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Mallinckrodt
Chemical Works

ANNUAL REPORT

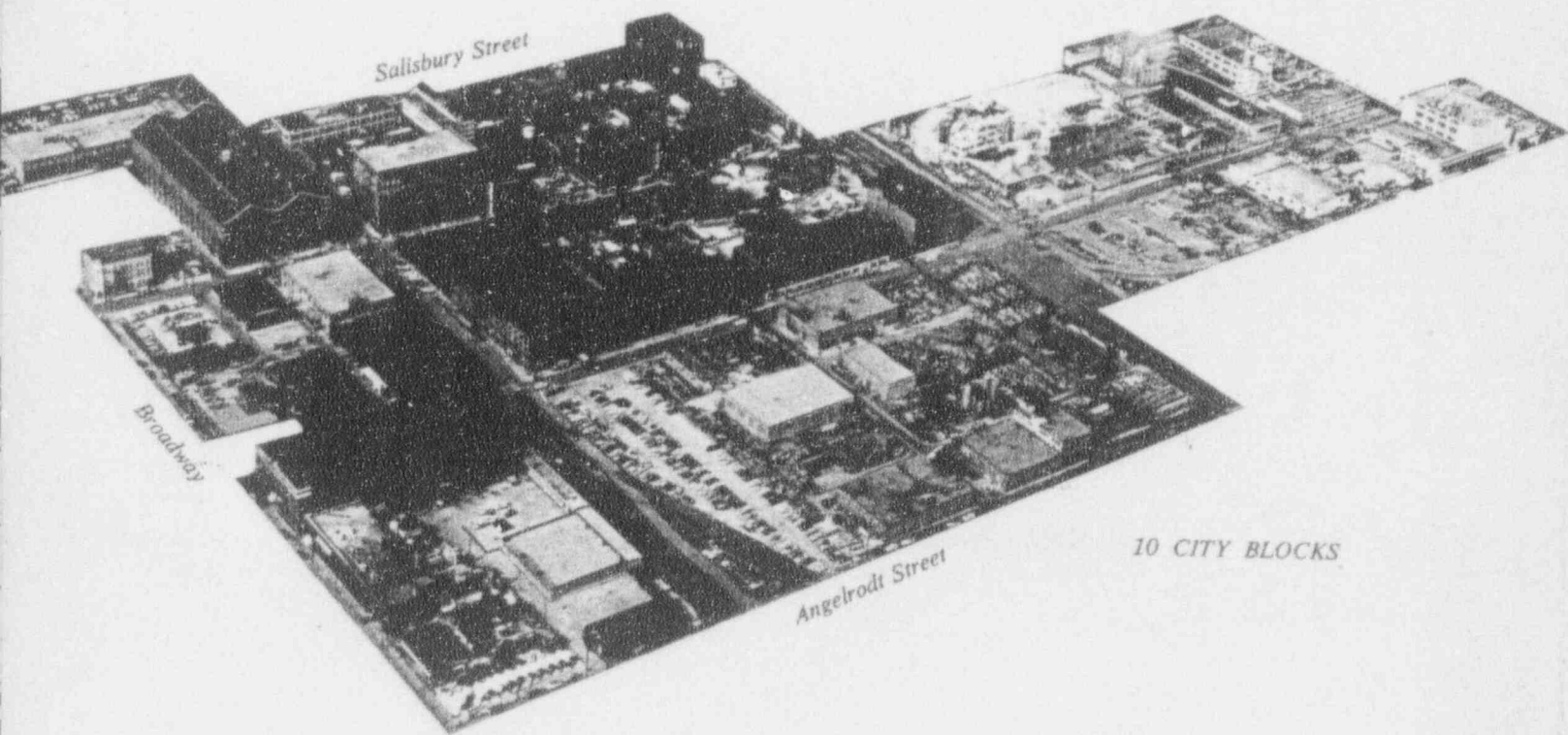
1954

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Air View

OF THE

ST. LOUIS PLANT



General Offices:

Second and Mallinckrodt Streets, St. Louis 7, Mo.
Plants at St. Louis, Mo. and Jersey City, N. J.

Sales Offices:

72 Gold Street, New York 8, N. Y.;
Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio;
Los Angeles, Calif.; Philadelphia, Pa.; San Francisco, Calif.

ANNUAL REPORT *Mallinckrodt* CHEMICAL WORKS

December 31, 1954

DIRECTORS

Edward Mallinckrodt, Jr.

David R. Calhoun, Jr.
President, St. Louis Union Trust Co.

Charlton MacVeagh

Henry V. Farr

John M. Meyer, Jr.
Vice-President, J. P. Morgan & Co., Inc.

