeting and preside thereat. The Secretary (or, in his or her absence or inability to act any person appointed by the chairman) shall act as secretary of the meeting and keep the minutes thereof.

Section 10. Resignations. Any director of the Corporation may resign at any time by giving written notice of his or her resignation to the Board of Directors or the President or the Secretary. Any such resignation shall

take effect at the time specified therein or, if the time when it shall become effective shall not be specified therein, immediately upon its receipt; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

Section 11. Vacancies. Vacancies may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced. If there are no directors in office, then an election of directors may be held in the manner provided by statute. If, at the time of filling any vacancy or any newly created directorship, the directors then in office shall constitute less than a majority of the whole Board (as constituted immediately prior to any such increase) , the Court of Chancery may, upon application of any stockholder or holders of at least ten percent of the votes of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office. Except as otherwise provided in these Bylaws, when one or more directors shall resign from the Board of Directors, effective at a future date, the majority of the directors then in office, including those who have so resigned, shall have the power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office as provided in this section in the filling of other vacancies.

Section 12. Removal of Directors. Except as otherwise provided in the Certificate of Incorporation or in these Bylaws, any director may be removed, either with or without cause, at any time, by the affirmative vote of a majority of the votes of the issued and outstanding stock entitled to vote for the election of directors of the Corporation given at a special meeting of the stockholders called and held for the purpose; and the vacancy in the Board of Directors caused by any such removal may be filled by such stockholders at such meeting, or, if the stockholders shall fail to fill such vacancy, as in these Bylaws provided.

Section 13. Compensation. The Board of Directors shall have authority to fix the compensation, including fees and reimbursement of expenses, of directors for services to the Corporation in any capacity, provided

no such payment shall preclude any director from serving the Corporation in any other capacity and receiving compensation therefore.

Section 14. Action Without Meeting. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if all members of the Board of Directors or committee, as the case may be, consent thereto in writing, and the writing or writings are filed with the minutes of proceedings of the Board of Directors or committee.

ARTICLE III

OFFICERS

Section 1. Number and Qualification. The officers of the Corporation shall be the President and the Secretary. Any two or more offices may be held by the same person. Such officers shall be elected from time to time by the Board of Directors, each to hold office until the meeting of the Board of Directors following the next annual meeting of the stockholders, or until his or her successor shall have been duly elected and shall have qualified, or until his or her death, or until he or she shall have resigned, or have been removed, as hereinafter provided in these Bylaws. The Board of Directors may from time to time elect such other officers (including Chairman of the Board, one or more Vice Presidents, Assistant Vice presidents, Assistant Secretaries, Treasurers and Assistant Treasurers), and such agents, as may be necessary or desirable for

the business of the Corporation. Such other officers and agents shall have such duties and shall hold their offices for such terms as may be prescribed by the Board of Directors.

Section 2. Resignations. Any officer of the Corporation may resign at any time by giving written notice of his or her resignation to the Board of Directors, the President or the Secretary. Any such resignation shall take effect at the time specified therein or, if the time when it shall become effective shall not be specified therein, immediately upon its receipt; and unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

Section 3. Removal. Any officer or agent of the Corporation may be removed, either with or without cause, at any time, by the vote of the majority of the entire Board of Directors. Such removal shall be without prejudice to the contractual rights, if any, of the person so "removed.

Section 4. Vacancies. A vacancy in any office, whether arising from death, resignation, removal or any other cause, may be filled for the unexpired portion of the term of the office which shall be vacant, in the manner prescribed in these Bylaws for the regular election or appointment of such office.

Section 5. Compensation. The compensation of the officers of the Corporation for their services as such officers shall be fixed from time to time by the Board of Directors; provided, however, that the Board of Directors may delegate to the President the power to fix the compensation of officers and agents appointed by the President. An officer of the Corporation shall not be prevented from receiving compensation by reason of the fact that he is also a director of the Corporation.

Section 6. President. Unless the implementing resolutions of the Board of Directors of the Corporation provide otherwise, the President shall be the Chief Executive Officer of the Corporation and shall have the general powers of supervision and direction over the management of the Corporation. In the absence of the office of Chairman of the Board, or in the absence of the Chairman from time to time, the President, if present, shall preside at each meeting of the stockholders and the Board of Directors; and if the President is also serving as the Chief Executive Officer, the President shall be an ex-officio member of all committees of the Board of Directors. He or she shall perform all duties incident to the offices of President and Chief Executive Officer and such other duties as may from time to time be assigned to him or her by the Board of Directors or the Executive Committee.

Section 7. Secretary. The Secretary shall:

(a) Keep or cause to be kept in one or more books provided for that purpose, the minutes of the meetings of the Board of Directors, the committees of the Board of Directors and the stockholders;

(b) See that all notices are duly given in accordance with the provisions of these Bylaws and as required by law;

(c) Be custodian of the records and the seal of the Corporation and affix and attest the seal to all stock certificates of the Corporation (unless the seal of the Corporation on such certificates shall be a facsimile, as hereinafter provided) and affix and attest the seal to all other documents to be executed on behalf of the Corporation under its seal;

(d) See that the books, reports, statements, certificates and other documents and records required by law to be kept and filed are properly kept and filed;

(e) Have the power to sign stock certificates to the full extent

permitted by law; and

(f) In general, perform all the duties incident to the office of Secretary and such other duties as from time to time may be assigned to him or her by the Board of Directors or the President.

Section 8. Treasurer. The Treasurer shall:

(a) Have charge and custody of and be responsible for all funds and securities of the Corporation;

(b) Receive and give receipts for monies due and payable to the Corporation from any source whatsoever and deposit all such monies in the name of the Corporation in such banks, trust companies or other depositories as shall be selected in accordance with these Bylaws;

(c) Prepare, or cause to be prepared, for submission at each regular meeting of the Board of Directors, the President, or as may be required by law, a statement of financial condition of the Corporation in such detail as may be required;

(d) Have the power to sign stock certificates to the full extent permitted by law; and

(e) In general, perform all the duties incident to the office of Treasurer and such other duties as from time to time may be assigned to him or her by the Board of Directors or the President. If required by the Board of Directors, the Treasurer shall give a bond for the faithful discharge of his or her duties in such sum and with such surety or sureties as the Board of Directors shall determine.

