TITANIUM DIOXIDE FROM BELGIUM, FRANCE, THE UNITED KINGDOM, AND THE FEDERAL REPUBLIC OF GERMANY

Determination of No Injury
in Investigations Nos. AA1921-206,
AA1921-207, AA1921-208, and
AA1921-209 Under the
Antidumping Act,
1921, as Amended

USITC PUBLICATION 1009

NOVEMBER 1979

United States International Trade Commission / Washington, D.C. 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Joseph O. Parker, Chairman
Bill Alberger, Vice Chairman
George M. Moore
Catherine Bedell
Paula Stern

Kenneth R. Mason, Secretary to the Commission

Investigator: Bruce Cates

Assisted by:

Advisory Attorney: William Gearhart
Commodity Analyst: Larry Johnson
Economist: Mike Youssef

Supervisory Investigator: John M. MacHatton

Address all communications to
Office of the Secretary
United States International Trade Commission
Washington D.C. 20436

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CONTACT: Hal Sundstrom
(202) 523-0161

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USITC FINDS NO INJURY TO U.S. INDUSTRY FROM IMPORTS OF TITANIUM DIOXIDE FROM BELGIUM, FRANCE, THE UNITED KINGDOM, AND THE FEDERAL REPUBLIC OF GERMANY

The United States International Trade Commission today reported to the Secretary of the Treasury its determination, by a 4-to-1 vote, that an industry in the United States is not being injured, is not likely to be injured, and is not prevented from being established by reason of the importation into the United States of titanium dioxide from Belgium, France, the United Kingdom, and the Federal Republic of Germany at less than fair value (LTFV) within the meaning of the Antidumping Act, 1921, as amended.

Vice Chairman Bill Alberger and Commissioners George M. Moore, Catherine Bedell, and Paula Stern voted in the negative and constituted the Commission majority. Chairman Joseph O. Parker determined in the affirmative.

The Commission's investigations were instituted on August 23, 1979, after receipt of advice from the Treasury Department that titanium dioxide from Belgium, France, the United Kingdom, and the Federal Republic of Germany, with the exception of that sold by Bayer AG of the Federal Republic of Germany and ceramic grades of titanium dioxide sold by LaPorte Industries, Ltd. of the United Kingdom, is being, or is likely to be, sold at LTFV within the meaning of the

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Antidumping Act, 1921. The Treasury investigation covered virtually all exports of the product to the United States from the four countries during the 6-month period from May 1, 1978, through October 31, 1978.

The Commission's public report, Titanium Dioxide From Belgium, France, the United Kingdom, and the Federal Republic of Germany (USITC Publication 1009), contains the views of the Commissioners in the investigation (Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209). Copies may be obtained by calling (202) 523-5178; from the Office of the Secretary, 701 E Street NW., Washington, D.C. 20436; or at the USITC regional office, 6 World Trade Center, Suite 629, New York, N.Y. 10048, telephone (212) 466-5598.

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

(AA1921-206, AA1921-207, AA1921-208, and AA1921-209)

TITANIUM DIOXIDE FROM BELGIUM, FRANCE, THE UNITED KINGDOM AND THE FEDERAL REPUBLIC OF GERMANY

Determination of No Injury

Determination

On the basis of information developed during the course of investigations Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209, the Commission (Chairman Parker dissenting) determines that an industry in the United States is not being injured, is not likely to be injured, and is not prevented from being established, by reason of the importation of titanium dioxide from Belgium, France, the United Kingdom or the Federal Republic of Germany, provided for in item 473.70 of the Tariff Schedules of the United States, which the Department of the Treasury has determined is being, or is likely to be, sold at less than fair value within the meaning of the Antidumping Act, 1921, as amended (19 U.S.C. 160 et seq.).

Procedural background

On August 7, 1979, the United States International Trade Commission received advice from the Department of the Treasury that titanium dioxide from Belgium, France, the United Kingdom and the Federal Republic of Germany, with the exception of that sold by Bayer AG, of the Federal Republic of Germany and ceramic grades sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold in the United States at less than fair value (LTFV) within the meaning of the Antidumping Act, 1921, as amended. Accordingly, on August 23, 1979, the Commission voted to institute investigations Nos. AA1921-206 (titanium dioxide from Belgium) AA1921-207 (titanium dioxide from France), AA1921-208 (titanium dioxide from the United Kingdom) and AA1921-209 (titanium dioxide from the Federal Republic of Germany) under section 201(a) of said act, to determine whether an industry in the United States is being or is likely to

be injured, or is prevented from being established, by reason of the importation of such merchandise into the United States.

In connection with the investigations, a public hearing was held in Washington, D.C., on September 27 and September 28, 1979. Notice of the institution of the investigations and the public hearing was given by posting copies of the notice at the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and at the Commission's office in New York City, and by publishing the notice in the Federal Register of August 29, 1979 (44 F.R. 50663).

The Treasury Department instituted its investigations after receiving a complaint filed on September 18, 1978, from counsel acting on behalf of SCM Corp., N.Y., N.Y. Treasury's notices of withholding of appraisement and determinations of sales at less than fair value were published in the Federal Register of August 10, 1979 (44 F.R. 47196-47204).

In arriving at its determinations, the Commission gave due consideration to all written submissions from interested parties and information adduced at the hearing as well as information obtained by the Commission's staff from questionnaires, personal interviews, and other sources.

STATEMENT OF REASONS OF VICE CHAIRMAN BILL ALBERGER AND COMMISSIONERS GEORGE M. MOORE, CATHERINE BEDELL, AND PAULA STERN

We determine that an industry in the United States is not being and is not likely to be injured, and is not prevented from being established, by reason of the importation of titanium dioxide from Belgium, France, the United Kingdom, and the Federal Republic of Germany (West Germany) into the United States which the Secretary of the Treasury (Treasury) has determined is being, or is likely to be, sold at less than fair value (LTFV). 1/

THE IMPORTED ARTICLE AND THE DOMESTIC INDUSTRY

Titanium dioxide is a white, solid, metallic oxide which is the whitest, most inert, and most opaque of all commercial pigments. It is used to whiten, brighten, and opacify paints, paper, plastics, inks, synthetic fibers, and rubber compounds. Six firms using ten plants currently produce titanium dioxide in the United States: E. I. du Pont de Nemours & Co., Inc. (Du Pont), SCM Corp. (SCM), Kerr-McGee Corp., American Cyanamid Co., Gulf & Western, and N.L. Industries (N.L.).

Treasury's investigation of imports of titanium dioxide covered the six-month period from May 1 to October 31, 1978. Treasury examined virtually all of the transactions involving titanium dioxide exports to the United

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1/ No one alleged, and there is no information supporting a finding, that an industry is prevented from being established by reason of imports of such merchandise. Therefore, the issue of "prevention of establishment" will not be further discussed.

Our determination is the same whether the subject imports from the respective countries are considered separately or are cumulated. We have therefore made a negative determination.

States from Belgium and France, 95 percent of the value of exports entering the United States from the United Kingdom, and 65 percent of the subject exports from West Germany during the period. 2/ It found weighted average LTFV margins which ranged from 0.3 percent to 32.4 percent of the fair market value of the merchandise, with most margins in the lower end of the range. 3/

NO INJURY OR LIKELIHOOD OF INJURY BY REASON OF LTFV SALES

In making our determination in these investigations, we looked for price suppression, loss of customers by U.S. producers to foreign manufacturers selling at less than fair value, and increased penetration of the relevant U.S. market by imports. In addition, we also examined domestic production, inventories, capacity utilization, employment levels, profitability, and expansion plans. In order to understand these indicators, we first examined the conditions of competition in this industry in the United States.

The conditions of domestic competition

About 85 percent of the titanium dioxide consumed in the United States is presently produced in domestic facilities. Careful analysis of weighted average selling prices of Du Pont, SCM, and N.L. on a monthly basis from January 1976 through July 1979 shows that each of these firms initiated both price increases and decreases during the period. However, no price change held unless Du Pont initiated it or soon followed the lead of the others. Du Pont, with a market share of a third to a half, is simply too significant a

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2/ Treasury's LTFV determination excluded exports sold by Bayer AG of West Germany and ceramic grades of titanium dioxide sold by Laporte Industries of the United Kingdom. Treasury defined ceramic grades of titanium dioxide as being titanium dioxide pigments, provided for in item 473.70 of the Tariff Schedules of the United States, having an average minimum particle size exceeding eight microns in diameter.

3/ See table 8 on p. A-21 of the accompanying report.

factor for other producers to be able to ignore its actions. Du Pont has a substantially larger productive capacity than Belgium, France, the United Kingdom, and West Germany individually and can almost equal their total annual output.

In addition to its dominant market position, Du Pont stands out in other ways. It has consistently been the industry innovator, pioneering the modern chloride process and subsequent improvements on it. This process uses cheaper ore, achieves greater efficiency, and produces far less pollutant than the older sulfate process that it has replaced in all plants built since 1959. As environmental regulations have raised the cost of disposal of pollutants and useless byproducts produced in the sulfate process, the comparative advantage of the chloride process has grown even greater. Du Pont has licensed its chloride process using high-grade feedstock to other firms. However, it has reserved for itself the low-grade chloride process that allows the use of low-cost ilmenite as a feedstock. This has resulted in each of Du Pont's four plants, regardless of size, having mill costs below those of any of the six plants of its domestic competitors.

The changing role of N.L. constitutes another factor crucial to an understanding of the domestic industry. Having experienced labor and environmental problems intermittently during the last five years, N.L. closed a major plant in 1978 and temporarily increased its reliance on imports from the subject foreign producers to supply a third to a half of its domestic sales of titanium dioxide during 1977. In 1976, 1978, and 1979, 20 to 30 percent of its sales were from foreign sources covered by this investigation. Since becoming a significant importer, N.L.'s total of imports plus domestic production has not exceeded its peak domestic production recorded in 1974

before it began to import foreign-produced titanium dioxide. Because of N.L.'s peculiar situation as both producer and importer, its total reliance on the sulfate process in domestic operations, and its significant labor and environmental difficulties, the inclusion of N.L. in the domestic industry's aggregate data often obscured rather than illuminated the implications of the data.

Economic indicators

We could find no persuasive case for injury, or likelihood thereof, to the domestic industry by reason of LTFV sales. We believe that any injury which may exist is not related to LTFV imports from the four countries in question.

The product is sold in two major grades, anatase and rutile, and in two forms, dry and slurried. Quality variations are possible. There are hundreds of customers and perhaps thousands of sales per year. The Commission received complete data from two of the six domestic producers; the remaining firms submitted incomplete but usable data.

The information before us does not provide evidence of price suppression or price depression by imports from any of the four countries. In comparing U.S. producers' and importers' weighted average selling prices for rutile titanium dioxide in dry form shipped to paint manufacturers (which cover about 50 percent of titanium dioxide shipments) for the period January 1976-July 1979, we found that U.S. producers' prices did not significantly differ from importers' prices. U.S. producers' prices never exceeded importers' prices by more than 3.8 cents per pound (about 8 percent in July 1978) during the period, and importers' prices never exceeded U.S. producers' prices by more than 1.6 cents per pound (about 3 percent in November 1978). On the whole,

price spreads remained fairly constant during the period, narrowing slightly after mid-1978. Importers alleged that some of this price advantage was necessary to compensate for their inability to provide services to the extent furnished by domestic producers.

Further, domestic producers' weighted average selling prices appear to have increased at a slower rate than those of importers. Between January 1978 and January 1979, producers' weighted average selling prices increased by about 8 percent. Importers' weighted average selling prices increased by slightly more than 10 percent in the same period.

There appears to be some indication of lost sales by domestic manufacturers to the subject LTFV imports. Of the hundreds of end users of titanium dioxide in the United States, 43 were sent producers' questionnaires; nearly half responded. In general, there seemed to be some decline in purchases of the domestic product and some increase in purchases of imports. A telephone survey of 50 other end users yielded 14 confirmed instances of lost sales. In some cases, quality and availability rather than price were given as the reasons for choosing imports. In a market where there may be thousands of sales, we found it difficult to determine that the small number and volume of lost sales were significant. For example, it is uncertain how many lost sales may have been due to imports by N.L. which replaced its diminished domestic production rather than displacing titanium dioxide from the other five firms.

The market penetration by subject LTFV imports was stable during 1976-78. Starting in 1974 at a level of 2.4 percent of consumption, it increased to 10.3 percent in 1977 and 10.4 percent in 1978. Thus, in the year which included Treasury's six-month evaluation period, import penetration

increased by an insignificant 0.1 percentage point. The penetration for the first six months of 1979 was lower than that for the corresponding period of 1978. The first year covered by this investigation, 1974, is not a good base year for judging the industry. The years 1973-75 showed historically low levels of penetration of the domestic market by all imports. This was in part due to worldwide excess demand which forced prices up in Europe while they remained under government control in the United States during 1973 and early 1974. By the end of 1978, imports had regained the stable level of penetration characteristic of the 1960's. Import penetration in this industry does not appear to be at unprecedented levels.

Domestic production in 1978 was up from the 1977 level, equal to the 1976 level, and about 15 percent higher than the 1975 level. Data for the first seven months of 1979 indicate that 1979 production will probably exceed the 1978 level.

U.S. exports experienced a decline of 50 percent in 1975 from a 1974 level of over 30,000 short tons. They then grew irregularly to a record level of almost 38,000 short tons in 1978. Figures for the first half of 1979 are nearly triple those for the corresponding period of 1978. Principal export markets included France and Belgium.

Only partial inventory information was received by the Commission. For the four firms reporting, inventories increased from 1974 through 1976 and then steadily declined through the first half of 1979. Inventories in January-July 1979 were at their lowest levels since 1974.

Overall capacity utilization fell from 64 percent in 1974 to 50 percent in 1975 before recovering dramatically to about 80 percent in 1978, a level which held through the first half of 1979. Excluding data for N.L., which

had many unusual labor and environmental problems unrelated to LTFV imports, the industry average, with the exception of 1975, hovered at about 90 percent for the entire period under consideration.

Employment fell 24 percent from 1974 to 1978 for the five firms reporting employment data for the full period. N.L., which closed a plant in 1978, was responsible for the decline. Employment apparently increased steadily over the five-year period for all other firms. The petitioner, SCM, showed one of the most marked rises in the average number of production and related workers engaged in the production of titanium dioxide during this period.

In the aggregate, reported net profit on domestic titanium dioxide operations fell from $39 million (11.8 percent of net sales) in 1974 to $13 million (3.8 percent) in 1975, rose to $44 million (9.9 percent) in 1976, and fell to $334,000 in 1978 (0.1 percent). A sharp improvement was recorded in the first half of 1979. The ratio of net profit to net sales for the other reporting firms was significantly better in each year, but followed the same pattern as when N.L. data were included. 4/ The individual experiences of the four reporting firms varied considerably. One producer reported a very high profit ratio in all five years. Another producer reported high profits in three years but lower profits in 1975 and 1978. Yet a third producer showed losses in three of five years, and the remaining one reported consistent losses after 1974. The effect of the technically superior chloride process on financial performance has been significant. Firms utilizing it exclusively showed consistently higher profit ratios than the others. For the five

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4/ A more detailed discussion would disclose confidential data.

reporting firms, there was a direct relation between the profit ratios and the percentages of total capacity using the chloride process.

Domestic production capacity was essentially constant for all domestic producers except N.L. Du Pont is proceeding with plans to open a new facility at DeLisle, Mississippi, in 1981. When complete, it will raise domestic capacity by more than 10 percent. There has been no indication of either significant expansion plans or unused capacity by the foreign producers covered in this investigation.