Joseph Fistere

John R. Ruhoff

August H. Homeyer

Vernon H. Wallingford

OFFICERS

Edward Mallinckrodt, Jr. . . . *Chairman of the Board*

Norman P. Knowlton *Vice-President*

Charlton MacVeagh . . . *Vice-Chairman of the Board
and Treasurer*

John G. Moore *Vice-President
and Assistant Treasurer*

Joseph Fistere *President*

John R. Ruhoff *Vice-President*

William D. Barry *Vice-President*

Harold E. Thayer *Vice-President*

Francis J. Carr *Vice-President*

Victor H. Knoop *Secretary*

Erwin H. Doht *Vice-President*

Oliver M. Langenberg *Assistant Secretary*

Henry V. Farr *Vice-President*

Russell F. Ritschy *Assistant Secretary*

John E. Gaston *Vice-President*

Harold A. Brinner *Controller*

Counsel: Shepley, Kroeger, Fisse & Shepley, St. Louis

Certified Public Accountants: Price Waterhouse & Co.

Dividend Disbursing Agent: St. Louis Union Trust Co., St. Louis

Transfer Agents: St. Louis Union Trust Co., St. Louis; J. P. Morgan & Co., Inc., N. Y.

Registrars: The Boatmen's National Bank of St. Louis; The Bank of New York, N. Y.

Comparative Financial Summary

	1954	1953
Net Sales*	\$35,768,288	\$36,206,990
Cost of Goods Sold	28,099,408	27,718,493
Selling, General and Administrative Expenses	6,052,852	5,771,283
Research and Development Expenses	1,001,255	1,140,586
Income Before Federal Income Taxes	605,732	1,509,535
Net Income	338,732	719,535
Dividends—Preferred Stock	34,932	34,932
Dividends—Common Stock	285,000	240,000
Current Assets	19,995,371	20,092,174
Current Liabilities	2,433,001	3,154,386
Net Working Capital	17,562,370	16,937,788
Property, Plant and Equipment—Net	8,754,491	7,660,757
Long Term Debt	4,500,000	4,625,000
Preferred Stock—par Value	582,200	582,200
Common Shares Outstanding—\$10 par		
Common Stock Class A	255,000 shs.	180,000 shs.
Common Stock Class B	120,000 shs.	120,000 shs.
Dividends Paid per Share—Common	\$0.80	\$0.80
Capital Surplus	\$ 1,074,537	
Accumulated Income Reinvested	\$17,002,970	\$16,984,170
Book Value per Share—Common	\$58.21	\$66.61

*Includes processing charges accrued by the Company under its contract with the Atomic Energy Commission.

TO THE STOCKHOLDERS:

The results of the Company's operations for 1954 compared with 1953 are summarized on the preceding page. They are given in greater detail in the accompanying financial statements certified by Price Waterhouse & Co.

Net sales for 1954 declined 1.2% from the 1953 level. The percent of sales represented by the processing charges accrued by the Company under its contract with the Atomic Energy Commission was 22.6% in the last year compared with 21.7% in 1953.

Net earnings of the Company were \$238,732 for 1954 compared with \$719,535 for 1953. These 1954 earnings, after deducting dividends on the preferred stock, were equal to 81¢ per share on the 375,000 shares of common stock outstanding on December 31, 1954 as against \$2.28 per share on the 300,000 shares outstanding at the close of the preceding year. This reduction reflected a drop from normal levels in sales of certain pharmaceutical and medicinal chemicals due to inventory cutbacks in the first six months effected by the pharmaceutical industry in general, including the Company's customers. Price cuts due largely to foreign competition in some of the standard products in the Company's general line also affected earnings adversely. Sales for some of the Company's newer products showed, on the other hand, encouraging improvement. Increasing attention is being given to reductions in cost of some of the older line, service type items in the Company's list, and progress was apparent in 1954 although the desired results cannot be expected to show in full until the latter part of this year or the year following.

The year 1954 saw the first full year of charges for the Company's group hospital-medical-surgical plan. Ex-

penses for last year also absorbed increased social security tax payments.

Sales and promotion expenses were maintained at almost the same level as in 1953. The advertising campaigns were, as in the past, directed almost entirely to specific groups of the Company's customers, through trade journals and direct mail.

Expenditures for research and development were also maintained at approximately the 1953 rate. These do not include research work carried on for the Atomic Energy Commission.