ARTICLE IV

Executive Committee

Section 1. Membership. The Board of Directors may appoint an Executive Committee consisting of not less than three (3) members of the Board. The Chairman of the Board (if such position is filled) and the President of the Corporation shall be members of such Committee, and the Chairman of the Board shall be chairman of the Committee, unless in the implementing resolutions another person is designated as such chair. Membership on the Executive Committee shall be at the pleasure of the Board and vacancies in the membership of the Executive Committee may be filled at any meeting of the Board.

Section 2. Powers. During the intervals between the meetings of the Board of Directors, the Executive Committee shall possess and may exercise all the powers of the Board in the management and direction of the affairs of the Corporation in all cases in which specific directions shall not have been given by the Board; provided, however, that, except as specifically permitted by the Delaware General Corporation Law, the Executive Committee shall not have the power or authority to: (a) approve, adopt or propose to stockholders actions that such Law requires be approved by stockholders; or (b) adopt, amend or repeal these Bylaws. All actions taken by the

Executive Committee shall be reported to the Board at its meeting next succeeding such action, and shall be subject to revision and alteration by the Board; provided, however, that no rights of third parties shall be affected by such revision or alteration.

Section 3. Quorum. A majority of the Executive Committee shall constitute a quorum, and in every case the affirmative vote of a majority of the whole number of members constituting the Executive Committee shall be necessary for the passage of any resolution. Regular minutes of the proceedings of the Executive Committee shall be maintained.

Section 4. Meetings. The Executive Committee may act by the unanimous written consent of its members although not formally convened in meeting. The Executive Committee shall fix its own rules and procedures and shall meet as provided by such rules or by resolution of the Board, and it shall also meet at the call of the Chairman or of any member of the Committee.

ARTICLE V

INDEMNIFICATION

The Corporation, by action of the Board of Directors, may, to the fullest extent permitted by the General Corporation Law of Delaware, indemnify any and all persons who it shall have power to indemnify against any and all of the expenses, liabilities or other matters.

ARTICLE VI

FISCAL YEAR

The fiscal year of the Corporation shall begin on the first day of January of each year and end on the last day of December of each year.

ARTICLE VII

SEAL

The Board of Directors shall provide a corporate seal, which shall be in the form of the name of the Corporation and the words and figures "Corporate Seal 1973 Delaware".

ARTICLE VIII

AMENDMENTS

These Bylaws may be amended or repealed, or new Bylaws may be adopted, (1) at any annual or special meeting of the stockholders, by a majority of the total votes of the stockholders, present or in person or represented by proxy and entitled to vote on such action; provided, however, that the notice of such meeting shall have been given as provided in these Bylaws, which notice shall mention that amendment or repeal of these Bylaws, or the adoption of new Bylaws, is one of the purposes of such meeting; (2) by written consent of the stockholders pursuant to Section 11 of Article I, or (3) by action of the Board of Directors.

These Bylaws were first adopted by the Board of Directors of DDI Pharmaceuticals, Inc. on June 15, 1994. These Bylaws became the Bylaws of OXIS International, Inc. on September 7, 1994 pursuant to merger of DDI Pharmaceuticals, Inc. and other companies, with DDI Pharmaceuticals, Inc. being the surviving corporation in that merger and changing its name to OXIS International, Inc. as of the effective date of the merger. These Bylaws were thereafter amended by the Board of Directors of OXIS International, Inc. on August 30, 2000. This Composite includes those amendments (Article IV and portions of Article III).

Exhibit 10(b)

SUBSCRIPTION AND PURCHASE AGREEMENT

UP TO 1,774,080 SHARES

OF SERIES C PREFERRED STOCK

THIS SUBSCRIPTION AND PURCHASE AGREEMENT (the "Agreement") is entered into as of the ____ day of _____, 1996 by and between OXIS INTERNATIONAL, INC., a Delaware corporation (the "Company"), and [all investors identified in attachment to this Subscription] (the "Investor").

In consideration of the mutual promises, representations, warranties, covenants and conditions set forth in this Agreement, the Company and the Investor mutually agree as follows:

ARTICLE l

Description of Proposed Financing

1.1 Authorization of Sale of Series C Preferred. The Company has authorized the offer, issuance and sale (the "Offering") of a maximum of 1,774,080 shares of Series C Preferred Stock ("Series C Preferred"), pursuant to the Overseas Memorandum (defined below) and the U.S. Memorandum (defined below). The Company, upon its sole discretion, may increase the amount of Series C Preferred sold in the Offering. The rights and preferences of the Series C Preferred shall be as set forth in the Certificate of Designations, Preferences and Rights of Series C Preferred Stock attached as Exhibit A hereto which has been filed with the Delaware Secretary of State ("Certificate of Designations").

1.2 Purchase and Sale of the Series C Preferred. Subject to the terms and conditions of this Agreement and in reliance upon the representations and warranties contained herein, the Company agrees to sell to the Investor and to other investors signing similar forms of Subscription and Purchase Agreement the shares of Series C Preferred for which each such Investor shall subscribe. The exact amount of the Investor's subscription is set forth in Section 8.1 hereof. The purchase price per share of Series C Preferred is U.S. $1.30.

1.3 Closing. The Closing of the purchase and sale of the Series C Preferred contemplated by this Agreement (herein the "Closing") shall take place at such time as agreed between the Company and the Investor. At the Closing, the Company shall deliver to the Investor one or more Certificates evidencing the shares of Series C Preferred to be purchased by such Investor, against delivery to the Company by the Investor of a certified or cashier's check (or other form of payment acceptable to the Company) in the amount of the purchase price of the Series C Preferred.

ARTICLE 2

Representations and Warranties of the Company

The Company hereby represents and warrants to the Investors that:

2.1 Disclosure. The Company has provided to the Investor the Company's

Confidential Private Placement Memorandum, dated March 18, 1996 (the "U.S. Memorandum") together with the Company's Confidential Private Placement

Memorandum, dated January 26, 1996 (the "Overseas Memorandum"), which includes as exhibits, without limitation, the Company's Business Plan dated January 1996 and the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1994 and its quarterly reports on Form 10-Q for the quarterly periods ended March 31, 1995, June 30, 1995 and September 30, 1995, in addition to certain Risk Factors disclosure (collectively, the "Offering Documents"). The Company has fully provided the Investor with all the information which the Investor has requested for deciding whether to purchase the Series C Preferred. The Investor acknowledges that the Company is engaged in an offering of the Series C Preferred solely to investors outside the United States (as described in the Overseas Memorandum, hereinafter referred to the "Overseas Offering") and acknowledges and agrees that this Offering is a simultaneous offering solely to U.S. investors pursuant to Regulation D promulgated pursuant to the Securities Act of 1933, as amended.