CONCLUSION

We have found that the economic indicators do not demonstrate that the domestic industry is being or is likely to be injured by reason of the LTFV sales. The information before us on pricing, import penetration, and lost sales does not connect the subject LTFV imports to any of the problems that may have confronted the domestic industry during the period of this investigation. The implications of the introduction of the chloride process and of Du Pont's position of technological superiority and market dominance suggest that the problems reflected in the profit ratios of some domestic producers are the result of the conditions of domestic competition.

An examination of the subject imports on a country-by-country basis has not been necessary because, even when examined collectively, they did not satisfy the statutory requirements necessary for an affirmative determination.

Statement of Reasons of Chairman Joseph O. Parker

On August 7, 1979, the United States International Trade Commission received advice from the Department of the Treasury that titanium dioxide, provided for in item 473.70 of the Tariff Schedules of the United States (TSUS), from Belgium, France, the United Kingdom, and the Federal Republic of Germany (West Germany), with the exception of that sold by Bayer AG of West Germany and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value (LTFV) within the meaning of the Antidumping Act, 1921, as amended (19 U.S.C. 160 et seq.). Accordingly, on August 23, 1979, the Commission instituted investigations Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209 under section 201(a) of said act to determine whether an industry in the United States is being or is likely to be injured, or is prevented from being established, 1/ by reason of the importation of such merchandise into the United States.

On the basis of information obtained in these investigations, I determine that an industry in the United States is being or is likely to be injured by reason of the importation of titanium dioxide, provided for in TSUS item 473.70 from Belgium, France, the United Kingdom, and West Germany, with the exception of that sold by Bayer AG of West Germany and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, which the Secretary of the Treasury has determined is being, or is likely to be, sold at less than fair value within the meaning of the Antidumping Act, 1921, as amended.

Titanium dioxide is the whitest, most inert, and most opaque of all commercial pigments. It is used to whiten, brighten, and opacify

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1/ Prevention of the establishment of an industry is not an issue in these investigations and will not be considered further.

products such as paints, paper, and plastics. Six domestic firms currently produce titanium dioxide. The largest domestic producer, Du Pont, accounted for more than one-third of present domestic capacity during 1974-78. SCM Corp., petitioner in these investigations, is the second largest domestic producer.

In making its determination of LTFV sales, Treasury examined virtually all exports of titanium dioxide to the United States during the period May 1, 1978, through October 31, 1978, from Belgium, France, the United Kingdom, and West Germany. The countries, firms, range of LTFV margins, and weighted average margins in relation to the fair market value of the merchandise on all sales as determined by Treasury are as follows:

Country and firm	Range of LTFV margins (percent)	Weighted average margin on all sales compared (percent)
Belgium:		
Bayer Antwerpen, N.V.	0.3-17.7	8.9
Kronos S.A./N.V.	1.4-14.1	10.1
France:		
Thann et Mulhouse	17.4-21.4	18.4
Tioxide, S.A.	14.3-26.6	19.9
West Germany:		
Bayer, AG	.5-22.4	.1
Kronos Titan, GmbH	2.6-24.9	12.5
Pigment-Chemie, GmbH	4.6-21.6	5.1
United Kingdom:		
BTP Tioxide, Ltd	12.4-47.6	27.7
LaPorte Industries, Ltd	14.5-43.3	32.4

Both past Commission decisions and the legislative history of the Antidumping Act establish that it is within the Commission's discretion to cumulate the effect of such imports. As the Senate Committee on Finance stated in its report on the Trade Act of 1974:

> . . . the Commission has considered the combined impact of less-than-fair-value imports in making injury determinations when the facts and economic

> considerations so warrant. Such result does not follow as a matter of law; it follows, on a case by case basis, only when the factors and conditions of trade show its relevance to the determination of injury. 1/

In making my determination, I have considered the cumulative impact of LTFV imports from the four countries under investigation. Treasury conducted its investigations and reported its LTFV determinations on imports from each of the four countries simultaneously. To a large extent, the same grades of titanium dioxide are sold by exporters from each of the countries under consideration. Each also sells to a variety of end users in a market which has no apparent regional boundaries. Thus, these imports have a cumulative impact on domestic producers which would not accurately be reflected if they were considered individually.

The standards to be used in determining injury within the meaning of the Antidumping Act are also set forth in the Finance Committee report:

> Injury must be a harm which is more than frivolous, inconsequential, insignificant, or immaterial. 2/

With respect to causation, the report states:

> . . . the law does not contemplate that injury from less-than-fair-value imports be weighed against other factors which may be contributing to injury to an industry. The words "by reason of" express a causation link but do not mean that dumped imports must be a (or the) principal cause, a (or the) major cause, or a (or the) substantial cause of injury caused by all factors contributing to overall injury to an industry.
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> In short, the Committee does not view injury caused by unfair competition, such as dumping, to

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1/ Trade Reform Act of 1974: Report of the Committee on Finance . . ., S. Rept. No. 93-1298 (93d Cong., 2d sess.), 1974, p. 180.
2/ Ibid.

> require as strong a causation link to imports as would be required for determining the existence of injury under fair trade conditions. 1/

The information obtained by the Commission establishes the increased penetration of the U.S. market by LTFV imports from Belgium, France, the United Kingdom, and West Germany. The share of total imports supplied by LTFV countries increased from 54.5 percent in 1974 to 69.2 percent in both 1977 and 1978. Imports from the LTFV countries increased their share of U.S. consumption from 2.4 percent in 1974 to 10.5 percent in 1978--or by more than 300 percent. While imports from those firms selling at LTFV increased by only 2 percent from 1977 to 1978, quarterly import statistics reveal that there was a sharp drop in imports during the last half of 1978, when the petition which was the basis for initiating this investigation was filed. No other factors were cited during the investigation as a cause of this decline.

Treasury's determination established significant LTFV margins as heretofore shown. These margins were instrumental in enabling the foreign producers, which all manufacture titanium dioxide by the higher cost sulfate process, to undersell domestic producers during the period of Treasury's investigation.

Information gathered from the Commission's questionnaires indicates that paint manufacturers are the primary market for both the major domestic manufacturers and imports, accounting for slightly more than half of annual consumption of titanium dioxide. Pricing information gathered during the investigation indicates that importers selling titanium dioxide from BTP Tioxide of the United Kingdom, both French exporters, Kronos Titan of West Germany, and Kronos S.A./N.V. of Belgium consistently undersold

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1/ Ibid.

both Du Pont and SCM. Throughout the period, N.L. Industries, the exclusive importer of titanium dioxide from Kronos Titan and Kronos S.A., generally priced both imports and its domestically produced titanium at the same prices, which were consistently below those of the other two domestic producers reporting to the Commission.

Paper manufacturers are the second largest end users of titanium dioxide, accounting for about 25 percent of domestic consumption. Only one importer, N.L. Industries, reported selling rutile-type titanium dioxide to paper manufacturers. Although its selling prices were seldom below domestic prices during the period of the investigation, sales of that type represented only a small percentage of the total imports from Kronos Titan of West Germany and Kronos S.A./N.V. of Belgium.

N.L. Industries and another importer selling anatase-type titanium dioxide sourced in the United Kingdom at LaPorte and in Belgium at Bayer Antwerpen reported pricing information on imported products sold to paper manufacturers. This information also demonstrates that these importers consistently sold at prices below the domestic producers' weighted average prices during the period in which Treasury found LTFV sales.

A similar pattern of underselling is evident from the pricing information gathered with respect to sales to plastics manufacturers, the third largest end users of titanium dioxide, accounting for about 12 percent of annual consumption. These data show that rutile-type titanium dioxide imported from LTFV sources undersold the domestic product by about 2.4 cents per pound throughout 1978.

During the Commission's investigation, it was contended by importers that Du Pont, the largest and most efficient producer of titanium in the domestic market, was the price leader in the domestic market. In commenting

on a similar matter, an administrative law judge, in an initial decision in a case brought before the Federal Trade Commission, stated:

> It also appears that these prices were not artificially or unilaterally established by Du Pont, but were controlled by the economic conditions in the TiO_2 market . . . . These conditions were affected by "price controls," . . . imports, and the reluctance of TiO_2 users to return to normal levels of use 1/

The information obtained by the Commission already clearly indicates that underselling caused the domestic industry to lose sales to LTFV-priced imports, thereby contributing to the underutilization of domestic facilities and the declining profitability of the domestic industry in 1978. About half the firms receiving purchasers' questionnaires from the Commission responded; these firms generally reported a decline in purchases of domestically produced titanium dioxide from 1977 to 1978 and an increase in purchases of LTFV imports from the four countries under consideration. These responses may have understated lost sales since many purchasers considered N.L. Industries solely as a domestic supplier. Additional indications of lost sales were found in a telephone survey conducted by the Commission's staff of other end users. As would be expected with the underselling of the domestic producers, price was the reason most frequently stated for the switch from the domestic to the imported product.

The increased market penetration and underselling occurred at a time when the domestic industry was in a vulnerable position. A review of the pricing information gathered indicates that prices of the various types of titanium dioxide sold to the three major end users remained essentially the same from July-December 1976 through January-June 1978. The price

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1/ In the Matter of E. I. Du Pont De Nemours & Company, a corporation., Initial Decision of Miles J. Brown, Administrative Law Judge, Docket No. 9108, Sept. 19, 1979, pp. 38-39.

increases which occurred thereafter were generally not large, considering the prevailing cost increases and the length of time prices had remained stationary.

The profit-and-loss experience of those domestic producers reporting to the Commission shows declining profit during 1976-78. Du Pont, the largest producer in the industry, was also less profitable in 1978 than in any of the preceding 4 years, and SCM Corp., the second largest producer, also experienced its worst year in the 5-year period.

Following the filing of the petition by SCM and the subsequent decline in imports from LTFV sources, conditions improved in the domestic industry. Imports from LTFV sources continued the decline which had begun in July-December 1978, while imports from other sources increased. Even though apparent U.S. consumption and total imports were almost the same in January-June 1979 as during January-June 1978, conditions in the domestic industry improved. The information available to the Commission indicates that prices to the three major end users generally increased as did production and U.S. producers' commercial shipments. Inventories had also declined sharply by the end of June 1979, in comparison with levels at the end of June 1978. Net profit before taxes also increased sharply. These factors further indicate the adverse impact LTFV sales were having on U.S. producers

On the basis of these factors, I have made an affirmative decision.

INFORMATION OBTAINED IN THE INVESTIGATION

Summary

On August 7, 1979, the United States International Trade Commission received advice from the Department of the Treasury that titanium dioxide from Belgium, France, the Federal Republic of Germany (West Germany) and the United Kingdom, with the exception of that sold by Bayer AG of West Germany, and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value (LTFV) within the meaning of the Antidumping Act, 1921, as amended. Accordingly, on August 23, 1979, the Commission instituted investigations Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209 under section 201(a) of said act to determine whether an industry in the United States is being or is likely to be injured, or is prevented from being established by reason of the importation of such merchandise into the United States.

Treasury's investigation of sales at LTFV resulted from a complaint from counsel filed on behalf of SCM Corp., New York, N.Y. The investigation by Treasury covered virtually all exports to the United States from Belgium, France, West Germany and the United Kingdom during the 6-month period from May 1, 1978 through October 31, 1978. The following table shows the range of margins, and the weighted average margin on all sales compared by Treasury, by country and by firm:

Titanium dioxide: Range of margins and weighted average margins in comparison to fair market value compared by Treasury, by country and firm, May 1, 1978 through October 31, 1978

Country and firm	Range of margins	Weighted average margin on all sales compared
Belgium:		
Bayer Antwerpen-N.W.	0.3-17.7	8.9
Kronos S.A./N.Y.	1.4-14.1	10.1
France:		
Thann et Mulhouse, S.A.	17.4-21.4	18.4
Tioxide, S.A.	14.3-26.6	19.9
United Kingdom:		
BTP Tioxide, Ltd 1/	12.4-47.6	31.5
LaPorte Industries, Ltd	14.5-43.3	2/ 32.4
West Germany:		
Bayer AG 3/	.5-22.4	.1
Kronos Titan GmbH	2.6-24.9	12.5
Pigment-Chemie GmbH	4.6-21.6	5.1

1/ On October 18, 1979, Dick Self, Director of Tariff Affairs, Department of the Treasury, indicated in a telephone conversation with the Commission's Staff, that Treasury's LTFV margin calculations on BTP Tioxide (U.K.) was in error. According to Mr. Self, Treasury has revised the LTFV margin downward for BTP Tioxide to 38.25 percent of the purchase price of the merchandise or 27.7 percent of the fair market value. Mr. Self's letter to the Commission is presented in appendix C.

2/ For pigmentary grades of titanium dioxide only.

3/ Excluded from Treasury's determination and not covered by this investigation.

Source: Calculated by the U.S. International Trade Commission from data obtained from the U.S. Customs Service, Department of Treasury.

Annual decreases in consumption have coincided with economic recessions in the United States, occurring in the early 1950's, 1957, 1960, and 1970, and 1975. Apparent U.S. consumption totaled 788,000 short tons in 1974, declined to 615,000 short tons in the recession year of 1975 but increased annually thereafter and in 1978 reached 774,000 short tons-- 2 percent below the 1974 level of consumption and 26 percent above consumption during the 1975 recession year. Consumption increased slightly during the first half of 1979, increasing by 0.1 percent from thelevel of consumption during the first half of 1978. The surface-coating industry accounted for slightly more than one-half of titanium dioxide consumption between 1973-77; the paper industry consumed about 20 percent, and the plastics industry about 10 percent.

U.S. production of titanium dioxide, as obtained from responses to the Commission's questionnaires, declined from 758,000 short tons in 1974 to 604,000 short tons in 1975 but increased irregularly thereafter to 694,000 short tons in 1978. Preliminary data indicate that U.S. production in the first half of 1979 was 5 percent above production for the first half of 1978.

Total shipments by U.S. producers (including interplant transfers) declined irregularly from 705,000 short tons in 1974 to 580,000 short tons in 1975, increased by 1976 to 684,000 short tons but declined in 1978 to 661,000 short tons. Commercial shipments by U.S. producers followed the same trend, declining from 658,000 short tons in 1974 to 542,000 short tons in 1975, but increased in 1976 to 642,000 short tons, falling to 621,000 short tons in 1978. Captive consumption by U.S. producers ranged from 5.6-6.7 percent of total U.S. producers' shipments during 1974-78. The share of consumption supplied by SCM trended upward between 1974 and 1978 while the share supplied by N.L. Industries (from their U.S. production), DuPont, and Gulf & Western trended downward.

U.S. exports of pigmentary grade titanium dioxide during 1974-78 fluctuated between a low of 15,676 short tons in the recession year of 1975 and a high of 37,812 short tons in 1978. U.S. exports in the first half of 1979 amounted to 25,163 short tons--more than double the level of exports for the corresponding period of 1978. * * *.

As a share of U.S. production, exports declined from 4 percent in 1974 to 3 percent in 1975 and 1976, and 2 percent in 1977. In 1978, exports increased to 5 percent of U.S. production and in the first half of 1979 reached 7 percent. Principal markets for U.S. exports of titanium dioxide pigments in 1978 included the Republic of Korea, Canada, France, Belgium, Japan and Venezuela.