New Facilities

The area just south of the Company's plant between Broadway and 2nd Street was acquired in October 1954 on a long-term lease with option to purchase. This comprises in the main a warehouse building of 106,000 sq. ft. and a yard and loading dock accommodating six trucks as well as a railroad siding for three cars. On this land also was constructed a new 8,500 sq. ft. fire-proof warehouse building. In this area will be concentrated all of the shipping and receiving operations of the St. Louis plant, which will allow not only a more economical operation, but the release of certain leased warehouse space in the city outside of the Company's plant area.

First Public Financing

In March 1954, the Company registered with the Securities and Exchange Commission and issued and sold to the public through a group of St. Louis underwriters a new issue of 75,000 shares of its Class A common stock (non-voting except as to certain changes in authorized shares of capital stock). The price to the

public of this stock was \$26.50 per share and the proceeds to the Company (before deducting expenses, payable by the Company) amounted to \$24.70 per share. The total number of shares purchased at the offering price by employees of the Company including officers and directors, was approximately 14,300 shares. The number of employees subscribing was approximately 400. No provision was made by the Company for advancing funds to these employees for such purchase.

The above-mentioned issue of Class A common stock was the first public offering of securities of Mallinckrodt Chemical Works and therefore the related registration statement and prospectus constituted the first description published of the business and properties of the Company.

In view of the fact that the annual report for 1954 is the first such report to be published, there has been included, following the notes to the financial statements, a descriptive summary of the business and properties of the Company.

On March 2, 1954, dividends were declared payable on April 1, 1954, to shareholders of record March 15, 1954, of 20¢ on each of the 180,000 shares of Class A common stock and 120,000 shares of Class B common stock outstanding on such record date. Three additional dividends of 20¢ were declared during the balance of the year on each of the 255,000 shares of Class A common stock outstanding after April 1, 1954, and on each of the 120,000 shares of Class B common stock, the outstanding amount of which was not increased during the year.

Uranium Processing

The Company undertook initial work in the atomic energy program in 1942. Since that time, its participation in the program has progressively increased.

On October 12, 1954, the Atomic Energy Commission announced that a \$33,000,000 expansion of the uranium processing facilities under the Company's operation would be constructed by the Commission on a 200-acre site located in the Weldon Spring Ordnance

Plant area in St. Charles County, about 30 miles west of the Company's main plant, and that the Commission would spend an additional \$6,500,000 to enlarge uranium refining facilities at the Company's main plant. The Commission also stated that the new facilities would be built over a three-year period.

The Company is now in the course of negotiating the contract for the continuing and expanded uranium processing work, which it is expected will be, at the request of the Atomic Energy Commission, on a cost-plus-fixed-fee basis.

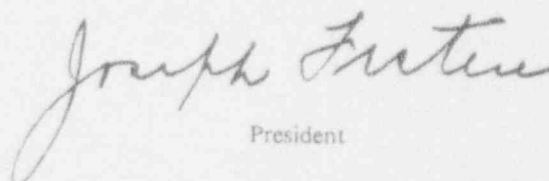
Stock Option Plan

A restricted stock option plan for key employees of the Company was approved on January 18, 1955, and 25,000 shares of authorized but unissued Class A common stock were allocated for this purpose. As of this date, no options have been granted under the plan.

Changes in Capitalization

At a special meeting held on February 7, 1955, the shareholders adopted an amendment to the Articles of Incorporation which reduced from \$100 to \$50 the par value of the authorized shares of the preferred stock of the Company, increased from 30,000 to 100,000 the number of shares of preferred stock which it has authority to issue, and converted each of the 5,822 previously outstanding shares of 6% Cumulative Preferred Stock, Series A, having a par value of \$100, into two shares of 6% Cumulative Preferred Stock, Series B, having a par value of \$50 each. The amendment became effective February 23, 1955. This action had the effect of providing authorized shares of preferred stock of a denomination believed to have greater market acceptability in the event of financing through the medium of preferred stock.

The Company is proud of the fine record of loyalty and service of all of its employees now numbering more than 2,600 and is glad to express its appreciation for their high standards of performance in 1954 as in prior years.


President

AUDITORS'
REPORT

March 11, 1955

To the Board of Directors of
Mallinckrodt Chemical Works

In our opinion, the accompanying financial statements present fairly the financial position of Mallinckrodt Chemical Works at December 31, 1954 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Our examination of such statements was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Price Waterhouse + Co.