2.2 Binding Obligation. This Agreement and each additional agreement expressly contemplated by this Agreement, constitute a valid and legally binding obligation of the Company.

ARTICLE 3

Representations and Warranties of the Investor

3.1 High Risk Investment. The Investor is aware that investment in the Series C Preferred involves a high degree of risk. The Investor represents that it has read and carefully considered the disclosures set forth in this Agreement and the Offering Documents, including the risk factors enumerated herein and in the Offering Documents, and it understands that an investment in this Offering should be considered only by a person able to withstand a total loss of its investment.

3 .2 Binding Obligations. This Agreement and each additional agreement expressly contemplated by this Agreement, constitutes a valid and legally binding obligation of the Investor.

3. 3 Corporate Investors. If the Investor is a corporation, it hereby represents and warrants that:

(a) Organization and Standing. The Investor is a corporation duly organized, validly existing, and in good standing under the laws of its jurisdiction of incorporation, and has all requisite corporate power and authority to own its properties and to carry on its business as now conducted.

(b) Authorization. All corporate action on the part of the Investor, its officers and directors necessary for the authorization, execution and delivery of this Agreement and all additional agreements expressly contemplated by this Agreement and the performance of all obligations of the Investor hereunder have been taken or will be taken prior to the Closing.

ARTICLE 4

Federal and Other Securities Laws

4.1 Investment Representations and Warranties. As an inducement to the Company to sell Series C Preferred to the Investor, the Investor hereby agrees, represents and warrants, as of the date of acceptance of the Investor's subscription:

(a) By reason of the Investor's knowledge and experience in financial and business matters in general, and investments in particular, the Investor is able to evaluate the merits and risks of an investment in the Securities. For purposes of this Article 4, the term "Securities" shall mean each of the shares of

Series C Preferred and the shares of Company Common Stock (the "Common Stock") into which shares of Series C Preferred may be converted.

(b) The Investor's income and net worth are such that the Investor is not now required, and does not contemplate in the future being required, to dispose of any portion of any investment in the Securities to satisfy any existing or contemplated undertaking.

(c) In evaluating the merits and risks of an investment in the Securities, the Investor has relied solely upon the Offering Documents and the advice of its legal counsel, tax advisors, and/or investment advisors.

(d) The Investor is able to bear the economic risk of an investment in the Securities, including without limiting the generality of the foregoing, the risk of losing part or all of the Investor's investment in the Securities, and the inability to sell or transfer the Securities for an indefinite period of time or at a price which would enable the Investor to recoup its investment in the Securities.

(e) The Investor's purchase of the Securities is as principal, solely for the Investor's own account, for investment, and not with an intent to sell, or for sale in connection with any distribution of the Securities, and no other person has any interest in or right with respect to the Securities, nor has the Investor agreed to give any person any such interest or right in the future.

(f) The Investor is an "accredited investor" as that term is defined in Section 501(a) of Regulation D of the Securities Act of 1933, as amended (the "Securities Act"). An "accredited investor" includes, among other persons and entities. (1) a natural person whose net worth, or joint net worth with that person's spouse, exceeds $1,000,000; (2) a natural person who has had income in excess of $200,000 in each of the two most recent years, or, with that person's spouse, in excess of $300,000 in those years, and who expects to have at least that level of income in the current year; (3) a corporation, partnership or similar business entity, not formed for the specific purpose of acquiring the Securities, with total assets in excess of $5,000,000; and (4) any entity in which all of the equity owners are accredited investors.

(g) If the Investor is a corporation, partnership or trust, the person executing this Agreement on behalf of such entity has all right, power and authority to so execute and deliver this Agreement on behalf of such entity and that the above representations, warranties, agreements, acknowledgments and understandings shall be deemed to have been made on behalf of the person or persons for whose benefit such Securities are being acquired.

(h) The Company has afforded the Investor and its advisors full and complete access to all information with respect to the Company and its business and financial condition (to the extent that such information was possessed by the Company or could be acquired by the Company without unreasonable effort or expense) that the Investor and its advisors deemed necessary in order to evaluate the merits and risks of an investment in the Securities. The Investor further represents and warrants that its advisors have received satisfactory and complete information concerning the business and financial condition of the Company in response to all inquiries made by them in respect thereof.

(i) The offer to sell Securities was directly communicated to the Investor, in such a manner that the Investor was able to ask questions and receive answers concerning the terms of this transaction and that at no time was the Investor presented with or solicited by any leaflet, newspaper or magazine article, radio or television advertisement or any other form of general advertising, or invited to any promotional meeting, otherwise than in connection and concurrently with such communicated offer. No oral representations have been made or oral information furnished to the Investor in connection with the placement of Securities which were in any way inconsistent with the Memorandum or its exhibits .

4.2 Further Acknowledgments By Investor. The Investor represents and warrants that the Investor has been advised that:

(a) The Securities have not been registered under the Securities Act, or under

the securities laws of any state and that the Securities must be held until the Securities are registered under the Securities Act and applicable state securities laws or an exemption from such registration is available.

(b) No federal or state agency, including the U.S. Securities and Exchange Commission (the "Commission"), or the securities commission or authorities of any state or regulatory jurisdiction has approved or disapproved the Securities, passed upon or endorsed the merits of the Offering or the accuracy or adequacy of the Offering Documents, or made any finding or determination as to the fairness of the Securities or an investment in the Securities.

(c) The Securities that the Investor will be acquiring may be considered "Restricted Securities" as that term is defined in Rule 144 promulgated under the Securities Act; that the exemption from registration under Rule 144 will not be available in any event for at least two years from the date of issuance, and even then will not be available unless (1) a public trading market then exists for said Securities, (2) adequate information concerning the Company is then available to the public, and (3) other terms and conditions of Rule 144 are complied with.

(d) Any and all certificates representing the Securities shall bear a legend describing the aforementioned restrictions on the transfer of such Securities which legend will not be removed until the Securities have been registered under the Securities Act. The Securities are sold in accordance with any of the provisions of Rule 144 or Rule l44A under the Securities Act, or the Securities qualify for resale under Rule 144(k) promulgated under the Securities Act.

(e) Investor understands that in the view of the Commission the statutory basis for the exemption claimed for the transactions contemplated by the Agreement would not be present if the offering of Securities, although in technical compliance with Regulation D promulgated under the Securities Act, is part of a plan or scheme to evade the registration provisions of the Securities Act, and Investor confirms that its purchase is not part of any such plan or scheme.