The quantity of U.S. imports of titanium dioxide more than tripled between 1974 and 1978, increasing irregularly from 34,996 short tons in 1974 to 117,708 short tons in 1978. Between 1974 and 1978 the value of imports also increased accordingly from $24.4 million to $90.7 million. During the first half of 1979, total imports were down about 6 percent by quantity and 1 percent by value from the corresponding period of 1978. The decline in imports during the first half of 1979 was due to reduced shipments from Belgium, France, West Germany, and the United Kingdom--the countries involved in this investigation. Imports from all other principal sources increased by nearly 60 percent during the partial year of 1979 compared with the same period of 1978. The ratio of imports from the 4 LTFV countries to apparent consumption rose from 2.4 percent in 1974 to 10.5 percent in 1978, falling from 11.6 percent during January-June 1978 to 8.3 percent during the corresponding period of 1979. Imports from all other countries increased from 2.0 percent of domestic consumption in 1974 to 4.7 percent of domestic consumption in 1978 and 6.1 percent of consumption during January-June 1979.

U.S. producers' inventories increased from 36,000 short tons in 1974 to 99,000 short tons in 1976 but declined to 86,000 short tons in 1978. In 1978, the ratio of producers' inventories to production averaged 15 percent for the firms which responded to the questionnaires during the Commission's investigation.

U.S. employment, as reported to the Commission by questionnaire trended downward during the 1974-78 period. Employment as reported by firms that supplied data for the entire period covered by the questionnaire declined substantially between 1974 and 1978 due at least in part to the closure of the Missouri plant by NL Industries.

Four of the six domestic producers of titanium dioxide responded to the questionnaire with usable profit-and-loss data for the period 1974-78. In the aggregate, the ratio of net profits before taxes to net sales for the four firms declined irregularly from 11.8 percent in 1974 to a profit of 0.1 percent of sales in 1978 but increased sharply to a profit for Jan.-July 1979 of 4.6 percent--a period when LTFV imports had declined substantially.

In an attempt to determine if sales had been lost by domestic manufacturers to sales at LTFV from Belgium, France, the United Kingdom and West Germany the Commission requested data from 43 firms that purchase titanium dioxide. Responses were received from about half of those firms and questionnaire data indicated a decline in purchases of domestic titanium dioxide and an increase in purchases of the imported product. The staff also contacted 50 end users of titanium dioxide by telephone that did not receive the questionnaire; 14 instances of lost sales by U.S. manufacturers to LTFV imports were verified. Reasons generally given for the switch from domestic to LTFV imports was price, although quality was also mentioned.

Prices were obtained from importers and domestic producers for sales to manufacturers of paint, paper, and plastics. All four countries were represented by the price data supplied by the importing firms. On the average, the imported product sold to end users was priced below the domestic product. For instance, in the case of rutile pigments sold to paint manufacturers, which accounted for over half of annual U.S. titanium dioxide consumption, * * *, most importers appear to be underselling SCM Corp., N.L. and DuPont in 1978 and 1979 by amounts that can be accounted for by the LTFV margins found by Treasury. * * *.

Introduction

On August 7, 1979, the United States International Trade Commission received advice from the Department of the Treasury that titanium dioxide from Belgium, France, the Federal Republic of Germany (hereafter West Germany), and the United Kingdom, with the exception of that sold by Bayer AG of West Germany, and ceramic grades 1/ of titanium dioxide sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value (LTFV) within the meaning of the Antidumping Act, 1921, as amended (19 U.S.C. 160, et seq.). 2/

Accordingly, on August 23, 1979, the Commission instituted investigations Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209 under section 201(a) of said act to determine whether an industry in the United States is being or is likely to be injured, or is prevented from being established, by reason of the importation of such merchandise into the United States.

The public hearing in connection with these investigations was held in Washington, D.C. on September 27 and September 28, 1979. By statute the Commission must make its determination within 3 months of its receipt of advice from Treasury or, in this case, by November 7, 1979.

Notice of the institution of the Commission's investigations and of the time and place of the public hearing was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and the Commission's New York Office, and by publishing the original notice in the Federal Register of August 29, 1979 (44 F.R. 50663) 3/.

Treasury's determination of sales at LTFV resulted from an investigation initiated pursuant to a complaint filed on September 18, 1978, by counsel on behalf of SCM Corp., New York, N.Y. Treasury's Antidumping Proceeding Notice was published in the Federal Register of October 31, 1978 (43 F.R. 50781).

At the time Treasury began its antidumping proceeding, however, it notified the United States International Trade Commission that, during the course of determining whether to institute an investigation with respect to titanium dioxide from Belgium, France, the United Kingdom and West Germany, it had concluded from the information available to it that there was substantial

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1/ For purposes of the Department of Treasury's determination, ceramic grades of titanium dioxide are titanium dioxide pigments (provided for in TSUS item 473.70), having an average minimum primary particle size exceeding 8 microns in diameter.

2/ The determinations by Treasury exclude ceramic grades of titanium dioxide manufactured by LaPorte Industries on the grounds of no sales at LTFV. Treasury discontinued the investigation with respect to Bayer AG. A copy of Treasury's letter to the Commission concerning LTFV sales from Belgium, France, West Germany, and the United Kingdom and the letter providing a definition of "ceramic grades" are presented in app. A.

3/ A copy of the Commission's Notice of Investigations and Hearing is presented in app. B.

doubt that an industry in the United States was being, or was likely to be, injured by reason of the importation of such merchandise into the United States. The Commission received the letter of notification on October 30, 1978, and, on November 6, 1978, instituted a 30-day inquiry (inquiry No. AA1921-Inq.-23) to determine whether there was no reasonable indication that an industry in the United States is being injured or prevented from being established, by reason of the importation of such merchandise into the United States. On November 29, 1978, the Commission notified the Secretary of the Treasury that Treasury should continue its investigation into the nature and extent of sales at less than fair value for titanium dioxide from the four countries in question 1/.

Treasury's Notices of Withholding of Appraisement and Determinations of Sales at LTFV were published in the Federal Register of August 10, 1979 (44 F.R. 47196 - 47204). The withholding of appraisement of the merchandise in question is to extend for 3 months from the date of publication of the Notice of withholding of appraisement in the Federal Register or from August 10, 1979 through November 10, 1979.

Description and Uses

Titanium dioxide (TiO_2), a white, solid metallic oxide is the whitest, most inert, and most opaque of all commercial pigments. Its superior hiding power (resulting from its high index of refraction), relatively low specific gravity, and chemical stability have made it the most important of the white pigments. 2/ In many of its uses it has no acceptable substitute. TiO_2 pigments are used to whiten, brighten, and opacify such products as paints, paper, plastics, inks, synthetic fibers, and rubber compounds.

Anatase and rutile are the forms principally used as pigments. Both have the same crystal structure but rutile is more dense. The rutile form accounts for 75 percent of the titanium dioxide pigments used. Both anatase and rutile are marketed in several "pure" grades containing from 91 to 99 percent titanium dioxide, depending on the amount of alumina, silica, zinc oxide, or other additives put into the formula to improve color retention, chalking resistance, dispensibility, or other properties of the pigment. 3/ Various grades and types of pigments are generally manufactured for specific uses but there is some interchangeability between different grades of anatase, between different grades of rutile pigments, and, to some extent between anatase pigments and rutile pigments.

1/ Chairman Parker and Commissioners Moore and Bedell determined that the Treasury investigation should continue, while Vice Chairman Alberger and Commissioner Stern determined that it should be terminated. See U.S.I.T.C. Publication 930 Titanium Dioxide from Belgium, France, the United Kingdom and the Federal Republic of Germany, Determination of "A Reasonable Indication of Injury in Inquiry No. AA1921-Inq.-23, November 1978.

2/ Other white pigments include white lead, lithopane, and zinc oxide.

3/ Most U.S. suppliers of titanium dioxide manufactured abroad carry fewer product grades than are available from the domestic manufacturers.

Titanium dioxide is manufactured by either the sulfate process or the chloride process. The sulfate process is the older of the two and is being superseded by the chloride process. The 3 chloride processes in use in the United States today were developed by DuPont, Inc. and the Kerr-McGee Corp. In general the chloride process requires lower investment and operating costs, produces less waste by-product, and results in a higher quality pigment. No new sulfate plants have been built in the United States since 1959. Raw materials used in the sulfate process consist of either ilmenite or titanium slag while raw materials used in the chloride process consist of either natural or synthetic rutile. 1/ Although plants which manufacture titanium dioxide by the sulfate process can also use the low-cost ilmenite ore as a feedstock, the resulting waste disposal costs far outweigh any feedstock cost advantages when compared with the chloride process. Both of the manufacturing processes are described briefly as follows:

Sulfate process

The sulfate process consists of the mixing of the raw material with sulfuric acid resulting in a solution which is then clarified to remove heavy metals and materials in suspension. Next the solution is cooled. This step separates the iron from the solution in the form of hydrated iron sulfate. After leaching and concentration, seed crystals are added to the liquid which has been hydrolyzed and the result is the precipitation of insoluble hydrated titanium dioxide. The precipitate is washed and calcined to obtain titanium dioxide which is then ready for final processing. The crystalline form obtained after calcination depends on the type of seed crystals that were added during the precipitation step. Major waste products which result from the sulfate process are heavy metal sulfates including iron sulfate, gypsum, and diluted acid wastes.

Chloride process

The chloride process involves mixing the raw material (natural or synthetic rutile) with coke and chlorinating at elevated temperatures. Titanium tetrachloride is formed from this reaction. The tetrachloride is separated from other chlorination products and is purified by distillation. Next it is vaporized and then oxidized to produce titanium dioxide and chlorine. The chlorine is then recovered and recycled.

Comparison of the Kerr-McGee and DuPont chloride processes

The Kerr-McGee process and the two DuPont processes for the production of titanium dioxide (TiO_2) are similar in most respects. The major difference occurs during the oxidation of titanium tetrachloride ($TiCl_4$) with oxygen to produce TiO_2). ($TiCl_4 + O_2 = TiO_2 + 2Cl_2 + HEAT$). * * *.

1/ Ilmenite ore, from which iron has been removed by an acid treatment, has a TiO_2 content of greater than 90 percent and therefore is a relatively low-cost raw material used as a synthetic rutile.

The differences between the two DuPont processes are both mechanical and chemical in nature. The improvements are highly secret proprietary information which DuPont declines to discuss and which are not licensed to any other company.

Producers of Titanium Dioxide

U.S. producers

Six firms manufactured titanium dioxide in the United States during the period January 1974-July 1979--DuPont, Inc., N.L. Industries, Inc., SCM Corp., American Cyanamid Co., Kerr-McGee Corp., and Gulf & Western. These firms operate 10 plants located as follows: two each in New Jersey and Ohio and one each in California, Georgia, Mississippi, Tennessee, Delaware, and Maryland. The New Jersey plant, operated by N.L. Industries, experienced a strike by its employees from February 1976 to January 1977. Although N.L. subsequently attempted to contain pollution levels at the Missouri plant within the allowable government limits, its attempts were unsuccessful and production of titanium dioxide at that location ceased in 1978.

In the current quarter of 1979, a new DuPont facility, located at DeLisle, Miss., will begin production. By 1981, the new plant will be producing 126,000 short tons of titanium dioxide by the DuPont chloride process number two. This plant will account for 23 percent of DuPont's total capacity in 1981 and will give DuPont about 52 percent of total U.S. capacity to produce titanium dioxide and 74 percent of U.S. capacity to produce titanium dioxide by the chloride process, as shown in table 1.

The Kerr-McGee chloride process is used exclusively at the Kerr-McGee plant at Hamilton, Miss., and American Cyanamid and Gulf & Western are both licensed to produce titanium dioxide by the Kerr-McGee process. Originally the DuPont process number one for the production of titanium dioxide was used in all DuPont plants, but the Sherwin-Williams Co. plant at Ashtabula, Ohio was licensed to use the same process. Upon acquisition of the Sherwin-Williams plant at Ashtabula, in October 1974, the license to produce titanium dioxide by the DuPont process number one was acquired by SCM Corp. SCM, which already operated a Kerr-McGee process chloride plant at Baltimore, Md., has completed the conversion of the Baltimore plant to the DuPont process number one and now operates two DuPont process plants. DuPont has not allowed the licensing of any other chloride plants for its process number one. All DuPont plants utilize the DuPont process number two. None of DuPont's competitors have been licensed to use DuPont's process number two. The relative cost of producing titanium dioxide in the various U.S. production facilities, including anticipated costs of the new DuPont facility at DeLisle, Miss., are shown in figure 1, which was contained in the initial decision of Miles J. Brown, Administrative Law Judge, Federal Trade Commission, in the matter of E.I. DuPont de Nemours and Co., on September 4, 1979. The data presented therein indicate that, for plants of like capacity, the DuPont chloride process number two is the most efficient means of producing titanium dioxide, the DuPont chloride process number one is next, and the sulfate process is the most costly.

Table 1.--Titanium dioxide: U.S. production facilities and plant capacities, total and for the sulfate and chloride process, by firm and plant location, 1977.

Firm and plant location	Process	Annual capacity	Share of total U.S. capacity	Share of U.S. Capacity by the--	
				Sulfate process	Chloride process
		1,000 short tons	Percent	Percent	Percent
American Cyanamid:					
Savannah, Ga.	Sulfate	72	8	23	-
	Chloride	40	4	-	6
Subtotal		112	12	23	6
DuPont: 1/					
Antioch, Ca.	Chloride	30	3	-	5
Edgemoor, Del	Chloride	167	18	-	27
New Johnsonville, Tenn.	Chloride	228	25	-	37
Subtotal		425	46	-	69
Gulf & Western:					
Ashtabula, Ohio	Chloride	29	3	-	5
Gloucester City, N.J.	Sulfate	44	5	14	-
Subtotal		73	8	14	5
Kerr-McGee:					
Hamilton, Miss.	Chloride	50	5	-	8
N.L. Industries:					
Sayreville, N.J.	Sulfate	100	11	33	-
St. Louis, Mo. 2/	Sulfate	40	4	13	-
Subtotal		140	15	46	-
SCM Corp:					
Ashtabula, Ohio	Chloride	42	5	-	7
	Sulfate	53	6	17	-
Subtotal		95	11	17	7
Baltimore, Md.	Chloride	30	3	-	5
Subtotal		3/ 125	14	17	12
Total		925	100	100	100