Mallinckrodt

COMPARATIVE BALANCE SHEET

Assets

	1954	1953
CURRENT ASSETS:		
Cash.....	\$ 1,672,303	\$ 3,708,328
United States Government securities, at cost (approximate market)...	997,560	168,000
Accounts receivable		
Government.....	1,053,987	604,841
Other.....	2,571,219	2,592,593
Allowance for doubtful accounts, cash discounts, and other allowances	(100,000)	(100,000)
Inventories (Note 1)		
Raw materials and packaging supplies.....	3,257,172	3,251,542
Work in process.....	1,828,488	1,880,557
Finished products.....	7,505,369	6,904,124
Mechanical, laboratory, and other supplies, at cost.....	941,507	894,523
Prepaid insurance, taxes, and other expenses.....	267,766	187,666
	<u>\$19,995,371</u>	<u>\$20,092,174</u>
INVESTMENTS:		
Mallinckrodt Chemical Works Limited, at cost (Note 2).....	\$ 387,473	\$ 387,473
Other.....	106,821	106,736
	<u>\$ 494,294</u>	<u>\$ 494,209</u>
PROPERTIES, at cost:		
Buildings, machinery, and equipment.....	\$12,862,086	\$11,993,787
Less—Depreciation and amortization.....	5,706,547	5,141,659
	<u>\$ 7,155,539</u>	<u>\$ 6,852,128</u>
Land.....	644,105	617,961
Construction in progress.....	954,847	190,668
	<u>\$ 8,754,491</u>	<u>\$ 7,660,757</u>
PATENTS AND TRADE-MARKS, less amortization of \$63,878 and \$56,788, respectively.....		
	<u>\$ 98,552</u>	<u>\$ 98,616</u>
	<u>\$29,342,708</u>	<u>\$28,345,756</u>

Chemical Works

DECEMBER 31, 1954 AND 1953

Liabilities and Stockholders' Investment

	1954	1953
CURRENT LIABILITIES:		
Note payable—amount due within one year.....	\$ 125,000	\$ 125,000
Accounts payable.....	1,398,393	1,531,054
Salaries and wages.....	294,983	276,359
Estimated federal income taxes.....	315,601	841,363
Dividends payable.....	83,733	113,733
Other current and accrued liabilities.....	215,291	266,877
	<u>\$ 2,433,001</u>	<u>\$ 3,154,386</u>
LONG TERM NOTE PAYABLE—unsecured (excluding amount due within one year) (Note 3).....		
	<u>\$ 4,500,000</u>	<u>\$ 4,625,000</u>
STOCKHOLDERS' INVESTMENT:		
Preferred stock, cumulative, \$100 par value (Note 4)		
Authorized, 30,000 shares		
Issued, 5,822 shares of Series A, 6%.....	\$ 582,200	\$ 582,200
Common stock, \$10 par value (Note 4)		
Class A		
Authorized, 360,000 shares		
Issued, 255,000 and 180,000 shares, respectively.....	2,550,000	1,800,000
Class B		
Authorized, 240,000 shares		
Issued, 120,000 shares.....	1,200,000	1,200,000
Amount paid in for capital stock in excess of par value.....	1,074,537	
Accumulated income reinvested in the business (see accompanying state- ment) (Note 3).....	17,002,970	16,984,170
	<u>\$22,409,707</u>	<u>\$20,566,370</u>
	<u>\$29,342,708</u>	<u>\$28,345,756</u>

Mallinckrodt Chemical Works

STATEMENTS OF INCOME AND ACCUMULATED INCOME REINVESTED IN THE BUSINESS FOR THE TWO YEARS ENDED DECEMBER 31, 1954

	1954	1953
Sales, net*	\$35,768,288	\$36,206,990
Cost of goods sold	28,099,408	27,718,493
Gross profit	\$ 7,668,880	\$ 8,488,497
Selling, general, and administrative expenses	\$ 6,052,852	\$ 5,771,283
Research and development expenses (Note 5)	1,001,255	1,140,586
	\$ 7,054,107	\$ 6,911,869
Income from operations	\$ 614,773	\$ 1,576,628
Other income and (deductions):		
Interest on unsecured note	\$ (157,148)	\$ (161,367)
Discount on purchases and miscellaneous, net	148,107	94,274
	\$ (9,041)	\$ (67,093)
Income before estimated federal income taxes	\$ 605,732	\$ 1,509,535
Estimated federal income taxes	267,000	790,000
Net income for the year	\$ 338,732	\$ 719,535
Accumulated income reinvested in the business:		
Balance at beginning of the year	16,984,170	16,539,567
	\$17,322,902	\$17,259,102
Dividends declared		
Preferred stock, Series A, 6%	\$ 34,932	\$ 34,932
Common stock		
Class A	189,000	144,000
Class B	96,000	96,000
	\$ 319,932	\$ 274,932
Balance at end of the year (Note 3)	\$17,002,970	\$16,984,170

Costs and expenses include depreciation and amortization of \$629,057 in 1954 and \$559,270 in 1953.

*Includes processing charges accrued by the company under its contract with the Atomic Energy Commission.