(f) The Investor agrees that all certificates evidencing the Securities shall bear a legend in substantially the following form, and by which the Investor agrees to be bound, in addition to any legends required by state securities laws:

> THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 NOR REGISTERED NOR QUALIF1ED UNDER ANY STATE SECURITIES LAWS. SUCH SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, DELIVERED AFTER SALE, TRANSFERRED, PLEDGED, OR HYPOTHECATED UNLESS QUALIFIED AND REGISTERED UNDER APPLICABLE STATE AND FEDERAL SECURRRITIES LAWS OR UNLESS, IN THE OPINION OF COUNSEL SATISFACTORY TO THE COMPANY, SUCH QUALIFICATION AND REGISTRATION IS NOT REQUIRED. ANY TRANSFER OF THE SECURITIES REPRESENTED BY THIS AGREEMENT IS FURTHER SUBJECT TO OTHER RESTRICTIONS, TERMS AND CONDITIONS WHICH ARE SET FORTH HEREIN.

(g) The Company shall make a notation regarding the restrictions on transfer of the Securities in its stock books, and the Company shall not be required to transfer on its books any of such Securities that have been sold or transferred in violation of any of the provisions of this Agreement or to treat as the owner of such Securities any transferee to whom such securities have been so transferred.

4.3 Registration of Shares.

(a) Filing of Registration Statement. The Company shall

use its best efforts to file with the Commission, on or before the date ninety (90) days following the final Closing ("Final Closing") or the sale of Securities to any investors participating in this Offering or the Overseas Offering, a registration statement under the Securities Act covering the resale of the

Common Stock (including shares of common stock issued or issuable as a dividend or other distribution with respect to, or in exchange for, or in replacement of such Common Stock) (collectively, the "Registrable Securities") by the holders thereof (the "Holders"). Notwithstanding the foregoing, the Company shall not be obligated to take any action to effect any such registration pursuant to this Section 4.3 in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act.

(b) Company Obligations Regarding Registration Statement.

The Company shall:

(i) Keep the registration statement with respect to the Registrable Securities filed pursuant to Section 4.3(a) of this Agreement ("Registration Statement") effective for the period from the date of declaration of effectiveness of such Registration Statement through the earlier of: (i) the date 24 months from the Fina1 Closing, or (ii) the sale of all of the Registrable Securities;

(ii) Prepare and file with the Commission such amendments and supplements to such Registration Statement and the prospectus used in connection with such Registration Statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such Registration Statement during the period of its effectiveness; and

(iii) Furnish to the Holders such numbers of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them.

(c) Investor Cooperation and Indemnification. The Investor agrees to cooperate fully with the Company in the preparation and filing of the Registration Statement. The Investor will provide at its own expense and in writing to the Company all information and data with respect to itself and to its plan of distribution as shall be required by the rules and regulations of the Commission, to be included in any such Registration Statement. The Investor also agrees to comply fully with reasonable procedures established by the Company in connection with the registration. The Investor further agrees to indemnify, defend, and hold harmless the Company, each of its directors, each of its officers who has signed such Registration Statement, (or any amendment or supplement thereof) and each person, if any, who controls the Company, within the meaning of the Securities Act, against any costs, expenses (including attorneys' fees), losses, damages or liabilities to which the Company, or any such director, officer or controlling person of the Company may become subject under the Securities Act or otherwise, insofar as said costs, expenses, losses, damages or liabilities (or actions in respect thereof) arise out of or are based upon any violation by a selling stockholder under this Agreement or any reasonable procedures established by the Company in connection with the registration, or untrue statement or alleged untrue statement of material fact contained in the registration statement (or any amendment or supplement thereof), or arising out of or are based upon the omission or the alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; provided, however, that such indemnity shall apply only to the extent that such untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with information furnished by the Investor for use in the preparation thereof.

(d) Company Indemnification. The Company hereby agrees to indemnify, defend, and hold harmless the Investor, each of its directors and officers and each person, if any, who controls the Investor within the meaning of the Securities Act against any costs, expenses (including attorneys fees), losses, damages or liabilities to which the Investor or any such director or officer or controlling person may become subject under the Securities Act or otherwise insofar as said costs, expenses, losses, damages or liabilities (or actions in respect thereof), arise out of or are based upon, any untrue statement or alleged untrue statement of material fact contained in the registration statement, (or any amendment or supplement thereof) or from the omission or the alleged omission therein of a material fact required to be stated therein or necessary to make the statements therein not misleading; provided, however, that such indemnity shall apply only to the extent that such untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with

information furnished by the Company or any officer, director or controlling person of the Company (other than the Investor) for use in the preparation thereof and that the Company shall be entitled to control the defense and any settlement of any such matter

ARTICLE 5

Conditions to the Company's Obligations at Closing

The obligations of the Company under Section 1.2 of this Agreement are subject to the fulfillment on or before the Closing of each of the following conditions as to the Investor:

5.1 Representations and Warranties True on the Closing. The representations and warranties of the Investor contained in Sections 3 and 4 shall be true on and as of the Closing with the same force and effect as if they had been made at the Closing.

5.2 Payment of Purchase Price. The Investor shall have delivered to the Company, the total consideration for all of the shares of Series C Preferred which the Investor is purchasing at the Closing.

ARTICLE 6

Series C Preferred

6.1 Registration and Transfer of Series C Preferred.

(1) The Company (or any designated agent of the Company) shall, at all times while any shares of Series C Preferred are outstanding, act as the registrar of the Series C Preferred and shall cause to be kept at its principal office in the City of Portland, Oregon, or in such other place or places and by such other registrar or registrars, if any, as the Company may designate, a register in which shall be entered the names and addresses of the registered holders of Series C Preferred and of all transfers of Series C Preferred. The name of the registered holder shall be noted on the certificates representing the Series C Preferred by the Company or other registrar.

(2) No transfer of shares of Series C Preferred shall be valid unless made by the registered holder or his executors or administrators or other legal representatives or his or their attorney duly appointed by an instrument in writing in form and execution satisfactory to the Company, upon compliance with the provisions of this Agreement, applicable law, and such other requirements as the Company and/or other registrar may reasonably prescribe, and unless such transfer shall have been duly entered on the appropriate register by the Company or other registrar. The person in whose name a share of Series C Preferred is registered shall be deemed to be the owner thereof.

6.2 Series C Preferred. The Series C Preferred shall have such conversion, dividend, liquidation preferences, and voting rights as set forth in the Certificate of Designations.