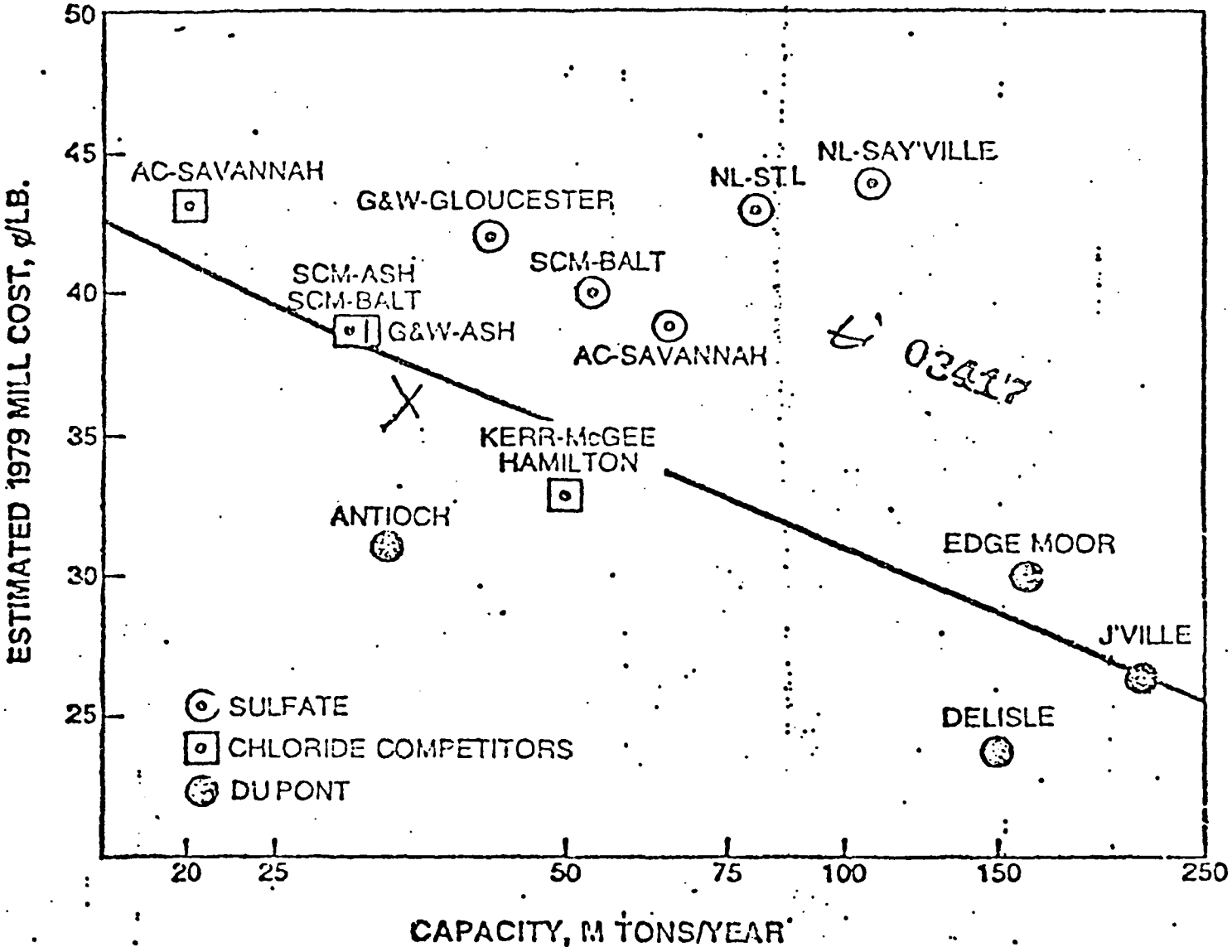
1/ In 1979, DuPont is expected to bring on stream a new chloride process plant at Delisle, Mississippi that, by 1981, is expected to have an annual capacity of 126,000 short tons, providing DuPont with 551,000 short tons of overall capacity, 52 percent of the U.S. capacity, and 74 percent of total U.S. chloride capacity.

2/ The St. Louis plant of N.L. Industries ceased production of titanium dioxide in 1978.

3/ In 1977, of the total of 925,000 short tons, 309,000 short tons (or 33 percent) of the titanium dioxide capacity was accounted for by the sulfate process and 616,000 short tons (67 percent) by the chloride process.

Source: Estimated on the basis of trade literature and information supplied by the domestic industry.

FIGURE 1: MILL COSTS OF TITANIUM DIOXIDE PRODUCERS



SOURCE: INITIAL DECISION BY ADMINISTRATIVE LAW JUDGE, MILES J. BROWN, IN THE MATTER OF E.I. DUPONT DE NEMOURS & CO., BEFORE THE FEDERAL TRADE COMMISSION, SEPTEMBER 4, 1979.

U.S. producers' maximum effective capacity

U.S. producers were requested by the Commission to report their estimated maximum effective capacity for the production of titanium dioxide based on actual product mix during 1974-78, with allowances for scheduled maintenance downtime. Such data, which are shown in table 2, were reported to the Commission by 5 of the 6 domestic manufacturers. The increase in chloride capacity reported by ***.

As shown in table 3, the capacity to produce titanium dioxide by the chloride process at SCM ***, and for the U.S. industry as a whole, chloride capacity increased from 39 percent of total capacity in 1974 to 65 percent in 1978.

Domestic producers were also asked to report any significant unscheduled loss of capacity during 1974-78, and the nature of the unscheduled supervening event that caused the shutdown. *** and *** reported that they had no unscheduled significant loss of capacity. N.L. Industries reported that in ***. In 1976, the N.L. plant at Sayreville suffered an 11-month strike and, although there was partial production by supervisory personnel, the capacity lost by the firm totaled ***. Tables 4 and 5 indicate that the share of U.S. production of TiO_2 accounted for by the chloride process has also increased significantly at the expense of the share accounted for by the sulfate process--chloride production accounting for 46 percent of total production in 1974 and 65 percent of the total in 1978.

As shown in table 6, overall capacity utilization in the industry fell from 64 percent in 1974 to 50 percent in 1975 and rose to 80 percent in 1978. Both chloride and sulfate capacity utilization followed the same trends, but with a much sharper drop in 1975 experienced in the sulfate mills as production in less efficient facilities was reduced more rapidly than at the more efficient chloride mills. Because of the significant difficulties experienced by N.L. Industries, it may be justified to look at the capacity utilization data for the industry without the skewing effect of N.L.'s data. Without N.L., overall capacity utilization ranged from *** percent during 1976-78, slightly lower than the ***percent reported for 1974.

Producers in Belgium, France, West Germany, and the United Kingdom

Virtually all of the imports from Belgium were manufactured by two firms--Bayer-Antwerpen, N.V. (Bayer) and Kronos SA/NV (Kronos). Kronos is owned by N.L. Industries. Two firms in France, Thann et Mulhouse and Tioxide

Table 2.--Titanium dioxide: U.S. producers' estimates of maximum effective capacity for production of titanium dioxide, by manufacturing process, by firm, 1974-78, January-July 1978, and January-July 1979

(In short tons)

Manufacturing process and firm	1974	1975	1976	1977	1978	January-July--	
						1978	1979
Sulfate process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries:							
Sayreville plant	***	***	***	***	***	***	***
St. Louis plant	***	***	***	***	***	***	***
Subtotal, N.L	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Subtotal, sulfate process	719,900	664,900	484,900	484,900	304,900	3/ 144,117	3/ 161,617
Subtotal, excluding N.L	***	***	***	***	***	***	***
Chloride process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Subtotal, chloride process	459,353	546,100	553,134	536,445	558,753	3/ 306,584	3/ 319,419
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Total	1,179,253	1,211,000	1,038,034	1,021,345	863,653	450,701	481,036
Total, excluding N.L	***	***	***	***	***	***	***

1/ * * *.

2/ Not available.

3/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3.--Titanium dioxide: Share of each U.S. producers' estimates of its maximum effective capacity for production of titanium dioxide accounted for by the chloride process, by firm, 1974-78, January-July 1978, and January-July 1979

(In percent)

Firm	1974	1975	1976	1977	1978	January-July--	
						1978	1979
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Average	39.0	45.1	53.3	52.5	64.7	1/ 68.0	1/ 66.4

1/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 4.--Titanium dioxide: U.S. production, by type of manufacturing process, by firm, 1974-78, January-July 1978, and January-July 1979

(In short tons)

Manufacturing process and firm	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
Sulfate process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Subtotal 2/	248,675	156,408	135,421	109,652	109,655	58,821	64,866
Subtotal, excluding N.L	***	***	***	***	***	***	***
Chloride process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Subtotal 2/	349,582	338,716	424,303	425,739	448,580	262,093	271,555
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Total	757,916	603,949	693,726	668,583	694,244 3/	357,075	376,274
Total, excluding N.L	***	***	***	***	***	***	***

1/ Not available.
2/ * * *.
3/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 5.--Titanium dioxide: Share of each U.S. producers' production accounted for by the chloride process, by firm, 1974-78, January-July 1978, and January-July 1979

(In percent)

Firm	1974	1975	1976	1977	1978	January-July--	
						1978	1979
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Average	2/ 46.1	2/ 56.1	2/ 61.2	2/ 63.7	2/ 64.6	2/ 73.4	2/ 72.2

1/ Not available.
2/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 6.--Titanium dioxide: Ratio of production to capacity (ratio of capacity utilization), by manufacturing process, by firm, 1974-78, January-July 1978, and January-July 1979

(In percent)

Manufacturing process and firm	1974	1975	1976	1977	1978	January-July--	
						1978	1979
Sulfate process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Average, sulfate process 3/	40.2	27.8	35.4	28.6	54.0	49.7	49.5
Average, excluding N.L. 3/	***	***	***	***	***	***	***
Chloride process:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Average, chloride process 3/	87.8	69.8	86.2	89.6	90.1	90.5	89.8
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Average 3/	64.3	49.9	66.8	65.5	80.4	79.2	78.2
Average, excluding N.L 3/	***	***	***	***	***	***	***

1/ Not applicable.
2/ Not available.
3/ Average includes only those producers that reported both capacity and production.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

S.A. supply all the titanium dioxide from that source to the United States. In West Germany, three firms supply the U.S. market--Bayer A.G., 1/ Kronos Titan GmbH, and Pigment-Chemie GmbH. Bayer Antwerpen N.V. in Belgium is a wholly owned subsidiary of Bayer A.G. of West Germany, and Kronos Titan GmbH of West Germany is owned by N.L. Industries.

Two firms in the United Kingdom, BTP Tioxide Ltd. and LaPorte Industries, Ltd., supplied virtually all of the titanium dioxide to the United States from that source. According to information obtained from the U.S. Customs Service, LaPorte * * *. 2/ Treasury has ruled, however, that the ceramic grades of titanium dioxide sold by LaPorte to the United States were not at LTFV and were therefore excluded from its determination.

According to the best available information, foreign production capacity in the LTFV countries, as shown in table 7, amounted to 683,000 short tons in 1977, of which only 14 percent used the newer chloride process and 86 percent of which uses the more costly sulfate process for manufacture. No major changes in such capacity for production of titanium dioxide are currently comtemplated. 3/

Imported titanium dioxide pigments enter the United States under item 473.70 of the Tariff Schedules of the United States (TSUS). The rate of duty applicable to imports from most-favored-nations (including Belgium, France, West Germany and the United Kingdom) since January 1, 1972 has been 7.5 percent ad valorem. This rate of duty represents a reduction of 50 percent resulting from U.S. concessions granted during the Kennedy round of trade negotiations. Prior to January 1, 1968, the effective date of the first of the 5 staged reductions in duty resulting from the Kennedy round (the most-favored-nation rate of duty) had been 15 percent ad valorem. U.S. concessions granted under the recently concluded Tokyo Round of multilateral trade negotiations (MTN) provide that the most-favored-nation rate of duty for

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1/ The Treasury LTFV determinations excluded the titanium dioxide manufactured by Bayer AG and sold in the United States.

2/ According to information obtained during the hearing and in posthearing briefs, * * * percent of LaPorte's exports to the U.S. during the period of the Treasury investigation were ceramic grades of titanium dioxide, however, questionnaire responses received from * * *.

3/ See Statement of Evidence on behalf of Glidden Pigments Group, SCM Corp. p. 3.

Table 7.--Titanium dioxide: Production capacity in Belgium, France, West Germany, and the United Kingdom, by countries and plant location, 1977

Country, company, and plant location	Manufacturing process	Plant capacity (1,000 short tons)	Trade name
Belgium:			
Bayer Antwerpen-NV:			
Ghent	Sulfate	18	Bayertitan
Kronos SA: 1/			
Ghent	Sulfate	36	Kronos
Total, Belgium	-	54	
France:			
Thann et Mulhouse:			
Le Harve	Sulfate	54	Titafrance
Thann	Sulfate	22	Do.
Subtotal	-	76	-
Tioxide SA:			
Calais	Sulfate	56	Tioxide
Total, France	-	132	-
United Kingdom:			
BTP Tioxide Ltd.:			
Billingham	Sulfate	29	Tioxide
Greatham	Chloride	27	Do.
Grimsby	Sulfate	91	Do.
Subtotal	-	147	-
LaPorte Industries, Ltd.:			
Stallingborough, Lincolnshire	Sulfate	49	Runna and
	Chloride	36	Tiona
Total, United Kingdom	-	232	-
West Germany:			
Bayer AG: 2/			
Krefeld	Sulfate	62	Bayertitan
	Chloride	20	Do.
Kronos Titan GmbH: 1/			
Leverkusen	Sulfate	74	Kronos
	Chloride	15	Do.
Nordenham	Sulfate	49	Do.
Subtotal	-	138	-
Pigment-Chemie GmbH:			
Duisburg	Sulfate	45	Hombitan
Total, West Germany	-	265	-
Grand total	-	683	-

1/ Owned by N.L. Industries.
2/ Excluded from Treasury's determination.

Source: Estimated on the basis of trade literature and information supplied by the domestic industry.

titanium dioxide be reduced to 6 percent ad valorem. The statutory rate of duty applicable to titanium dioxide--that is, the rate of duty applicable to certain designated Communist-dominated countries--is 30 percent ad valorem.

Imports from designated beneficiary developing countries are eligible for duty-free treatment under the Generalized System of Preferences (GSP). Imports from Belgium, France, West Germany, and the United Kingdom are not eligible for such treatment.

Nature and Extent of Alleged Sales at Less than Fair Value

On September 8, 1978, the Department of Treasury received a complaint from counsel on behalf of SCM Corp., alleging that titanium dioxide imported from Belgium, France, West Germany, and the United Kingdom is being, or is likely to be, sold in the United States at LTFV within the meaning of the Antidumping Act, 1921, as amended.

On August 7, 1979, Treasury notified the Commission that, on the basis of the information developed by the U.S. Customs Service, it had determined that titanium dioxide from Belgium, France, West Germany, and the United Kingdom, with the exception of that sold by Bayer AG of West Germany and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold at LTFV within the meaning of the act. The Treasury determinations excluded ceramic grades of titanium dioxide manufactured by LaPorte Industries on the grounds of no sales at LTFV, and discontinued the investigation on Bayer AG.

The 6-month period covered by Treasury's investigation extended from May 1, 1978, through October 31, 1978, and covered virtually all of the exports of titanium dioxide from Belgium, France, West Germany, and the United Kingdom during that period. Table 8 shows selected data on LTFV sales compared by Treasury.

Table 8.--Titanium dioxide: Summary of LTFV sales made during the period May 1, 1978, through October 31, 1978 examined by Treasury

Source and exporter	Percent of value of sales made to related U.S. Importers	Basis of LTFV comparison 1/	Percent of value of exports to U.S. examined by Treasury	Percent of value of exports examined found to be sold at LTFV	Estimated LTFV margins--			
					As a share of exporters' sales price or purchase price 2/		As a share of home market price (fair market value) 3/	
					Range	Weighted average 4/	Range	Weighted average 4/
	Percent		Percent					
Belgium:								
Bayer Antwerpen, N.V	***	***	100.0	89.0	0.3-21.5	9.8	0.3-17.7	8.9
Kronos S.A./N.V	***	***	100.0	52.2	1.4-16.4	11.2	1-4-14.1	10.1
Total or average	***	***	100.0	5/	.3-21.5	5/	.3-17.7	5/
France:								
Thann et Mullhouse S.A	***	***	100.0	100.0	21.0-27.2	22.6	17.4-21.4	18.4
Tioxide, S.A	***	***	100.0	100.0	16.7-36.3	24.8	14.3 26.6	19.9
Total or average	***	***	100.0	100.0	16.7-36.3	5/	14.3-26.6	5/
United Kingdom:								
BTP Tioxide, Ltd 12/	***	***	5/	100%	14.2-90.7	45.9	12.4-47.6	31.5
LaPorte Industries, Ltd	***	***	5/	9/ 94%	17.0-76.4	48.0	14.5-43.3	32.4
Total or average	***	***	95.0	5/	14.2-90.7	5/	12.4-47.6	5/
West Germany:								
Bayer, A.G. 10/	***	***	5/	9.9	.5-28.8	.1	0.5-22.4	.1
Kronos-Titan Gmbh	***	***	5/	29.0	2.7-33.2	14.3	2.6-24.9	12.5
Pigment Chemie Gmbh	***	***	5/	59.4	4.8-27.5	5.4	4.6-21.6	5.1
Total or average	***	***	65.0	5/	.5-33.2	5/	.5-24.9	5/

1/ (A) Purchase price vs. home-market price; (B) Exporter's sales price vs. home-market prices.
2/ As calculated by the U.S. Department of the Treasury.
3/ As calculated by the U.S. International Trade Commission.
4/ Based on the value of all sales (LTFV and non-LTFV) compared.
5/ Not available.
6/ * * *.