Mallinckrodt Chemical Works

NOTES TO FINANCIAL STATEMENTS

NOTE 1—Inventories:

Inventories were valued at the lower of cost (first-in first-out method) or market, except for three basic raw materials carried at \$812,693 and \$753,564 at December 31, 1954 and 1953, respectively, for which the last-in first-out method was used.

NOTE 2—Investment in Canadian Subsidiary:

The company's net equity in Mallinckrodt Chemical Works Limited amounted to \$976,100 (Canadian) at December 31, 1954. Losses of \$14,804 and \$74,036 (Canadian) were sustained by the subsidiary in 1954 and 1953, respectively, and no dividends were declared during this period.

NOTE 3—Long-Term Debt and Dividend Restrictions:

The unsecured note payable to The Prudential Insurance Company of America, which bears interest at 3½% per annum, was issued under the terms of an Agreement dated March 27, 1951. The Agreement requires prepayments of \$125,000 in each of the years 1955 and 1956 and \$250,000 in each year thereafter to maturity. The balance of the note is payable on April 1, 1971.

The Agreement relating to the unsecured note also provides, among other things, for certain restrictions against the payment of dividends on common stock (other than dividends payable in common stock). Under one of such restrictions, an amount equal to the balance of accumulated income reinvested at December 31, 1950, plus 30% of subsequent earnings applicable to the common stock, and less the equivalent of amounts received subsequent to December 31, 1950 as the proceeds of the sale of shares of any class of the company's stock (except any portion of such amount applied to the prepayment of the unsecured note), is restricted against the payment of dividends on common stock. The amount of accumulated income reinvested, so restricted under this provision at December 31, 1954, was \$14,292,488.

NOTE 4—Capitalization Changes Subsequent to December 31, 1954:

In accordance with an amendment to the Articles of Incorporation effective February 23, 1955, the par value of preferred stock was changed from \$100 to \$50 per share, and the number of shares authorized was changed from 30,000 to 100,000. The amendment also provided for the conversion of the presently outstanding 5,822 shares of 6% Cumulative Preferred Stock, Series A, par value \$100 into 11,644 shares of 6% Cumulative Preferred Stock, Series B, par value \$50.

A stock option plan for key employees of the company was approved by the Stockholders on January 18, 1955, and

25,000 shares of authorized but unissued Class A common stock were reserved for allocation by a committee composed of directors who will not participate in the plan. As of this date, no options have been granted under the plan.

NOTE 5—Research and Development Expenses:

It is the policy of the company to charge research expenses with the cost of labor, materials, and supplies and to credit research expenses with the salable production from pilot plant operations. A summary of the expenses for the years 1954 and 1953 follows:

	1954	1953
Gross expenses, including cost of pilot plant operations	\$1,260,010	\$1,227,417
Less—Credits for salable production from pilot plant operations	258,755	86,831
Net expenses per statement of income	<u>\$1,001,255</u>	<u>\$1,140,586</u>

NOTE 6—Pension Plan:

The company has a retirement income plan available on a contributory basis to all eligible employees. Payments thereunder during the years 1954 and 1953 amounted to \$323,018 and \$360,812, respectively. The amount for 1953 included past service cost of \$82,000 representing the estimated annual payment required to fund the past service over the ten-year period 1951 to 1960, inclusive. Because amendment of the plan was in progress, the 1954 payment did not include an amount applicable to past service cost. Furthermore, payments during 1954 were further reduced by approximately \$50,000, representing the application to current service costs of excess contributions made in prior years.

The single sum payment required to fund the past service benefits under the plan, after the amendment mentioned above, was estimated to be approximately \$1,250,000 at December 31, 1954. The company plans to fund this amount by 16 annual payments of \$81,000 each commencing in 1955. The estimated contribution for 1955, including the past service contribution, is approximately \$475,000. Under the provisions of the plan the company reserves the right to alter or discontinue the plan at any time.

NOTE 7—Renegotiation:

The company has received preliminary clearance for the year 1951 and final clearance for the year 1952 from the Renegotiation Board. Notice of nonassignment has been received for the year 1953, and the renegotiation report for 1954 has not been filed at this date. Officials of the company are of the opinion that no refund should be required for any of these years.

Business and Properties

DESCRIPTIVE SUMMARY

Mallinckrodt Chemical Works was founded in 1867 by three brothers, Gustav, Edward and Otto Mallinckrodt, and was incorporated under the laws of Missouri in 1882. Edward Mallinckrodt was President or Chairman of the Board from 1882 until 1928. His son, Edward Mallinckrodt, Jr., succeeded him as Chairman of the Board, which position he occupies today. The Company is one of the leading manufacturers in this country of fine chemicals and is also engaged in the processing, under contract with the Atomic Energy Commission, of uranium-containing materials into uranium metal and uranium compounds.