6.3 Reservation of Shares. The Company agrees that, so long as any share of Series C Preferred shall remain outstanding, the Company shall at all times reserve and keep available, out of its authorized capital stock for the purpose of issue upon conversion of the Series C Preferred, the full number of shares of Common Stock then issuable upon conversion of the outstanding Series C Preferred.

6.4 Va1idity of Shares. The Company agrees that all shares of Common Stock which may be issued upon conversion of the Series C Preferred will, upon issuance, be legally and validly issued, fully paid and nonassessable.

ARTICLE 7

Miscellaneous

7 .1 Survival of Warranties. The warranties, representations and covenants contained in or made pursuant to this Agreement shall survive the execution and delivery of this Agreement and the Closing and shall in no way be affected by any investigation of the subject matter thereof made by or on behalf of the Company or the Investor, as the case may be .

7 .2 Entire Agreement. This Agreement constitutes the entire agreement between the parties, and neither party shall be liable or bound to the other party in any manner by any warranties, representations or covenants except as specifically set forth herein or therein. The terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any third party any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

7.3 Governing Law. This Agreement shall be governed and construed under the laws of the State of Oregon as applied to agreements among Oregon residents entered into and to be performed entirely within Oregon.

7.4 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

7.5 Notices. Any notice required or permitted under this Agreement shall be given in writing and shall be deemed effectively given upon personal delivery or seven (7) business days after deposit in the international or U. S. mail, postage prepaid, addressed to the Company at OXIS International, Inc., 6040 North Cutter Circle, Suite 317, Portland, Oregon 97217, and to the Investor at the address set forth on the signature page hereto, or at such other address as a party may designate by ten (10) days' advance notice to the other party.

7.6 Expenses. The Company shall pay all costs and expenses that it incurs with respect of the negotiation, execution, delivery and performance of the Offering, and each Investor shall pay all costs and expenses that it incurs with respect to the negotiation, execution, delivery and performance of this Agreement.

7.7 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or

prospectively), with the written consent of the Company and the holders of a majority of the shares of Series C Preferred purchased in this U.S. Offering then outstanding. Any amendment or waiver effected in accordance with this Section shall be binding upon each holder of the Series C Preferred purchased under this Agreement at the time outstanding (including the shares of Common Stock issuable upon conversion of the Series C Preferred), each future holder of such Series C Preferred and the Company.

7.8 Rights of Investors. Each holder of the Series C Preferred shall have the absolute right to exercise or refrain from exercising any right or rights that such holder may have by reason of this Agreement or applicable law as a holder of Series C Preferred, including, without limitation, the right to consent to the waiver of any obligation of the Company under this Agreement and to enter into an agreement with the Company for the purpose of modifying this Agreement or any agreement effecting any such modification, and such holder shall not incur any liability to any other holder or holders of the securities with respect to exercising or refraining from exercising any such right or rights.

7.9 Severability. If one or more provisions or this Agreement are held to be unenforceable under applicable law, such provisions shall be excluded from this Agreement, and the balance of this Agreement shall be interpreted as if such provisions were so excluded and shall be enforceable in accordance with its terms.

7.10 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7.11 Gender. Words importing the neuter gender shall include the masculine and feminine gender.

7.12 Definitions. Terms used herein and defined in the Memorandum shall have the same meanings herein as therein defined.

ARTICLE 8

Subscription

8.1 Subscription Amount. The undersigned hereby subscribes for [number of shares of Series C Preferred as per attachment to this Subscription] shares of Series C Preferred (total purchase price $_____) and tenders herewith a certified check or bank draft in full payment for such subscription or shall tender such other evidence of payment in full for the Securities as shall be acceptable to the Company, including forgiveness of outstanding indebtedness.

8.2 Resale Compliance. The undersigned agrees to comply with the Securities Act and the rules and regulations promulgated thereunder, and any other relevant securities legislation and policies governing the purchase, holding and resale of the securities subscribed for (or those issuable upon conversion thereof), including, without limitation, applicable state blue sky laws.

The undersigned acknowledges that this subscription shall not be effective unless accepted by the Company as indicated below.

CORPORATE OR OTHER ENTITY: INDIVIDUAL INVESTOR(S):

_____
(Printed Name of Entity)

By: *_____ *_____
- -
(Signature) (Signature)

_____ _____
(Name Printed) (Name Printed)

Title:_____ _____
(Street Address)

_____
(Street Address) _____
(City, State, Zip)

_____
(City, State, Zip) _____
(Telephone Number)

_____
(Telephone Number)
Federal I.D. No. _____

FORM OF OWNERSHIP

[ ] individual [ ] community property

[ ] joint tenants [ ] tenants in commong

[ ] other _____

* Signed by all investors

ACCEPTED:

OXIS INTERNATIONAL, INC., a Delaware corporation

By: _**_____
--
Name:
Title:

Dated: _____, 1996

** Signed by Company

OXIS INTERNATIONAL, INC.

SERIES C PREFERRED STOCK OFFERING

(1,774,080 Total Shares)

Holder	Purchase Price ($1.30/sh)	Shares
Marc Dumont	100,070	76,977
Legong Investments N.V.	200,000	153,846
Rauch & Co.	260,000	200,000
Megapolis B.V.	24,999	19,230
Carlo Gillet	40,300	31,000
D.N.B.	100,000	76,923

Sharon L. Carpenter IRS	49,999	38,461
Deborah A. Y. Day IRA	100,000	76,923
Syliva Morio IRA	49,999	38,461
Maxine Y. Yakushijin IRA	100,000	76,923
Terrance Y. Yoshikawa IRA	200,000	153,846
America HealthCare Fund, LP	100,100	77,000
Alta-Berkeley L.P. II	259,145	199,342
Finovelec S.A.	202,222	155,555
BBL France	65,000	50,000
EGGER & Co., c/o chase Manhatt	13,000	10,000
EGGER & Co., c/o chase Manhatt	13,000	10,000
EGGER & Co., c/o chase Manhatt	13,000	10,000
EGGER & Co., c/o chase Manhatt	13,000	10,000
EGGER & Co., c/o chase Manhatt	6,500	5,000
EGGER & Co., c/o chase Manhatt	1,300	1,000
EGGER & Co., c/o chase Manhatt	13,000	10,000
FINNO S.A.	177,895	136,842
Sofinnova Capital F.C.P.R.	122,266	94,051
Sofinnova S.A.	81,510	62,700
TOTAL	$2,306,305	1,774,080