7/ Not applicable.
8/ * * *.
9/ Ninety-four percent of the nonceramic grades compared.
10/ Treasury has discontinued the investigation with respect to imports from Bayer, A.G.
11/ * * *.
12/ On Oct. 18, 1979, Dick Self, Director of Tariff Affairs, Department of the Treasury, indicated, in a telephone conversation with the Commission's staff, that Treasury's LTFV margin calculations on BTP Tioxide (United Kingdom) was in error. According to Mr. Self, Treasury has revised the LTFV margin downward for BTP Tioxide to 38.25 percent of the purchase price of the merchandise or 27.7 percent of the fair market value. Mr. Self's letter to the Commission, confirming the revised margin is presented in Appendix C.

Consideration of Injury or the Likelihood Thereof

U.S. consumption

Trends in U.S. consumption of titanium dioxide generally have followed the trends in general economic conditions of the country. Annual decreases in consumption of titanium dioxide have coincided with economic recessions in the United States, occurring in the early 1950's, 1957, 1960, 1970, and 1975. Apparent U.S. consumption totaled 788,000 short tons in 1974, declined to 615,000 short tons in the recession year of 1975 1/ but increased irregularly thereafter and in 1978 reached 774,000 short tons --2 percent below the 1974 level of consumption and 26 percent above consumption during the 1975 recession year low. Consumption increased by less than 0.1 percent during January-June 1979, as shown in table 9.

Table 9.--Titanium dioxide: U.S. production, foreign trade, and apparent consumption, 1974-78, January -June 1978 and January-June 1979.

Period	Production 1/	Exports	Imports			Apparent Consumption 2/	Ratio to apparent Consumption of imports--		
			From LTFV Countries	From all other Countries	From all Countries		From LTFV Countries	From all other Countries	From all Countries
	Short tons						Percent		
1974	757,916	30,379	19,064	15,932	34,996	787,502	2.4	2.0	4.4
1975	603.949	15,676	12,979	13,523	26,502	614,775	2.1	2.2	4.3
1976	693,726	20,555	44,777	24,039	68,816	741,987	6.0	3.3	9.3
1977	668,583	16,336	79,412	35,398	114,810	767,057	10.4	4.6	15.0
1978	694,244	37,812	81,430	36,278	117,708	774,140	10.5	4.7	15.2
Jan.-June									
1978	357,075 3/	10,846	47,267	15,567	62,874	409,103	11.6	3.8	15.4
1979	376,274 3/	25,163	34,256	24,969	59,225	410,336	8.3	6.1	14.4

1/ Compiled from data submitted in response to questionnaire of the U.S. International Trade Commission.
2/ Apparent consumption equals production plus imports minus exports.
3/ Estimated on the basis of questionnaire responses for January-July and January-July 1978 from firms that accounted for 88.8 percent of U.S. production during 1974-78.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

1/ A worldwide shortage of titanium dioxide from 1972 to 1974, resulting from increased demand coinciding with full plant utilization, resulted in a rise in foreign prices, a reduction in U.S. imports in 1973 and 1974, and a corresponding increase in U.S. exports. The adverse economic conditions in 1975 caused a further decline in U.S. imports and production and a drop in exports.

The surface-coating (paint, varnish, and lacquer) industry accounted for slightly more than one-half of titanium dioxide consumption during 1973-77; the paper and paperboard industry consumed about 20 percent, and the plastics industry about 10 percent. The following table shows U.S. consumption of titanium dioxide by major end uses 1973-77.

Titanium dioxide: U.S. consumption, by major-end use products, 1973-77

(In percent)

Product	1973	1974	1975	1976	1977 1/
Paint, varnish, and lacquer	51.8	53.3	57.2	51.8	51.2
Paper and paperboard	21.8	20.4	20.7	20.4	22.8
Plastics	10.1	11.9	7.7	11.4	11.9
Elastomers	3.0	2.7	2.7	2.6	2.6
Ceramics	2.5	2.1	1.9	1.8	1.6
All others 2/	10.8	9.6	9.8	10.0	9.9
Total	100.0	100.0	100.0	100.0	100.0

1/ Preliminary.

2/ Includes certain floor coverings, printing inks, roofing granules, and other miscellaneous products.

Source: Estimated on the basis of trade literature and information supplied by the domestic industry. No such estimates are available for 1978 and 1979.

U.S. production

U.S. production of titanium dioxide, as compiled from questionnaire responses of the U.S. producers, declined from 758,000 short tons in 1974 to 604,000 short tons in 1975 but increased irregularly thereafter to 694,000 short tons in 1978, as shown in table 9. U.S. production in 1978 was 8 percent below the 1974 production level but up 15 percent from the 1975 recession year low. Excluding N.L. Industries' production from the total, however, as shown in table 4, results in U.S. production in 1978 that is at its highest level during the 1974-78 period--4 percent above the 1974 level, 31 percent above the recession year 1975 level, and 3 percent above the 1976 and 1977 levels. Approximately 75 percent of titanium dioxide production in 1978 consisted of rutile grade pigments; anatase pigments accounted for about 25 percent. About 73 percent of U.S. production of titanium dioxide pigments in 1978 was in dry form while 27 percent (on a dry-weight basis) was in slurry form.

Production of titanium dioxide in slurry form by the responding firms increased without interruption between 1974 and 1978 increasing from 7 percent of total production in 1974 to 27 percent in 1978. Rutile slurry was produced principally for use by the paint, varnish, and lacquer industry and the paper industry with small amounts used by the rubber industry, the textiles and coated fabrics and the plastics industries. Anatase slurry was produced principally for use by the paper industry with small amounts for use by the textiles and coated fabrics industry. Table 10 shows U.S. production of titanium dioxide, total, by firm, and by type of TiO_2 pigment, 1974-78, January-July 1978 and January-June 1979. 1/

U.S. producers' shipments

Total shipments of titanium dioxide by U.S. producers, as compiled from their questionnaire responses, including interplant shipments, declined from 705,000 short tons in 1974 to 580,000 short tons in 1975 rising to 684,000 short tons in 1976 and falling to 661,000 short tons in 1978, as shown in table 11. Commercial shipments of titanium dioxide by U.S. producers followed the same trend, declining from 658,000 short tons in 1974 to 542,000 short tons in 1975, increasing in 1976 to 642,000 short tons and falling in 1978 to 621,000 short tons. Excluding N.L. Industries, commercial shipments by U.S. producers in 1978 were 6 percent above the 1974 level and 26 percent above the 1975 level, but were down 4 percent from the level attained in 1977. Captive consumption of titanium dioxide by U.S. producers ranged from 5.6 percent to 6.7 percent of total U.S. producers' shipments during 1974-78.

On the basis of quantity, shipments by reporting firms during January-June 1979 were up about 6 percent from the sales level for the first 7 months of 1978. Sales of titanium dioxide in slurry form by the responding producers increased more than 3 1/2 times, from *** short tons in 1974 to *** short tons in 1978. Sales of titanium dioxide in slurry form continued to increase during the first 7 months of 1979--up 11 percent from the level of sales during January-July 1978. Based on the average value of sales, slurry sold by the responding firms was priced about 2 cents per pound below the price for titanium dioxide sold in dry form (table 12).

As shown in table 13, the share of U.S. consumption supplied by SCM and DuPont trended upward between 1974 and 1978 while the share supplied by NL Industries (from its U.S. production), and Gulf & Western trended downward.

1/ Data on capacity utilization are presented on page A-12 and in tables 2-6.

Table 10.--Titanium dioxide: U.S. production by types of pigment and by firms, 1974-78, January-July 1978, and January-July 1979

(In short tons)

Type of pigment and firm	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
Anatase:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Rutile:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form 2/:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form 2/:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total, all types:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western 1/	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Total	757,916	603,949	693,726	668,583	694,244	5/ 357,075	5/ 376,270

1/ ***.
2/ Dry-weight content.
3/ Estimated on the basis of data available for the first 9 months of 1977 and 1978.
4/ Not available. 5/ * * *.

Source: Compiled from data submitted by four U.S. producers that accounted for * * * percent of total U.S. production of titanium dioxide during 1974-78 for production by type of pigment, and by all producers for total production, in response to questionnaires of the International Trade Commission.

Table 11.--Titanium dioxide: U.S. producers' intracompany shipments (captive consumption), other shipments, and total shipments, 1974-78

Year	Intracompany shipments (captive consumption)	Other shipments	Total shipments	Ratio of intracompany shipments to total shipments
	short tons			Percent
1974	47,311	657,625	704,936	6.7
1975	37,803	541,903	579,706	6.5
1976	42,479	641,648	684,127	6.2
1977	37,308	626,525	663,833	5.6
1978	39,549	621,265	660,814	6.0

Source: Compiled from responses from all U.S. producers of titanium dioxide to questionnaires of the U.S. International Trade Commission.

Table 12.—Domestic sales by U.S. producers, by type of pigments, 1974-78, January-July 1978 and January-July 1979

Type of pigment and Firm	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
	Quantity (short tons)						
Anatase:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form 1/:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Rutile:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form 1/:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
In slurry form 1/:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total, all types:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
American Cyanamid	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Total	657,625	541,903	641,648	626,525	621,265	5/ 339,667	5/358,953
Total, excluding NL industries	***	***	***	***	***	***	***

See footnotes at end of table.

Table 12—Domestic sales by U.S. producers, by type of pigments, 1974-78, January-July 1978 and January-July 1979--(Continued)

Type of pigment and Firm	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
	Actual return on sales (1,000 dollars) 4/						
Anatase:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	72,859	63,407	80,880	88,357	66,260	40,554	46,553
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	56,170	32,144	35,717
Rutile:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	283,585	179,250	204,312
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	70,395	44,629	57,117
Total:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	349,845	219,804	250,865
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	126,565	76,773	92,834
Total, all types:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	356,948	343,468	439,599	442,791	439,124	271,694	315,733

See footnotes at end of table.

Table 12.--Domestic sales by U.S. producers, by type of pigments, 1974-78, January-July 1978 and January-July 1979--Continued

Type of pigment and Firm	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
	Average Unit Value of Sales (cents per pound)						
Anatase:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	32.6	37.9	42.0	44.4	42.1	41.7	45.6
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	40.7	40.2	43.0
Rutile:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	46.5	45.4	50.0
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	44.8	44.3	49.2
Total:							
In dry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	45.6	44.6	49.1
In slurry form:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	43.1	42.7	46.9
Total, all types:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	33.3	39.3	42.9	44.2	44.3	43.7	47.9

1/ Reported in dry-weight content.
2/ Estimated on the basis of data available for the first 9 months of 1977 and 1978.
3/ Not available.
4/ Actual return on sales (i.e., the actual gross returns received less all discounts, allowances, and inland freight from plant or warehouse).
5/ Included with sales in dry form.
6/ Does not include rutile in slurry form.
7/ Not comparable. 8/ * * *.

Source: Compiled from data submitted by four U.S. producers that accounted for *** percent of total producers commercial sales of titanium dioxide during 1974-77 in response to questionnaires of the U.S. International Trade Commission.

Note.--Data presented for NL Industries, except total shipments, by quantity, include shipments of imports.

Table 13.--Share of apparent U.S. consumption accounted for by U.S. producers' shipments, by firm, 1974-78

(In percent)

Firm	1974	1975	1976	1977	1978
Open-market shipments:					
SCM	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries 1/	***	***	***	***	***
Gulf & Western	***	***	***	***	***
Subtotal	***	***	***	***	***
American Cyanamid	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total	83.5	88.2	86.3	81.6	80.3
Captive consumption:					
SCM	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
American Cyanamid	***	***	***	***	***
Total	6.0	6.1	5.6	4.9	5.1
Total:					
SCM	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries 1/	***	***	***	***	***
Gulf & Western	***	***	***	***	***
Subtotal	***	***	***	***	***
American Cyanamid	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Subtotal	***	***	***	***	***
Total	89.5	94.3	91.9	85.9	85.4

1/ Inclusion of N.L. Industries' sales of imports along with its sales of domestic production results in the following market shares for N.L.:

Year	Share (percent) of consumption accounted for by N.L.'s-- Open-market shipments	Total shipments
1974	***	***
1975	***	***
1976	***	***
1977	***	***
1978	***	***

Source: Compiled from data received in response to questionnaires of the U.S. International Trade Commission.

U.S. exports

U.S. exports of pigment grade titanium dioxide during 1974-78, as reported in official statistics of the U.S. Department of Commerce, fluctuated between a low of 15,676 short tons in the recession year of 1975 and a high of 37,812 short tons in 1978 (table 14). U.S. exports in the first half of 1979 amounted to 25,163 short tons--more than double the level of exports for the corresponding period of 1978. Principal markets for U.S. exports of titanium dioxide pigments in recent years included the Republic of Korea, Canada, France, Belgium, Japan, and Venezuela.

As a share of U.S. production, exports declined irregularly from 4 percent in 1974 to 3 percent in 1976, and to 2 percent in 1977. In 1978, exports of titanium dioxide pigments increased to 6 percent of U.S. production and in the first half of 1979 exports reached 7 percent of production, as shown in table 6.

Export data supplied by the firms that responded to the Commission's questionnaire followed the same trend reported in official statistics of the U.S. Department of Commerce. * * *. Table 15 shows exports by type of pigment for the responding U.S. producers for 1974-78, January-July 1978 and January-July 1979.