Commercial Business

The commercial business of Mallinckrodt Chemical Works, not including the above-mentioned uranium processing, consists of the manufacture of chemicals for sale to a wide range of medicinal, pharmaceutical, industrial, graphic arts, educational and institutional customers (including other chemical companies) and of the resale to such customers of purchased chemicals distributed under its own label after such testing and repackaging as are necessary and appropriate.

The major segment of the Company's commercial business is converting, processing or refining purchased raw materials into a variety of fine chemicals. Of these, the products accounting for the largest dollar volume of sales are manufactured in facilities which have been specially designed for their production. A large number of the chemicals produced in lesser dollar volume are manufactured in multi-purpose equipment. These facilities frequently can be converted to the manufacture of new products in a comparatively short time. This flexibility has, in the past, produced a high degree of stability in manufacturing operations.

The Company's present list, including both manufactured items and those purchased for resale, includes approximately 1,500 products which are sold in containers of various sizes and types to about 9,000 customers.

Medicinal and Pharmaceutical Chemicals

The largest dollar volume of the Company's commercial sales is derived from medicinal and pharmaceutical chemicals which include anesthetics, analgesics, x-ray contrast media and other high quality products of which the Company has long been recognized as one of the leading producers. Significant items manufactured and sold by the Company are narcotics (produced under close Government supervision), ether for anesthesia, Urokon* (an x-ray contrast medium), phenobarbital, theophylline, barium sulfate for x-ray diagnosis, soda lime, cyclopropane, magnesium trisilicate, bismuth salts, iodides, citrates, and mercurials. The important items purchased for resale include the vitamins, sulfonamides, bromides, and salicylates. The principal customers for these manufactured and purchased chemicals are pharmaceutical manufacturers, whose purchases from the Company account for the major part of its dollar volume of commercial sales of these products. Other customers are wholesale druggists, drug distributors, retail druggists, physician supply houses, and hospitals. Most of these items reach the general public in medicinal specialties, proprietary products sold under the label of others, or in physicians' prescriptions.

Industrial Chemicals

About a third of the Company's dollar volume of commercial sales is made to industrial customers who use the Company's products in a variety of ways, including the production of electronic equipment, soft drinks, mixed feed for animals, lubricating greases, paints and varnishes, hearing aid and miniature dry cell batteries, turf fungicides, cosmetics, other toilet preparations, and many other products.

Graphic Arts Products

The Company supplies an extensive line of products for use in the graphic arts field, for sale to customers

*A registered trademark of the Company.

who include photoengravers, lithographers, photo-finishers, and the motion picture industry. Among the principal items so offered are cold top enamel, etching powder, prepared rapid fixing solutions, packaged prepared developers and fixers, and other specialties as well as bulk chemicals.

Analytical Reagents

Shortly before World War I, the Company pioneered the commercial development in the United States of analytical reagents which are high purity chemicals essential for analysis and testing in both research and production work. Today, the Company offers a long line of analytical reagents ranging from simple compounds to highly specialized organic and inorganic substances. They are sold in increasing volume, mostly for use in industrial, university, research, hospital and other institutional laboratories.

Competition

Commercial sales of the Company are made in highly competitive markets. Its products are sold in competition not only with the same or similar products of other companies, but also with products having the same end use.

In recent years competition has become more intense. The capacity of domestic producers has been expanded and the volume of imports from foreign countries has steadily increased. These competitive conditions are expected to continue.

Distribution

Most of the Company's products are distributed on a nationwide basis. For the year 1954, 4.8% of the Company's commercial sales were made in the export market. Approximately 76% of commercial sales for 1954 were made directly to the using industries, while the remaining commercial sales were made largely to wholesale distributors.

For sales purposes, the country is divided into the Eastern Division and the Western Division, with headquarters in New York City and St. Louis, respectively. Sales offices are maintained in Chicago, Cincinnati, Cleveland, Los Angeles, San Francisco, and Philadelphia. There are also resident salesmen in other important trade areas. Stocks of finished goods are maintained in warehouses in St. Louis, New York City, Jersey City, and Los Angeles.

Inventories

Nearly one hundred and twenty-five major raw materials are required in the manufacture of the Company's chemicals. Some of these, such as opium and gallnuts, are purchased on an annual basis, as they are imported and their production is seasonal. In general there appears to be no serious shortage in the supply of raw materials which the Company uses in the manufacture of its chemicals.

Because a large portion of the Company's business requires prompt delivery, substantial inventories of finished products, work in process, and raw materials are maintained, which cannot be protected by hedging or otherwise against price fluctuations.