THIS WARRANT MAY NOT BE SOLD, TRANSFERRED OR OTHERWISE DISPOSED OF EXCEPT AS SPECIFIED IN SECTION 11 HEREOF. NEITHER THE RIGHTS REPRESENTED BY THIS WARRANT NOR THE SHARES ISSUABLE UPON THE EXERCISE HEREOF (COLLECTIVELY, THE "SECURITIES") HAVE BEEN REGISTERED FOR OFFER OR SALE UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR APPLICABLE STATE LAW, AND MAY NOT BE OFFERED OR SOLD WITHIN THE UNITED STATES, OR TO OR FOR THE ACCOUNT OR BENEFIT OF, UNITED STATES PERSONS, UNTIL 40 DAYS AFTER THE LATER OF THE COMMENCEMENT OF THE OFFERING AND THE CLOSING DATE, NOR MAY THE WARRANT BE EXERCISED BY OR ON BEHALF OF ANY U.S. PERSON, EXCEPT IN EITHER CASE IN ACCORDANCE WITH REGULATIONS UNDER THE SECURITIES ACT. THE RESALE SAFE HARBOR OF REGULATION S DOES NOT PERMIT THE RESALE OF THE SECURITIES IN THE UNITED STATES OR TO A U.S. PERSON. OFFERS AND SALES MAY BE MADE IN THE UNITED STATES OR TO U.S. PERSONS ONLY PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR AN APPLICABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS UNDER SUCH ACT. THE SECURITIES MAY NOT BE SOLD OR OFFERED FOR SALE IN WHOLE OR IN PART NOR THE WARRANT EXERCISED EXCEPT IN ACCORDANCE WITH THE PROVISIONS OF SECTON 2 AND SECTION 11 HEREOF.

OXIS INTERNATIONAL, INC.

WARRANT TO PURCHASE COMMON STOCK

OXIS International, Inc., a Delaware corporation (the "Company"), hereby certifies that, for value received, _____ ("Investor"), the

registered holder hereof, or its registered assigns, is entitled, subject to the terms set forth below, to purchase from the Company upon surrender of this Warrant, at any time or times on or after the date hereof but not after 5 :00 P .M., Portland time, on the Expiration Date (as defined herein), _____ (_____) fully paid nonassessable shares (the "Warrant Shares") of Common Stock (as defined herein) of the Company (as adjusted from time to time as provided in this Warrant) at an initial purchase price of U.S. $1.43 per share in lawful money of the United States.

Section 1. (a) Definitions. The following words and terms as used in this Warrant shall have the following meanings:

"Common Stock" means (a) the Company's common stock and (b) any capital stock into which such "Common Stock" shall have been changed or any capital stock resulting from a reclassification of such "Common Stock."

"Convertible Securities" mean any securities issued by the Company which are convertible into or exchangeable for, directly or indirectly, shares of Common Stock.

"Expiration Date" means May 8, 2001.

"Warrant Exercise Price" shall initially be U.S. $1.43 per share and shall be adjusted and readjusted from time to time as provided in this Warrant.

(b) Other Definitional Provisions. (i) Except as otherwise specified herein, all references herein (A) to any person other than the Company, shall be deemed to include such person's successors and assigns, (B) to the Company shall be deemed to include the Company's successors and (C) to any applicable law defined or referred to herein, shall be deemed references to such applicable law as the same may have been or may be amended or supplemented from time to time.

(ii) When used in this Warrant, the words "herein," "hereof," and "hereunder," and words of similar import, shall refer to this Warrant as a whole and not to any provision of this Warrant, and the words "Section," "Schedule," and "Exhibit" shall refer to Sections of, and Schedules and Exhibits to, this Warrant unless otherwise specified.

(iii) Whenever the context so requires the neuter gender includes the masculine or feminine, and the singular number includes the plural, and vice versa.

Section 2. Exercise of Warrant. (a) Subject to the terms and conditions hereof, this Warrant may be exercised, in whole or in part, at any time during normal business hours on or after the opening of business on the date hereof and prior to the close of business on the Expiration Date. The rights represented by this Warrant may be exercised by the holder hereof then registered on the books of the Company, in whole or from time to time in part (except that this Warrant shall not be exercisable as to a fractional share) by (i) delivery of a written notice, in the form of the Subscription Notice attached as Exhibit A hereto, of such holder's election to exercise this Warrant, which notice shall specify the number of Warrant Shares to be purchased, (ii) payment to the Company of an amount equal to the Warrant Exercise Price multiplied by the number of Warrant Shares as to which the Warrant is being exercised (plus any applicable issue or transfer taxes) in cash or by certified or official bank check, for the number of Warrant Shares as to which this Warrant shall have been exercised, and (iii) the surrender of this Warrant, properly endorsed, at the principal office of the Company in Portland, Oregon (or at such other agency or office of the Company as the Company may designate by notice to the holder hereof); provided, that if such Warrant Shares are to be issued in any name other than that of the registered holder of this

Warrant, such issuance shall be deemed a transfer and the provisions of Section 11 shall be applicable. In addition, exercise of the Warrant is expressly conditioned upon the delivery to the Company by the holder thereof of either: (x) written certification that it is not a "U.S. person" (as defined in Regulation S promulgated under the Securities Act of 1933, as amended (the "Securities Act")) and that the Warrant is not being exercised on behalf of a U.S. person; or (y) a written opinion of counsel to the effect that the Warrant and the Warrant Shares have been registered under the Securities Act or are exempt from registration thereunder. THE WARRANT MAY NOT BE EXERCISED WITHIN THE UNITED STATES AND THE WARRANT SHARES MAY NOT BE DELIVERED WITHIN THE UNITED STATES UPON EXERCISE OF THE WARRANT, OTHER THAN IN OFFERINGS DEEMED TO MEET THE DEFINITION OF AN "OFFSHORE TRANSACTION" PURSUANT TO RULE 902 OF REGULATION S, UNLESS REGISTERED UNDER THE SECURITIES ACT OR AN EXEMPTION FROM SUCH REGISTRATION IS AVAILABLE. EXERCISE OF THE WARRANT IS FULLY SUBJECT TO ALL PROCEDURES ESTABLISHED BY THE COMPANY IN CONNECTION WITH THE FOREGOING SENTENCE AND THE COMPANY WILL NOT HONOR ANY EXERCISE IF THE REQUIREMENTS OF THE FOREGOING SENTENCE AND RELATED PROCEDURES ESTABLISHED BY THE COMPANY ARE NOT FULFILLED. In the event of any exercise of the rights represented by this Warrant in compliance with this Section 2(a), a certificate or certificates for the Warrant Shares so purchased, registered in the name of, or as directed by, the holder, shall be delivered to, or as directed by such holder within a reasonable time, not exceeding 15 days, after such rights shall have been so exercised.