Table 14.--Titanium dioxide: U.S. exports of domestic merchandise, by principal markets, 1974-78, January-June 1978 and January-June 1979

Market	1974	1975	1976	1977	1978	Jan.-June-- 1978	Jan.-June-- 1979
	Quantity (short tons)						
Republic of Korea	1,817	1,409	2,241	2,878	4,798	1,811	3,515
Canada	2,621	2,222	3,706	2,923	3,484	1,426	2,038
France	486	303	487	283	4,274	247	2,209
Belgium	404	201	133	362	3,243	855	2,315
Japan	2,987	1,415	1,355	1,065	1,587	327	1,577
Venezuela	1,876	2,189	3,275	2,148	2,429	102	1,086
United Kingdom	328	95	667	160	1,887	117	1,250
Italy	360	78	0	188	2,473	1,550	1,944
Taiwan	688	368	340	436	1,654	26	1,067
Netherlands	775	141	561	262	1,628	154	165
Thailand	229	0	148	236	1,452	432	1,124
Brazil	4,415	993	2,518	1,805	759	309	392
West Germany	126	803	375	366	857	560	1/
Philippines	2,637	468	434	276	654	172	442
Australia	538	249	580	458	662	557	308
Colombia	1,141	446	508	498	329	169	513
Mexico	1,226	461	434	280	235	60	356
Jamaica	187	403	589	366	202	122	106
All other	7,538	3,432	2,204	1,235	5,203	1,850	4,756
Total	30,379	15,676	20,555	16,225	37,812	10,846	25,163
	Value (1,000 dollars)						
Republic of Korea	1,991	1,189	1,904	2,227	3,830	1,478	3,320
Canada	1,452	1,512	2,839	2,102	2,694	1,053	1,673
France	321	249	367	214	2,425	142	1,440
Belgium	255	150	164	292	1,944	546	1,817
Japan	2,747	1,094	1,074	905	1,735	367	1,593
Venezuela	1,323	1,760	2,502	1,568	1,691	693	1,095
United Kingdom	218	75	437	127	1,643	80	798
Italy	220	66	-	154	1,300	805	1,188
Taiwan	567	258	273	314	1,168	19	970
Netherlands	598	101	419	166	1,032	88	190
Thailand	246	-	117	171	892	272	989
Brazil	3,545	809	2,110	1,517	782	291	476
West Germany	160	462	341	328	722	433	13
Philippines	2,260	367	357	226	507	140	403
Australia	331	197	449	367	474	384	256
Colombia	1,178	354	404	394	282	134	519
Mexico	703	183	158	135	156	62	540
Jamaica	214	329	460	240	156	94	101
All other	6,246	2,821	1,780	1,059	3,534	695	4,143
Total	24,575	11,976	16,155	12,506	26,967	7,776	21,524

1/ Less than 1 short ton.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 15.--U.S. exports of titanium dioxide by firms that responded to the Commission's questionnaire, 1974-78, January-July 1978 and January-July 1978

Type of pigment and Firm	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
	Quantity (short tons)						
Anatase:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Rutile:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Total	19,236	13,569	19,786	17,383	36,945	3/	3/
	Actual return on sales (1,000 dollars) 1/						
Anatase:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Rutile:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Total	15,439	9,446	13,096	11,764	21,207	7,045	14,974
	Unit value (cents per pound)						
Anatase:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	***	***	***
Rutile:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	***	***	***	***	***	***	***
Total:							
SCM	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Gulf & Western	***	***	***	***	***	***	***
Average	40.2	39.5	38.8	37.4	29.8	30.0	40.5

1/ Actual return on sales (i.e., gross returns net of discounts, allowances, and inland freight charges from plant or warehouse).

2/ Estimated based on questionnaire data available for the first nine months of 1977 and 1978.

3/ Data not available.

Source: Compiled from data submitted by four U.S. producers that accounted for *** percent of U.S. exports of titanium dioxide during 1974-78 for data on exports by type of pigment and from all U.S. producers for the total quantities of exports, in response to questionnaires of the U.S. International Trade Commission.

U.S. imports

The quantity of U.S. imports of titanium dioxide more than tripled between 1974 and 1978, increasing irregularly from 34,996 short tons in 1974 to 117,708 short tons in 1978, as shown in tables 16 and 17. Between 1974 and 1978 the value of imports also increased irregularly from $24.4 million to $90.7 million. During the first half of 1979, total imports were down by 6 percent in terms of quantity and 1 percent in terms of value from the corresponding period of 1978. The decline in imports during the first half of 1979 was due entirely to reduced shipments from the four countries involved in these investigations (down by 28 percent in the aggregate). Imports from all other sources increased by nearly 60 percent in the aggregate during January-June 1979 compared with the corresponding period of 1978. Quarterly import data for 1978 and January-August 1979 are presented in table 18.

Imports from Belgium, France, West Germany, and the United Kingdom in the aggregate, increased 4-times between 1974 and 1978, from 19,064 short tons in 1974 to 81,430 short tons in 1978. The value of those imports increased nearly five-times, from $13.0 million in 1974 to $63.3 million in 1978. Individually, imports from each of these sources were substantially higher in 1978 than they were in 1974. Based on quantity, imports from West Germany in 1978, by far the principal source, were more than 5 times the 1974 level of imports as were imports from Belgium, while those from the United Kingdom and France each more than tripled. During the first half of 1979, however, imports from each of the four countries declined, in comparison to the corresponding period of 1978--imports from Belgium by 75 percent; imports from France by 5 percent; imports from the United Kingdom by 20 percent; and imports from West Germany by 25 percent.

Table 17 shows the share of total U.S. imports of titanium dioxide supplied by the principal foreign sources during 1974-78, January-June 1978, and January-June 1979. Aggregate imports from the countries from which LTFV sales in the United States have occured, increased their share of the total from 54 percent in 1974 to 69 percent in both 1977 and 1978. Between 1974 and 1978, imports supplied by West Germany and Belgium trended upward while the share of total imports supplied by the United Kingdom and France trended slightly downward. For the first half of 1979, imports from West Germany, the United Kingdom, and Belgium all declined from the share they each supplied during the first of 1978, while the share supplied by France remained unchanged.

Table 16.—Titanium dioxide: U.S. imports for consumption, by principal sources, 1974-78, January-June 1978, and January-June 1979

Source	1974	1975	1976	1977	1978	Jan.-June-- 1978	Jan.-June-- 1979
	Quantity (Short tons)						
West Germany	7,542	5,431	20,069	46,690	39,973	25,545	19,218
United Kingdom	6,540	5,610	11,941	16,182	21,467	11,423	9,155
Belgium	1,666	57	6,703	11,501	8,936	5,578	1,414
France	3,316	1,881	6,064	5,039	11,054	4,721	4,469
Subtotal	19,064	12,979	44,777	79,412	81,430	47,267	34,256
Canada	7,056	9,971	11,285	15,636	17,242	7,605	10,419
Finland	6,474	2,049	4,812	4,688	5,110	2,467	3,187
Japan	1,301	580	3,641	3,085	3,562	1,458	2,399
Australia	37	507	1,747	2,573	2,632	896	2,105
Norway	1	0	1,786	3,614	1,920	280	1,721
All other	1,063	416	768	5,802	1/ 5,812	2/ 2,861	3/ 5,138
Grand total	34,996	26,502	68,816	114,810	117,708	62,834	59,225
	Value (1,000 dollars)						
West Germany	5,438	4,539	18,857	34,742	33,935	21,928	17,251
United Kingdom	3,982	3,448	7,707	10,861	14,362	7,481	7,081
Belgium	1,229	34	4,503	8,830	7,082	4,472	986
France	2,328	1,137	4,190	3,542	7,943	3,351	3,458
Subtotal	12,977	9,158	32,257	57,975	63,322	37,232	28,776
Canada	4,784	6,604	8,538	12,246	13,847	5,963	8,737
Finland	4,380	1,307	3,247	3,242	3,644	1,754	2,417
Japan	1,592	501	3,606	2,805	2,926	1,223	2,089
Australia	24	280	971	1,487	1,654	556	1,358
Norway	4/	-	1,273	2,726	1,467	211	1,345
All other	671	281	449	4,231	1/ 3,881	2/ 1,925	3/ 3,675
Grand total	24,428	18,131	50,341	84,712	90,741	48,864	48,397
	Unit value (cents per pound)						
West Germany	36.0	41.8	39.5	37.4	42.4	42.9	44.9
United Kingdom	30.4	30.7	32.3	33.6	33.4	32.8	38.7
Belgium	36.9	29.5	33.6	38.4	39.6	40.1	34.9
France	35.1	30.2	34.5	35.1	35.9	35.9	38.7
Average	34.0	35.3	36.0	36.6	38.9	33.4	42.0
Canada	33.9	33.1	37.8	39.2	40.2	39.2	41.9
Finland	33.8	31.9	33.7	34.6	35.7	35.6	37.9
Japan	61.2	43.2	49.5	45.4	41.1	42.0	43.5
Australia	31.5	27.6	27.8	28.9	31.4	31.0	32.2
Norway	40.7	-	35.6	37.7	38.2	37.6	39.1
All other	31.6	33.8	29.2	35.2	1/ 33.3	2/ 33.6	3/ 35.8
Average, all countries	34.9	34.2	36.6	36.9	38.5	38.9	41.2

1/ Includes 3,060 short tons, valued at $2,025,000, with a unit value of 33.1 cents per pound, imported from Spain.

2/ Includes 1,160 short tons, valued t $782,000, with a unit value of 33.7 cents per pound, imported from Spain.

3/ Includes 3,718 short tons, valued at $2,622,000 with a unit value of 35.3 cents per pound, imported from Spain.

4/ Less than $500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 17.--Titanium dioxide: Share of total quantity of imports, by principal sources, 1974-78, January-June 1978, and January-June 1979

(In percent)

Source	1974	1975	1976	1977	1978	January-June--	
						1978	1979
West Germany	21.5	20.5	29.2	40.6	34.0	40.6	32.4
United Kingdom	18.7	21.2	17.4	14.1	18.2	18.2	15.5
Belgium	4.8	.2	9.7	10.1	7.6	8.9	2.4
France	9.5	7.1	8.8	4.4	9.4	7.5	7.5
Total	54.5	49.0	65.1	69.2	69.2	75.2	57.8
Canada	20.2	37.6	16.4	13.6	14.6	12.1	17.6
Finland	18.5	7.7	7.0	4.1	4.3	3.9	5.4
Japan	3.7	2.2	5.3	2.7	3.0	2.3	4.1
Australia	.1	1.9	2.5	2.2	2.2	1.4	3.6
Norway	1/	0	2.6	3.1	1.6	.4	2.9
All other	2.9	1.6	1.1	5.1	5.1	4.6	8.6
Total all countries	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Less than 0.05 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 18.--Titanium dioxide: U.S. imports for consumption, from LTFV countries, and from all other sources, by specified periods, January 1978-August 1979

Source	1978				1979		
	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Aug.
LTFV countries:							
West Germany	3,645	1,934	863	2,494	669	744	499
United Kingdom	2,907	1,813	3,398	2,935	2,068	2,401	468
Belgium	8,554	16,991	8,560	5,868	6,763	12,453	6,100
France	4,612	6,809	6,400	3,646	3,539	5,616	1,561
Subtotal	19,718	27,547	19,221	14,943	13,039	21,214	8,628
All other countries	7,053	8,516	11,016	9,693	10,164	14,807	9,629
Total	26,771	36,063	30,237	24,636	23,203	36,021	18,257

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 19 shows U.S. imports from Belgium, France, the United Kingdom, and West Germany as reported to the Commission by U.S. importers. These imports accounted for 55 percent of the total imports from those sources as reported in official statistics for 1978 and 89 percent as reported for 1977. The table excludes imports from *** as the firm was unable to supply complete data on the value of their imports. If imports by *** were included for 1978 the Commission's coverage would increase to about *** percent of total imports from the four sources as reported in official statistics. Table 20 shows sales as reported by the U.S. importers. This table includes sales by *** which was able to supply complete sales data but excludes sales of imports by NL Industries. NL Industries, which imports from Belgium and West Germany does not distinquish between imported and domestic TiO_2 and could not supply sales value data by source of imports. It did, however, report total sales of imports from Belgium and West Germany as shown in table 21. NL's sales are incorporated in total import sales in table 22.

Table 19.--Titanium dioxide: U.S. imports from Belgium, France, West Germany, and the United Kingdom, as reported in response to questionnaires, 1974-78, January-July 1978 and January-July 1979

Source	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
	Quantity (short tons)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany	***	***	***	***	***	***	***
Total	2,194	5,025	36,850	70,286	44,802	28,971	26,023
	Landed value (1,000 dollars)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany	***	***	***	***	***	***	***
Total	1,657	3,604	28,639	58,906	38,474	23,419	23,324
	Unit value (cents per pound)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany	***	***	***	***	***	***	***
Average	37.8	35.9	38.9	41.9	42.9	42.9	44.8

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 20.--Sales of titanium dioxide from Belgium, France, the United Kingdom, and West Germany (except sales by N.L. Industries), as reported by U.S. importers, 1974-78, January-July 1978 and January-July 1979.

Source	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
	Quantity (short tons)						
Belgium 1/	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
	Value (1,000 dollars) 2/						
Belgium 1/	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany 1/	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
	Unit value (cents per pound)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
West Germany	***	***	***	***	***	***	***
Average	***	***	***	***	***	***	***

1/ Excludes sales of imports by NL Industries, which was unable to supply separate data for its sales of imported TiO_2. If sales by NL are included, the total quantity of import sales from the two countries in question accounted for *** percent of total imports from those sources in 1978.

2/ Actual return on sales, net of all discounts, allowances, and inland freight charges from warehouse.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 21.--Sales of titanium dioxide imported from Belgium and West Germany by N.L. Industries, by type of pigment, 1976-78, January-July 1978, and January-July 1979

Item	1976	1977	1978	January-July-- 1978	January-July-- 1979
	Quantity (short tons)				
Anatase:					
Dry	***	***	***	***	***
Slurry 1/	***	***	***	***	***
Total	***	***	***	***	***
Rutile:					
Dry	***	***	***	***	***
Slurry 1/	***	***	***	***	***
Total	***	***	***	***	***
	Value (1,000 dollars) 2/				
Anatase:					
Dry	***	***	***	***	***
Slurry	***	***	***	***	***
Total	***	***	***	***	***
Rutile:					
Dry	***	***	***	***	***
Slurry	***	***	***	***	***
Total	***	***	***	***	***
	Unit value (cents per pound)				
Anatase:					
Dry	***	***	***	***	***
Slurry	***	***	***	***	***
Average	***	***	***	***	***
Rutile:					
Dry	***	***	***	***	***
Slurry	***	***	***	***	***
Average	***	***	***	***	***

1/ Dry-weight content.

2/ Actual return on sales less discounts, allowances and freight from warehouse.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 22.--Sales of titanium dioxide from Belgium, France, the United Kingdom, and West Germany, (including sales by N.L. Industries), as reported by U.S. importers, 1974-78, January-July 1978 and January-July 1979.

Source	1974	1975	1976	1977	1978	January-July-- 1978	January-July-- 1979
	Quantity (short tons)						
Belgium and West Germany 1/	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
Total	6,407	6,160	25,637	59,224	52,663	31,659	29,932
	Value (1,000 dollars) 2/						
Belgium and West Germany 1/	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
Total	4,740	4,662	22,211	53,993	49,558	28,499	28,501
	Unit Value (Cents per pound)						
Belgium and West Germany 1/	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
United Kingdom	***	***	***	***	***	***	***
Average	37.0	37.8	43.3	45.6	47.1	45.0	47.6

1/ Includes sales by NL Industries, which was unable to supply separate data for its sales of imported TiO_2 from Belgium and West Germany.

2/ Actual return on sales, net of all discounts, allowances, and inland freight charges from warehouse.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. producers' inventories

Four firms supplied end-of-period inventory data for 1974-78, and three firms supplied such data for January-July 1978 and January-July 1979. Inventories by the responding producers increased without interruption from 36,000 short tons in 1974 to 99,000 short tons in 1976, but declined by 1978 to 86,000 short tons. Inventories at the end of July 1979 were down by 23 percent from the inventory level at the end of July 1978, as shown in table 23. Excluding NL Industries from the total as shown in table 24, results in an increase in inventories from * * * short tons in 1974 to * * * short tons in 1976, and a drop to * * * short tons in 1978.