Uranium Processing

The function of the Company under its contract with the Atomic Energy Commission is that of processing uranium-containing materials. Processing charges are currently on a unit price basis. Such operations are carried on in Government-owned plants located upon the land owned by the Company. The Government retains title at all times to the uranium-containing materials and the products resulting therefrom.

The initial work undertaken by the Company in the atomic energy program is summarized in the Smyth Report "Atomic Energy for Military Purposes", published in 1945:

"Early in May 1942, arrangements were completed with the Mallinckrodt Chemical Works in St. Louis to put the new grade of oxide through an ether extraction process on a production basis for a further reduction in impurity content and to deliver the final product as brown dioxide. Deliveries started in July 1942 at a rate of 30 tons a month."

The Smyth Report further comments on this operation as follows:

"This oxide is now used as a starting point for all metal production, and no higher degree of purity can be expected on a commercial scale. In fact, it was a remarkable achievement to have developed and put into production on a scale of the order of one ton per day a process for transforming grossly impure commercial oxide to oxide of a degree of purity seldom achieved even on a laboratory scale."

During and after World War II, the Company's participation in the field of atomic energy was increased. Additional agreements were entered into with the Atomic Energy Commission which provided for an

expanded program in additional Government-owned facilities, constructed on Company property.

The most recent contract became effective on January 1, 1953, and, as was the case with the immediately preceding contract, is for a period of three years. It can be terminated at the convenience of the Government, as is customary with defense contracts with the United States Government.

As stated in the President's Letter, on October 12, 1954, the Atomic Energy Commission announced that a \$33,000,000 expansion of the uranium processing facilities under the Company's operation would be constructed by the Commission on a 200-acre site located in the Weldon Spring Ordnance Plant area in St. Charles County, about 30 miles west of the Company's main plant, and that the Commission would spend an additional \$6,500,000 to enlarge uranium refining facilities at the Company's main plant. The Commission also stated that the new facilities would be built over a three-year period.

The Company is now in the course of negotiating the contract for the continuing and expanded uranium processing work, which it is expected will be, at the request of the Atomic Energy Commission, on a cost-plus-fixed-fee basis.

Employee Relations

On December 31, 1954, the Company had approximately 2,600 employees. The Company has had no strikes or work stoppages since 1918, and the rate of employment turnover is less than half as great as that in the chemical industry generally.

The Company has a contract with the Independent Union of Chemical Plant Workers, which represents approximately 1,130 wage employees at the St. Louis plant, and it also has a contract with Mallinckrodt Chemical Labor Union, which represents approximately 195 wage employees at the Jersey City plant. In addition, the Company has contracts with: the International Guards Union of America, Local No. 45; the International Brotherhood of Firemen, Oilers and Maintenance Men, Local No. 6, A. F. L.; and the International Brotherhood of Operating Engineers, Local No. 2, A. F. L.

The Company has had a contributory pension plan since 1931 under a group annuity contract with the Sun Life Assurance Company of Canada. The plan has been amended from time to time with respect to eligibility of employees, retirement ages, benefits adjusted to Social Security, and the maximum amounts of salaries upon which retirement benefits are computed.

Employees are also provided a group life insurance plan which makes available term insurance protection. The Company pays the entire cost of the first \$1,500 of insurance, and the employees contribute to the cost of all insurance over that amount.

The Company also extends a group hospital-medical-surgical plan to salaried and wage employees on a non-contributory basis.

Mallinckrodt Chemical Works Limited

Mallinckrodt Chemical Works Limited, now a wholly-owned subsidiary of the Company, has been engaged in business in Canada since 1913. It sells to customers of the same general classes as those of the Company a line of fine chemicals generally similar to the line sold by the Company, some of which are purchased by it from the Company and from other manufacturers, and some of which are manufactured under its own supervision. Its business is carried on in leased properties. Its sales in 1954 were approximately \$1,175,000 compared with \$1,359,000 in 1953. Loss of \$14,804 in 1954 compared with a loss of \$74,036 in the preceding year.

Properties

The Company owns a tract of approximately 35 acres of land in north St. Louis upon which are located the principal manufacturing buildings, warehouses, shops, boiler plant, administrative office, and laboratories of the Company, comprising about 975,000 square feet of floor space. The Government-owned plants are also located on a portion of this tract. Rail service is supplied by the Terminal Railroad Association and Wabash Railroad.

The Company's building units in St. Louis, approximately 55 in number, are of various ages and types of construction. Most of the newer buildings are of steel frame construction with brick curtain walls. A number of the older buildings have been structurally rehabilitated, and the Company plans similarly to renovate several more of its older buildings. Although the older buildings are not of modern construction and design, the Company is able to use them for manufacturing purposes without increased cost of operations.