(b) Unless the rights represented by this Warrant shall have expired or have been fully exercised, the Company shall issue a new Warrant identical in all respects to the Warrant exercised except (x) it shall represent rights to purchase the number of Warrant Shares purchasable immediately prior to such exercise under the Warrant exercised, less the number of Warrant Shares with respect to which such Warrant was exercised, and (y) the holder thereof shall be deemed to have become the holder of record of such Warrant Shares immediately prior to the close of business on the date on which the Warrant was surrendered and payment of the amount due in respect of such exercise and any applicable taxes was made, irrespective of the date of delivery of such share certificate, except that, if the date of such surrender and payment is a date when the stock transfer books of the Company are properly closed, such person shall be deemed to have become the holder of such Warrant Shares at the opening of business on the next succeeding date on which the stock transfer books are open.

Section 3. Covenants as to Common Stock. The Company covenants and agrees that all Warrant Shares which may be issued upon the exercise of the rights represented by this Warrant will, upon issuance, be validly issued, fully paid and nonassessable. The Company further covenants and agrees that during the period within which the rights represented by this Warrant may be exercised, the Company will at all times have authorized

and reserved a sufficient number of shares of Common Stock to provide for the exercise of the rights then represented by this Warrant and that the par value of said shares will at all times be less than or equal to the applicable Warrant Exercise Price.

Section 4. Adjustment of Warrant Exercise Price Upon Stock Splits, Dividends, Distributions and Combinations: and Adjustment of Number of Shares. (a) In case the Company shall at any time subdivide its outstanding shares of Common Stock into a greater number of shares or issue a stock dividend or make a distribution with respect to outstanding shares of Common Stock or Convertible Securities payable in Common Stock or in Convertible Securities, the Warrant Exercise Price in effect immediately prior to such subdivision or stock dividend or distribution shall be proportionately reduced (treating for such purpose any such shares of Convertible Securities outstanding or payable as being the number of shares of Common Stock issuable upon their conversion) and conversely, in case the outstanding shares of Common Stock of the Company shall be combined into a smaller number of shares, the Warrant Exercise Price in effect immediately prior to such combination shall be proportionately increased in each case by multiplying the then effective Warrant Exercise Price by a fraction, the numerator of which shall be the number of shares of Common Stock

outstanding immediately prior to such action and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such action, and the product so obtained shall thereafter be the Warrant Exercise Price.

(b) Upon each adjustment of the Warrant Exercise Price as provided above in this Section 4, the registered holder of this Warrant shall thereafter be entitled to purchase, at the Warrant Exercise Price resulting from such adjustment, the number of shares obtained by multiplying the Warrant Exercise Price in effect immediately prior to such adjustment by the number of shares purchasable pursuant hereto immediately prior to such adjustment and dividing the product thereof by the Warrant Exercise Price after such adjustment.

Section 5. Notice of Adjustment of Warrant Exercise Price. Upon any adjustment of the Warrant Exercise Price, then the Company shall give notice thereof to the registered holder of this Warrant, which notice shall state the Warrant Exercise Price in effect after such adjustment and the increase, or decrease, if any, in the number of shares purchasable at the Warrant Exercise Price upon the exercise of this Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

Section 6. Computation of Adjustments. Upon each computation of an adjustment in the Warrant Exercise Price and the number of shares which may be subscribed for and purchased upon exercise of this Warrant, the Warrant Exercise Price shall be computed to the nearest cent (i.e., fractions of .5 of a cent, or greater, shall be rounded to the next highest cent) and the number of shares which may be subscribed for and purchased upon exercise of this Warrant shall be calculated to the nearest whole share (i.e., fractions of less than one half of a share shall be disregarded and fractions of one half of a share, or greater, shall be treated as being a whole share).

Section 7. No Change in Warrant Terms on Adjustment. Irrespective of any adjustment in the Warrant Exercise Price or the number of shares of Common Stock issuable upon exercise hereof, this Warrant, whether theretofore or thereafter issued or reissued, may continue to express the same price and number of shares as are stated herein and the Warrant Exercise Price and such number of shares specified herein shall be deemed to have been so adjusted.

Section 8. Taxes. The Company shall not be required to pay any tax or taxes attributable to the initial issuance of the Warrant Shares or any transfer involved in the issue or delivery of any certificates for Warrant Shares of Common Stock in a name other than that of the registered holder hereof or upon any transfer of this Warrant.

Section 9. Warrant Holder Not Deemed a Shareholder. No holder, as such, of this Warrant shall be entitled to vote or receive dividends or be deemed the holder of shares of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the holder hereof, as such, any of the rights of a shareholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive

notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the holder of this Warrant of the Warrant Shares which he is then entitled to receive upon the due exercise of this Warrant.

Section 10. No Limitation on Corporate Action. No provisions of this Warrant and no right or option granted or conferred hereunder shall in any way limit, affect or abridge the exercise by the Company of any of its corporate rights or powers to recapitalize, amend its Certificate of Incorporation, reorganize, consolidate or merge with or into another corporation, or to

transfer all or any part of its property or assets, or the exercise of any other of its corporate rights and powers.

Section 11. Transfer: Opinions of Counsel: Restrictive Legends.

(a) Prior to any sale, transfer or other disposition of this Warrant or the Warrant Shares, the holder thereof will give ten (10) days' notice to the Company of such holder's intention to effect such transfer. Each such notice shall describe the manner and circumstances of the proposed transfer and, if such transfer is not registered under the Securities Act (below defined), shall be accompanied by an opinion, addressed to the Company and reasonably satisfactory in form and substance to it, of counsel (reasonably satisfactory to the Company) for such holder, stating whether, in the opinion of such counsel, such transfer will be a transaction exempt from registration under the Securities Act.

(b) If such sale, transfer or other disposition may in the opinion of such counsel be effected without registration under the Securities Act, such holder shall thereupon be entitled to the terms of the notice delivered by such holder to the Company. If in the opinion of such counsel such transfer may not be effected without registration under the Securities Act, such holder shall not be entitled to so transfer this Warrant, or the Warrant Shares unless the Company shall have filed a registration statement relating to such proposed transfer and such registration statement has become effective under the Securities Act.