Table 23.--Titanium dioxide: U.S. producers' end-of-period inventories by type of pigments, 1974-78, January-July 1978, and January-July 1979

(In short tons)

Period	Anatase	Rutile	Total
1974	7,281	28,774	36,055
1975	12,332	51,239	63,571
1976	17,927	81,007	98,934
1977	21,068	69,201	90,269
1978	17,966	67,781	85,747
January-July--			
1978	21,637	47,376	69,013
1979	14,446	38,457	52,903

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

End-of-period inventories held by the respondents increased in the aggregate from 6 percent of their production in 1974 (*** percent, if NL's inventories are not included) to 18 percent in 1976 *** percent excluding NL). In 1978, the inventories were equivalent to 15 percent of production (*** percent without NL). As shown in table 24, *** Inventory to shipments ratios were generally in line with inventory to production ratios throughout the period.

U.S. employment

U.S. employment, as reported to the Commission by questionnaire, trended downward between January 1, 1974, and July 31, 1979. Data for only part of the period covered by the questionnaire were reported by 1 of the 6 domestic producers and complete data for the entire period were reported by 4 of the 6 firms. One firm, *** reported no employment data. 1/ Employment of production and related workers engaged in the production of titanium dioxide, as reported by firms that supplied data for the entire period, fell by 24 percent between 1974 and 1978; however, this decline was due entirely to the closure of the Missouri plant by NL Industries in 1978. Table 25 shows the average number of all persons including production and related workers employed in U.S. establishments in which titanium dioxide was produced, by firms, 1974-78, January-July 1978, and January-July 1979.

1/ ***.

Table 24.--U.S. production, domestic shipments and end-of-period inventories, by U.S. producers, 1974-78, January-July 1978 and January-July 1979.

Period and firm	Production	Domestic shipments	End-of-period Inventory	Ratio of inventories to-- Domestic production	Ratio of inventories to-- Domestic shipments
	Short tons	Short tons	Short tons	Percent	Percent
1974:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Subtotal or average	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total or average	598,751	505,838	36,055	6.0	7.1
Total or average, excluding N.L. Industries	***	***	***	***	***
1975:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Subtotal or average	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total or average	495,125	432,430	63,571		14.7
Total or average, excluding N.L. Industries	***	***	***	***	***
1976:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Subtotal or average	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total or average	560,724	512,463	98,934	17.6	19.3
Total or average, excluding N.L. Industries	***	***	***	***	***
1977:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Subtotal or average	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total or average	535,391	491,391	90,269	16.9	18.2
Total or average, excluding N.L. Industries	***	***	***	***	***
1978:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Subtotal or average	***	***	***	***	***
Kerr-McGee	***	***	***	***	***
Total or average	558,235	487,087	85,747	15.4	17.6
Total or average, excluding N.L. Industries	***	***	***	***	***
January-July:					
1978:					
SCM Corp	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Total or average 1/	294,692	274,947	69,013	25.1	25.1
Total or average, excluding N.L. Industries 1/	***	***	***	***	***
1979:					
SCM Corp.	***	***	***	***	***
DuPont	***	***	***	***	***
N.L. Industries	***	***	***	***	***
Total or average 1/	306,037	289,503	52,903	17.3	18.3
Total or average, excluding N.L. Industries 1/	***	***	***	***	***

1/ Does not include Kerr-McGee.

Source: Compiled from data submitted in response to questionnaires of the U. S. International Trade Commission by U.S. producers that accounted for *** percent of the U.S. production of titanium dioxide during 1974-78 and *** percent of U.S. producers' shipments of titanium dioxide during the same period.

Note.--Inventory data for NL estimated on the basis of inventory data reported by questionnaire responses, which includes imports, less the ratio of NL's imports to its total domestic supply available for sale (imports plus domestic production).

Table 25.--Average number of all persons and production and related workers employed in U.S. establishments in which titanium dioxide was produced, by firms, 1974-78, January-July 1978 and January-July 1979

Item	1974	1975	1976	1977	1978	January-July	
						1978	1979
Average number employed:							
All persons:							
SCM Corp	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanimid	***	***	***	***	***	***	***
Total all firms	6,263	5,756	4,917	4,900	2/ 3,755	2/ 3,755	2/ 3,601
Production and related workers engaged in the production of:							
All products:							
SCM Corp	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanimid	***	***	***	***	***	***	***
Total all firms	4,431	4,009	3,388	3,523	2/ 2,908	2/ 2,954	2/ 2,909
Titanium dioxide:							
SCM Corp	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
N.L. Industries	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
American Cyanimid	***	***	***	***	***	***	***
Total	3,821	3,631	3,026	3,172	2/ 2,808	2/ 2,830	2/ 2,790

1/ Data not reported. 2/ ***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note: ***

Financial position of U.S. producers

Four of the six domestic producers supplied financial data to the Commission, as requested by questionnaires. In the aggregate, the net profits of the 4 firms fell from $39 million (11.8 percent of net sales) in 1974 to $13 million (3.8 percent of net sales) in 1975, rose to $44 million (9.9 percent of net sales) in 1976 and fell to $334,000 in 1978 (0.1 percent of net sales), as shown in table 26. The profits for the 4 firms improved sharply from $495,000 in January-July 1978 (0.2 percent of net sales) to $16 million during the corresponding period of 1979. The valuation of U.S. producers' net assets and profit ratios in comparison to such assets are presented in tables 27 and 28.

One of the 4 firms, *** reported losses in all years except 1974, while *** reported profits each year. During the first 7 months of 1979, when imports from Belgium, France, the United Kingdom and West Germany declined by 28 percent, all 4 respondents reported improved financial positions from the comparable period of 1978.

Table 26 shows selected financial data for all firms that responded to the Commissions' questionnaire. *** Deletion of N.L.'s data from industry totals, significantly improves the aggregate data for the rest of the industry. Without NL, the ratio of net profits to net sales for the industry falls from *** percent in 1974 to *** in 1975, increases to *** percent in 1976 and falls thereafter to *** percent in 1978. During January-July 1979, the industry profit accounted for *** percent of net sales--up significantly from the *** percent experienced during January-July 1978.

1/ ***

* * * * * * *

Table 26.—Financial position of U.S. producers of titanium dioxide on their titanium dioxide operations only, 1974-78, Jan.-July 1978 and Jan.-July 1979

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
Net sales:							
N.L. Industries 1/	***	***	***	***	***	***	***
Kerr-McGee 1/	***	***	***	***	***	***	***
DuPont 1/	***	***	***	***	***	***	***
SCM Corp. 3/	***	***	***	***	***	***	***
Total	333,306	334,171	447,611	485,512	475,819	292,901	346,433
Total, excluding N.L. Industries	***	***	***	***	***	***	***
Intracompany and intercompany transfers:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	36,962	30,590	38,394	36,999	50,955	4/	4/
Total:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	370,268	364,761	486,005	522,511	517,433	316,322	373,028
Cost of goods sold:							
Raw materials:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	4/	152,592	217,612	251,659	4/	4/	4/
Direct labor:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	4/	56,160	52,461	60,681	4/	4/	4/

See footnotes at end of table.

Table 26.--Financial position of U.S. producers of titanium dioxide on their titanium dioxide operations only, 1974-78, Jan.-July 1978 and Jan.-July 1979--Continued

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
Other factory costs:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	4/	117,558	119,606	124,539	4/	4/	4/
Opening inventory (finished goods):							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	4/	35,961	63,047	71,370	4/	4/	4/
Closing inventory (finished goods):							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	4/	63,047	71,370	87,247	4/	4/	4/
Total cost of goods sold:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	304,442	319,724	401,356	443,002	464,157	285,866	317,629
Gross profit (or loss):							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	65,827	45,037	84,649	79,509	43,276	29,956	55,399
Administrative expense:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	7,684	10,547	12,194	14,455	14,861	8,540	8,013

See footnotes at end of table.

Table 26.—Financial position of U.S. producers of titanium dioxide on their titanium dioxide operations only, 1974-78, Jan.-July 1978 and Jan.-July 1979—Continued

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	Jan.-July 1978	Jan.-July 1979
Selling expense:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	19,231	17,217	19,738	22,390	24,219	13,978	17,376
Total:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	26,915	27,764	31,932	36,845	39,080	22,518	25,389
Net operating profit (or loss):							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	38,912	17,273	52,717	36,845	14,196	8,068	30,010
Other income (or expense):							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	542	(4,687)	(8,406)	(9,821)	(13,862)	(7,573)	(14,207)
Net profit (or loss) before Federal or other income taxes:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Total	39,454	12,586	44,311	32,843	334	495	15,781
Total, excluding N.L. Industries	***	***	***	***	***	***	***
Ratio (percent) of net profit before income taxes to net sales:							
N.L. Industries	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
SCM Corp	***	***	***	***	***	***	***
Average	11.8	3.8	9.9	6.8	0.1	0.2	4.6
Average, excluding N.L. Industries	***	***	***	***	***	***	***

1/ Fiscal year ending Dec 31.
2/ Not reported.
3/ Fiscal year ending June 30.
4/ Data are incomplete.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 27.—U.S. producers' valuation of net assets used in the production of titanium dioxide, by firms, 1974-78, January-July 1978, and January-July 1979

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	January-July— 1978	January-July— 1979
Valuation of assets:							
Original cost:							
SCM Corp. 1/	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Total	284,416	333,215	340,851	370,044	350,044	379,592	385,238
Book value:							
SCM Corp. 1/	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Total	130,578	154,578	145,901	151,620	145,530	144,795	135,921
Replacement value:							
SCM Corp. 1/	***	***	***	***	***	***	***
DuPont	***	***	***	***	***	***	***
Kerr-McGee	***	***	***	***	***	***	***
Total	3/	3/	3/	690,228	760,168	3/	3/

1/ Fiscal year ending June 30.
2/ Not available.
3/ Data not complete.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 28.--Ratios of net profits before taxes to net assets used in the production of titanium dioxide and to net sales, by firm, 1974-78

(In percent)

Item	Ratio of net profits before taxes to--			
	Original cost	Book value	Replacement value	Net sales
1974:				
SCM Corp	***	***	***	***
DuPont	***	***	***	***
Average	***	***	***	***
1975:				
SCM Corp	***	***	***	***
DuPont	***	***	***	***
Average	***	***	***	***
1976:				
SCM Corp	***	***	***	***
DuPont	***	***	***	***
Average	***	***	***	***
1977:				
SCM Corp	***	***	***	***
DuPont	***	***	***	***
Average	***	***	***	***
1978:				
SCM Corp	***	***	***	***
DuPont	***	***	***	***
Average	***	***	***	***

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 29.--U.S. producers' capital expenditures to be used in their facilities that make titanium dioxide, by firms, 1974-78, January-July 1978, and January-July 1979

Item	1974	1975	1976	1977	1978	January-July--	
						1978	1979
Capital expenditures:							
Land:							
SCM Corp------1,000 dollars--	***	***	***	***	***	***	***
DuPont----------do----	***	***	***	***	***	***	***
Kerr-McGee ----------do----	***	***	***	***	***	***	***
Total 5/----------do----	***	***	***	***	***	***	***
Buildings:							
SCM Corp------1,000 dollars--	***	***	***	***	***	***	***
DuPont----------do----	***	***	***	***	***	***	***
Kerr-McGee ----------do----	***	***	***	***	***	***	***
Total 5/----------do----	***	***	***	***	***	***	***
Machinery and Equipment:							
SCM Corp------1,000 dollars--	***	***	***	***	***	***	***
DuPont----------do----	***	***	***	***	***	***	***
Kerr-McGee ----------do----	***	***	***	***	***	***	***
Total 5/----------do----	***	***	***	***	***	***	***
Total:							
SCM Corp------1,000 dollars--	***	***	***	***	***	***	***
DuPont----------do----	***	***	***	***	***	***	***
Kerr-McGee----------do----	***	***	***	***	***	***	***
Total----------do----	***	***	***	***	***	***	***
Ratio to net sales of total investment in land, buildings, machinery and equipment to be used in facilities that make titanium dioxide:							
SCM Corp----------percent--	***	***	***	***	***	***	***
DuPont----------do----	***	***	***	***	***	***	***
Kerr-McGree----------do----	***	***	***	***	***	***	***
Average----------do----	23.6	20.0	2.4	3.9	3.1	2.8	1.6

1/ Fiscal year ending June 30. 2/ * * *.
3/ Not available.
4/ * * *.
5/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 30.--U.S. producers' research and development expenditures related to production of titanium dioxide, by firm, 1974-78, January-July 1978 and January-July 1979

Item	1974	1975	1976	1977	1978	January-July--	
						1978	1979
Research and development expenditures:							
SCM Corp							
1,000 dollars	***	***	***	***	***	***	***
DuPont---------do----	***	***	***	***	***	***	***
Kerr-McGee-----do----	***	***	***	***	***	***	***
Total--------do----	***	***	***	***	***	***	***
Ratio to net sales of research and development expenditures:							
SCM Corp----Percent--	***	***	***	***	***	***	***
DuPont---------do----	***	***	***	***	***	***	***
Kerr-McGee-----do----	***	***	***	***	***	***	***
Average------do----	***	***	***	***	***	***	***

Source: Compiled from data supplied in response to questionnaires of the U.S. International Trade Commission.

Consideration of the Causal Relationship Between LTFV Imports and the Alleged Injury

Market penetration by LTFV imports

The share of U.S. consumption supplied by imports increased from 4.4 percent in 1974 to 15.2 percent in 1978, while imports from the LTFV countries--Belgium, France, West Germany, and the United Kingdom, in the aggregate, increased their share from 2.4 percent of consumption in 1974 to 10.5 percent of consumption in 1978. Table 31 shows U.S. consumption and the share of consumption supplied by imports from the 4 LTFV countries during recent years.

Importers were requested to supply data, by manufacturer of titanium dioxide in Belgium, France, the United Kingdom, and West Germany. Since all importers did not respond to the Commission's questionnaires, the data are incomplete, but offer an idea of at least the foreign manufacturers' minimum share of the U.S. titanium dioxide market. Table 32 shows the results of the questionnaire responses. Since returns are incomplete, the residual data in the table--representing the difference between the country totals as supplied by the Department of Commerce and the questionnaire totals--consist of imports from the sources that are named but that were exported to firms that did not respond to the Commission's questionnaires. The exceptions are ***. The ratios of imports by foreign sources to domestic consumption are shown in table 33, * * *.

Table 31.--Titanium dioxide: U.S. consumption and ratios to consumption of total imports and imports from Belgium, France, West Germany and the United Kingdom, 1974-78, January-June 1978, and January-June 1979

Period	Consumption	Ratio to consumption of--					
		Total imports	Imports from--				
			Belgium	France	West Germany	United Kingdom	Total
	Short tons	Percent	Percent	Percent	Percent	Percent	Percent
1974	787,502	4.4	0.2	0.4	1.0	0.8	2.4
1975	614,775	4.3	1/	.3	.9	.9	2.1
1976	741,987	9.3	.9	.8	2.7	1.6	6.0
1977	767,057	15.0	1.5	.6	6.2	2.1	10.4
1978	774,140	15.2	1.1	1.4	5.2	2.8	10.5
January-June:							
1978	409,103	15.4	1.4	1.2	6.2	2.8	11.6
1979	410,336	14.4	.3	1.1	4.7	2.2	8.3

1/ Less than 0.05 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.--Data presented above include "fair value" imports from Bayer AG of West Germany and fair value ceramic grades from LaPorte of the United Kingdom. See table 34 for total LTFV imports from Belgium, France, West Germany, and the United Kingdom, eliminating the fair value imports cited.