In Jersey City, New Jersey, the Company owns 13.3 acres of land. This site, located at 223 West Side Avenue, contains manufacturing plants, warehouses, a boiler plant, a laboratory, and an office, totaling approximately 172,000 square feet of floor space. In New York City,

the Company occupies a building used as a combination sales office and warehouse aggregating approximately 34,000 square feet. Part of this New York City property is owned by the Company, while the balance is held under lease.

The warehouse and sales office in Los Angeles occupied by the Company and containing approximately 25,000 square feet is held under a long term lease.

Plant and Property Improvements

Net additions to the Company's property, plant and equipment account during the period January 1, 1946, through December 31, 1954, amounting to \$8,470,276, are set forth below:

Year	Additions	Retirements (1)	Net Additions
1946.....	\$ 709,529	\$214,685	\$ 494,844
1947.....	1,422,425	37,099	1,385,326
1948.....	1,134,529	49,057	1,085,472
1949.....	811,160	42,095	769,065
1950.....	589,650	123,835	465,815
1951.....	824,692	137,202	687,490
1952.....	1,131,027	79,244	1,051,783
1953.....	983,721	111,862	871,859
1954.....	1,723,347	64,725	1,658,622

(1) Excludes annual depreciation.

In terms of physical expansion since January 1, 1946, expenditures made to increase the Company's facilities have brought about a 31% gain, amounting to 274,500 square feet, in plant floor space at the plants in St. Louis and Jersey City.

In St. Louis, this expansion has been represented by six new manufacturing buildings, complete with utilities and roads; a building of 80,000 square feet of floor space which provides both consolidation of raw material storage and an integrated maintenance shop; a new three-story building of 35,000 square feet for subdividing and packaging dry chemicals; and 75% more laboratory space than was available in 1946. Steam generating capacity in the boiler plant has been increased by 67%. Sizable additions have been made to the equipment account, as new processes have been installed and old processes have been re-engineered and renovated. Spare equipment, which had previously been stored at many different points in the plant, has been consolidated in new storage space. Land in St. Louis acquired since January 1, 1946, includes 9.5 acres adjoining the Company's plant. In 1954 the Company also leased on a

long term basis, with an option to purchase, the tract of land and a three-story and basement building to provide 106,000 square feet of floor space mentioned in the President's Letter.

At Jersey City, two warehouses were constructed in 1949 and 1950, and a new office and warehouse building, totaling 11,000 square feet, were completed in 1954. A new laboratory is under construction at Jersey City which when completely equipped will cost an estimated \$80,000.

Research and Development

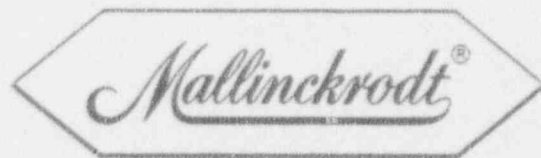
Objectives of the Company's research and development program are the development of new products, the development of new uses for existing products, and the improvement of existing products and processes. Set forth below are the expenditures on research and development since 1946, after giving effect to the cost of labor, materials and supplies charged to pilot plant operations and to credits for production therefrom.

Research and Development Expenditures (Excluding Research under A.E.C. Contracts)

Year	Amount
1946.....	\$ 11,472
1947.....	604,243
1948.....	546,823
1949.....	621,641
1950.....	563,221
1951.....	585,927
1952.....	812,389
1953.....	1,140,586
1954.....	1,001,255

Among the new products that have been developed during the past several years are: x-ray contrast media, medicinal and pharmaceutical chemicals, chemicals for the radio and electronic industry, turf fungicides, and commercial stearates. In 1954, high-grade misch metal (a mixture of rare earth metals) was produced by the Company on a commercial basis for use as an alloying agent in magnesium and stainless steel products. The Company is continuing its research and development work in the rare earths field which was initiated in 1952. Also, substantial savings have been made in the manufacturing costs of certain of the Company's existing products.

Today, of the more than 2,600 employees of the Company, approximately 10% are graduates of colleges or universities with degrees in chemistry or chemical engineering.



Second and Mallinckrodt Streets, St. Louis 7, Mo. • 72 Gold Street, New York 8, N. Y.
CHICAGO • CINCINNATI • CLEVELAND • LOS ANGELES • MONTREAL • PHILADELPHIA • SAN FRANCISCO

*Manufacturers of chemicals for pharmaceutical, medicinal,
industrial, photographic and analytical uses.*

ATTACHMENT 1