(c) Subject to the provisions of this Section 11, the holder may at any time transfer this Warrant or the Warrant Shares to an affiliate of the holder.

(d) The terms of any registration rights agreement entered into by and between the Company and the holder hereof, to the extent applicable, shall be binding upon and inure to the benefit of any transferee of this Warrant (or unexercised portion hereof) or Warrant Shares issued upon the exercise of this Warrant, and shall cease to be binding upon or benefit the transferor.

(e) Any Warrant Shares issued pursuant to the exercise of this Warrant may bear one or more of the legends in similar form to the legend set forth on this Warrant.

Section 12. Exchange of Warrant. This Warrant is exchangeable upon the surrender hereof by the holder hereof at such office or agency of the Company, for new Warrants of like tenor representing in the aggregate the right to subscribe for and purchase the number of shares which may be subscribed for and purchased hereunder from time to time after giving effect to all the provisions hereof, each of such new Warrants to represent the right to subscribe for and purchase such number of shares as shall be designated by said holder hereof at the time of such surrender .

Section 13. Lost, Stolen. Mutilated or Destroyed Warrant. If this Warrant is lost, stolen, mutilated or destroyed, the Company shall, on such terms as to indemnity or otherwise as it may in its discretion impose (which shall, in the case of a mutilated Warrant, include the surrender thereof), issue a new Warrant of like denomination and tenor as the Warrant so lost, stolen, mutilated or destroyed. Any such new Warrant shall constitute an original contractual obligation of the Company, whether or not the allegedly lost, stolen, mutilated or destroyed Warrant shall be at any time enforceable by anyone.

Section 14. Representation of Holder. The holder of this Warrant, by the acceptance hereof, represents that it is acquiring this Warrant for its own account for investment and not with a view to, or sale in connection with, any distribution hereof or of any of the shares of Common Stock or other securities issuable upon the exercise thereof, nor with any present intention of distributing any of the same.

Section 15. Notice. All notices and other communications under this Warrant shall (a) be in writing (which shall include communications by telecopy), (b) be (i) sent by registered or certified mail, postage prepaid, return receipt requested, by telecopier, or (ii) delivered by hand, (c) be given at the following respective addresses and telecopier numbers and to the attention of the following persons:

(i) if to the Company, to it at:

OXIS International, Inc.
Corporate Headquarters
6040 N. Cutter Circle, Suite 317
Portland, Oregon 97217-3935
Attention: Ray R. Rogers, Chairman
Telephone: (503) 283-3911
Telecopier: (503) 283-4058

with a copy to:

Jackson, Tufts, Cole & Black
60 South Market Street
San Jose, CA 95113
Attention: Richard Scudellari, Esq.
Telephone: (408) 998-1952
Telecopier: (408) 998-4889

(ii) if to Investor, to it at the address set forth below Investor's signature on the signature page hereof.

or at such other address or telecopier number or to the attention of such other person as the party to whom such information pertains may hereafter specify for the purpose in a notice to the other specifically captioned "Notice of Change of Address", and (d) be effective or deemed delivered or furnished (i) if given by mail, on the fifth Business Day after such communication is deposited in the mail, addressed as above provided, (ii) if given by telecopier, when such communication is transmitted to the appropriate number determined as above provided in this Section and the appropriate answer back is received or receipt is otherwise acknowledged, and (iii) if given by hand delivery, when left at the address of the addressee addressed as above provided, except that notices of a change of address, telecopier or telephone number, shall not be deemed furnished, until received.

Section 16. Miscellaneous. This Warrant and any term hereof may be changed, waived, discharged, or terminated only by an instrument in writing signed by the party or holder hereof against which enforcement of such change, waiver, discharge or termination is sought. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning hereof. This Warrant shall be governed by and interpreted under the laws of the State of Oregon.

Section 17. Date. The date of this Warrant is May 9, 1996. This Warrant, in all events, shall be wholly void and of no effect after the close of business on the Expiration Date, except that notwithstanding any other provisions hereof, the provisions of Section 11 shall continue in full force and effect after such date as to any Warrant Shares or other securities issued upon the exercise of this Warrant.

OXIS INTERNATIONAL, INC.
By: _____
Name: _____
Title: _____

ACCEPTED:
- --------

_____

BY:_____

Name:_____
Title:_____
Address:_____

EXHIBIT A TO WARRANT

SUBSCRIPTION FORM

TO BE EXECUTED BY THE REGISTERED HOLDER IF SUCH REGISTERED HOLDER DESIRES TO EXERCISE THIS WARRANT

OXIS INTERNATIONAL, INC.

The undersigned hereby exercises the right to purchase Warrant Shares covered by this Warrant according to the conditions thereof and herewith makes payment of U.S. $_____, the aggregate Warrant Exercise Price of such Warrant Shares in full.

The undersigned further certifies that either: (i) it is not a "U.S. person" (as defined in Regulation S promulgated under the Securities Act of 1933, as amended (the "Securities Act")) and that the Warrant is not being exercised on behalf of a U.S. person; or (ii) the undersigned is providing to the Company herewith a written opinion of counsel to the effect that the Warrant and the Warrant Shares have been registered under the Securities Act or are exempt from registration thereunder.

INVESTOR:

By:_____
Name: _____
Title:_____
Address:_____
_____
_____

Number of Warrant Shares Being Purchased:
_____

Dated:_____, 199___.

EXHIBIT 21 (a)

Subsidiaries of OXIS International, Inc.

As of December 31, 2001, the Company's subsidiaries were as follows:

Name	Jurisdiction of incorporation
OXIS Health Products, Inc.	Delaware
OXIS Therapeutics, Inc.	Delaware
OXIS International S.A.	France
OXIS Acquisition Corporation	Delaware
OXIS Isle of Man Limited	Isle of Man
OXIS Instruments, Inc.	Pennsylvania
OXIS International (UK) Limited	United Kingdom

EXHIBIT 23 (b)

Independent Auditors' Consent

We consent to the incorporation by reference in Registration Statement Nos. 33-64451, 333-32132, and 333-54600 on Form S-8 and in Registration Statement Nos. 33-61087, 333-5921, 333-18041, 333-61993, and 333-40970 on Form S-3 of our report dated March 1, 2001 (which expresses an unqualified opinion and includes an explanatory paragraph relating to the Company's ability to continue as a going concern) appearing in this Annual Report on Form 10-KSB of OXIS International, Inc. for the year ended December 31, 2001.

DELOITTE & TOUCHE LLP

Portland, Oregon
March 28, 2002