Table 32.--Titanium dioxide: U.S. imports for consumption by known manufacturers in LTFV countries, 1974-78, January-June 1978, and January-June 1979

(In short tons)

Source	1974	1975	1976	1977	1978	January-June--	
						1978	1979
Belgium:							
Bayer Antwerpen-NV	***	***	***	***	***	***	***
Kronos (N.L.)	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	1,666	57	6,703	11,501	8,936	5,578	1,414
France:							
Thann et Mulhouse, SA	***	***	***	***	***	***	***
Tioxide, SA	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	3,316	1,881	6,064	5,039	11,054	4,721	4,469
United Kingdom:							
La Porte Industries, Ltd	***	***	***	***	***	***	***
BTP Tioxide, Ltd	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	6,540	5,610	11,941	16,182	21,467	11,423	9,155
West Germany:							
Bayer AG, GmbH 2/	***	***	***	***	***	***	***
Kronos-Titan (N.L.)	***	***	***	***	***	***	***
Pigment Chemie	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	7,542	5,431	20,069	46,690	39,973	25,545	19,218

1/ Includes some imports from named firms that exported to U.S. importers that did not respond to the Commission's

2/ ***.

Source: Country totals compiled from official statistics of the U.S. Department of Commerce, data on individual firms compiled from responses to questionnaires of the U.S. International Trade Commission.

Table 33.--Titanium dioxide: Share of total U.S. consumption, by LTFV country and by known manufacturers, 1974-78, January-June 1978, and January-June 1979

(In percent)

Source	1974	1975	1976	1977	1978	Jan.-June-- 1978	Jan.-June-- 1979
Belgium:							
Bayer Antwerpen-NV	***	***	***	***	***	***	***
Kronos (N.L.)	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	.2	2/	.9	1.5	1.1	1.4	.3
France:							
Thann et Mulhouse, SA	***	***	***	***	***	***	***
Tioxide, SA	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	.4	.3	.8	.6	1.4	1.2	1.1
United Kingdom:							
La Porte Industries, Ltd	***	***	***	***	***	***	***
BTP Tioxide, Ltd	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	.8	.9	1.6	2.1	2.8	2.8	2.2
West Germany:							
Bayer AG, GmbH 3/	***	***	***	***	***	***	***
Kronos-Titan (N.L.)	***	***	***	***	***	***	***
Pigment Chemie	***	***	***	***	***	***	***
All other 1/	***	***	***	***	***	***	***
Total	1.0	.9	2.7	6.2	5.2	6.2	4.7

1/ Includes some imports from named firms that exported to U.S. importers that did not respond to the Commission's questionnaires.

2/ Less than 0.05 percent.

3/ * * *.

Source: Compiled from data presented in tables 6 and 27 of this report.

Not all imports from the 4 LTFV countries were found by Treasury to be sold at LTFV prices. Treasury exempted from its finding, all exports from Bayer AG, GmbH, of West Germany and all ceramic grades of titanium dioxide exported to the United States by LaPorte of the United Kingdom. Total LTFV import penetration is not affected much by the elimination of such imports from the total, as shown by a comparison of table 31 and table 34.

Table 34.--Titanium dioxide: LTFV imports from Belgium, France, the United Kingdom, and West Germany, 1974-78, January-June 1978, and January-June 1979

Source	1974	1975	1976	1977	1978	January-June--	
						1978	1979
	Quantity (short tons)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
West Germany 1/	***	***	***	***	***	***	***
United Kingdom 2/	***	***	***	***	***	***	***
Total	18,509	10,141	44,096	78,859	80,793	46,827	34,147
	Ratio of imports to consumption (percent)						
Belgium	***	***	***	***	***	***	***
France	***	***	***	***	***	***	***
West Germany 1/	***	***	***	***	***	***	***
United Kingdom 2/	***	***	***	***	***	***	***
Total	2.4	1.6	5.9	10.3	10.4	11.4	8.3

1/ Does not include Bayer AG, GmbH, which was exempted from Treasury's LTFV determination.

2/ Adjusted to eliminate LaPorte's ceramic grades of merchandise, as estimated by Treasury to amount to *** percent of LaPorte's exports to the United States.

3/ Less than 0.05 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce and responses to questionnaires of the U.S. International Trade Commission.

Note.--Totals may not add due to rounding.

Pricing policies

Domestic producers sell titanium dioxide regardless of grade, volume, or form, at uniform delivered prices, throughout the United States. Published list-base-prices normally apply to minimum orders of 20 tons of pigments in 50 pound bags. Less-than-carlot sales are usually 1 cent per pound more than carlots of 20 tons, and shipments of less than 5 tons are generally priced at an additional premium of 0.5 cent per pound.

Information was obtained on the pricing policies of the foreign producers with the exception of BTP Tioxide of the United Kingdom. A brief summary of the foreign manufacturers' pricing policy follows:

Tioxide S.A. (France).--* * *.

Thann et Mulhouse (France).--* * *.

Pigment-Chemie GMBH (West Germany).--***.

Kronos-Titan GMBH (West Germany) and Kronos SA-NV (Belgium).--* * *.

Bayer Anwerpen NV (Belgium).--* * *.

LaPorte Industries Ltd. (United Kigndom).--* * *.

Prices

Prices were obtained from importers and domestic producers for their sales to manufacturers of paint, paper, and plastics. In most instances 3 domestic producers and 6 importers supplied the requested data. The firms which supplied price data for domestic titanium dioxide were DuPont, SCM Corp., and NL Industries. All four countries were represented by the price data supplied by the importers. Four of the firms imported from both BTP Tioxide of the United Kingdom and Tioxide, SA of France. Two firms imported from Bayer Antwerpen of Belgium, two firms imported from LaPorte Industries of the United Kingdom, one firm imported from Bayer AG of West Germany, and price data were received from the sole importer of titanium dioxide manufactured by Thann et Mulhouse of France. The imported products had a

weighted average price below the domestic price except for dry rutile shipped to paper manufacturers. However, in that instance, *** was the only firm that supplied price data on that imported product. A summary of the data by end-users follows:

Prices to paint manufacturers--Paint manufacturers account for slightly more than half of the annual U.S. consumption of titanium dioxide. On the average, the imported product sold to these end-users was priced below the domestic product although the price differences narrowed from a weighted average of 1.5 cents per pound in 1977 to 1.2 cents per pound in 1978 and to half a cent per pound through July 1979. Weighted average prices ranged from 46.8 cents per pound for domestically manufactured titanium dioxide in 1977 to 50.4 cents per pound in 1979 and from 45.3 cents per pound in 1977 to 49.9 cents per pound for the imported product. Tables 35 and 36 and figure 2 show prices of domestic and imported rutile to paint manufacturers. With the exception of sales by *** in mid 1979, most importers appear to be individually underselling SCM, NL, and DuPont in 1978 and 1979 by amounts that can be accounted for by the less than fair value margins found by Treasury. It should be noted that while N.L.'s imports were sold at the same price to domestic paint manufacturers as were its domestic products, NL's prices in 1978 were lower than ***. It appears that for a substantial portion of NL's imports, a large portion of the underselling of *** and *** could be accounted for by LTFV margins. ***was the lowest price source, domestic or foreign, of TiO_2 to the paint industry in mid-1979, however.

In 1978, shipments to paint manufacturers accounted for slightly more than *** of the sales by DuPont, for*** percent of the sales by SCM, and for nearly ***percent of the sales of domestically produced titanium dioxide by NL. With respect to importers, *** (BTP Tioxide and Tioxide SA) reported that *** percent of that firm's sales went to paint manufacturers, *** (BTP Tioxide and Tioxide SA) and *** (Mulhouse) both reported ***percent of their imports are sold to paint manufacturers while *** (BTP Tioxide and Tioxide SA) reported that*** percent of its sales went to paint manufacturers. NL did not supply data by type of end-user with respect to imports but it is believed to be the same as that provided for its sales of domestically produced titanium dioxide. *** reported the lowest prices for the imported TiO_2 during January-July 1978--which were about 2 cents below the lowest domestic price. In January 1979, *** reported the lowes prices for the imported product and in February, *** and *** both sold titanium dioxide at the same price which was below that of the other importers. In March of 1979, *** reported the lowest price and in April through July *** reported the lowest price for imports which was almost one-half cent above the lowest domestic price (***).

Prices to paper manufacturers.--Paper manufacturers account for about 25 percent of the annual U.S. consumption of titanium dioxide. *** was the only importer that reported prices of rutile pigments to paper manufacturers; imports by that firm were priced slightly higher than the weighted average domestic prices. The price of the imported product averaged *** cents per pound in 1979 compared with 46.3 cents per pound for the domestic product in 1977, 46.4 cents per pound in 1978, and 49.3 cents per pound in 1979. Table 37 shows prices of rutile pigments to paper manufacturers. While N.L.'s import prices were frequently ***.

Table 35.--Titanium dioxide: Domestic producers' selling prices and all domestic producers weighted average selling price of rutile in dry form shipped to paint manufacturers, in cents per pound.

Year	Du Pont	SCM	NL	Producers weighted average selling price
1976:				
Jan.-Feb	***	***	***	***
Mar.-April	***	***	***	***
May-June	***	***	***	***
July-Aug	***	***	***	***
Sept.-Oct	***	***	***	***
Nov.-Dec	***	***	***	***
1977:				
Jan.-Feb	***	***	***	***
Mar.-April	***	***	***	***
May-June	***	***	***	46.42
July-Aug	***	***	***	46.49
Sept.-Oct	***	***	***	46.86
Nov.-Dec	***	***	***	48.20
1978:				
January	***	***	***	46.84
February	***	***	***	46.37
March	***	***	***	46.33
April	***	***	***	46.31
May	***	***	***	46.36
June	***	***	***	46.31
July	***	***	***	49.14
August	***	***	***	48.35
September	***	***	***	49.41
October	***	***	***	***
November	***	***	***	***
December	***	***	***	***
1979:				
January	***	***	***	***
February	***	***	***	***
March	***	***	***	***
April	***	***	***	50.20
May	***	***	***	50.49
June	***	***	***	49.23
July	***	***	***	51.07

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

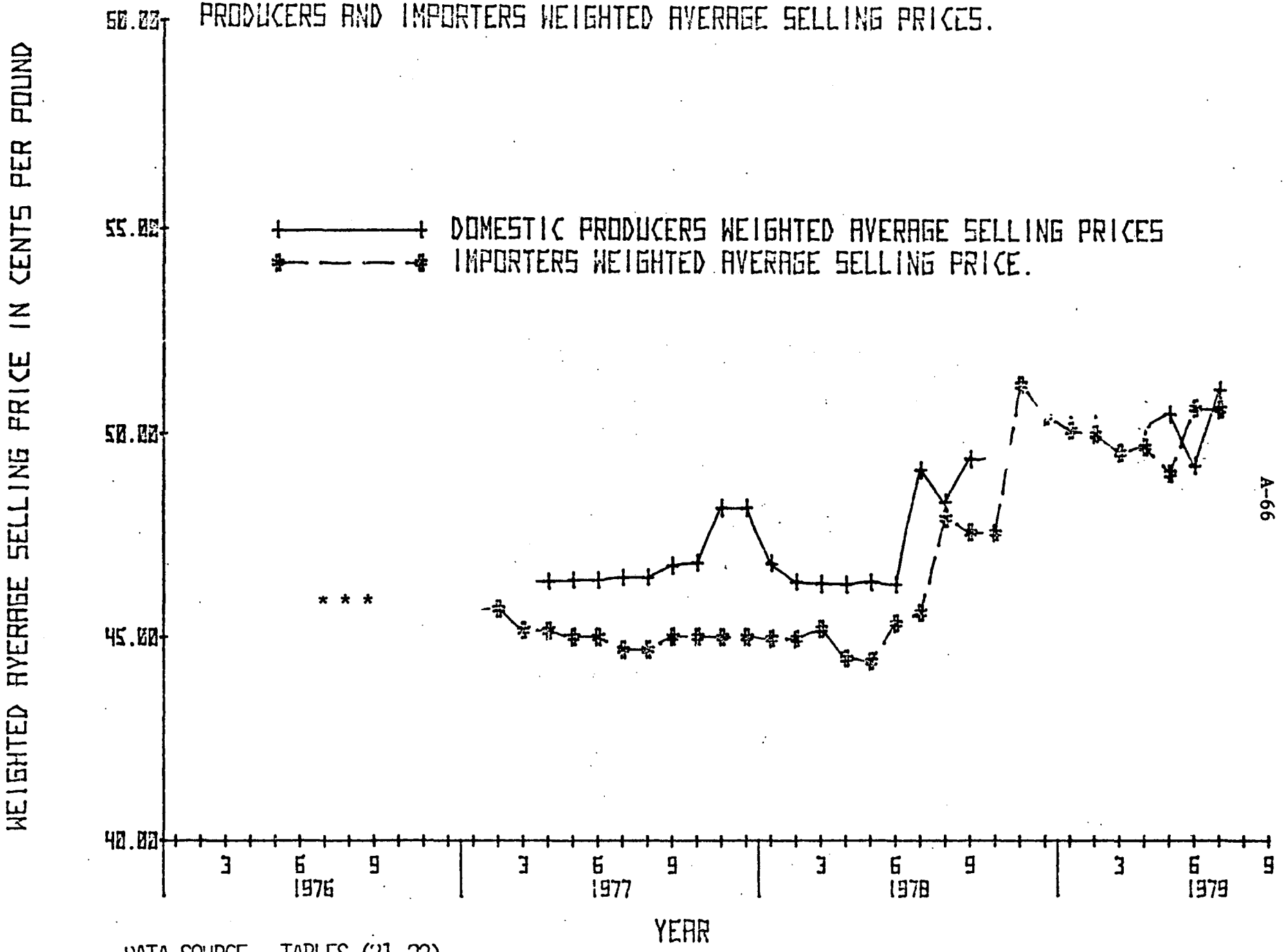
Table 36.—Titanium dioxide: Importers' selling prices and all importers' weighted average selling price of rutile in dry form shipped to paint manufactures, in cents per pound

Period	Non-weighted selling price imported from—						Importers' weighted averag selling price
	BTP Tioxide (United Kingdom) and Tioxide S.A. (France)			LaPorte (United Kingdom)	Thann et Mulhouse (France)	Kronos Titan (West Germany) and Kronos S.A. (Belgium)	
	***	***	***	***	***	***	
1976:							
January-February	***	***	***	***	***	***	***
March-April	***	***	***	***	***	***	***
May-June	***	***	***	***	***	***	***
July-August	***	***	***	***	***	***	***
September-October	***	***	***	***	***	***	***
November-December	***	***	***	***	***	***	***
1977:							
January-February	***	***	***	***	***	***	45.7
March-April	***	***	***	***	***	***	45.17
May-June	***	***	***	***	***	***	45.01
July-August	***	***	***	***	***	***	45.71
September-October	***	***	***	***	***	***	45.02
November-December	***	***	***	***	***	***	45.01
1978:							
January	***	***	***	***	***	***	44.97
February	***	***	***	***	***	***	44.97
March	***	***	***	***	***	***	45.22
April	***	***	***	***	***	***	44.48
May	***	***	***	***	***	***	44.41
June	***	***	***	***	***	***	45.35
July	***	***	***	***	***	***	45.61
August	***	***	***	***	***	***	47.96
September	***	***	***	***	***	***	47.61
October	***	***	***	***	***	***	47.60
November	***	***	***	***	***	***	51.21
December	***	***	***	***	***	***	50.46
1979:							
January	***	***	***	***	***	***	50.1
February	***	***	***	***	***	***	50.00
March	***	***	***	***	***	***	49.55
April	***	***	***	***	***	***	49.70
May	***	***	***	***	***	***	49.04
June	***	***	***	***	***	***	50.64
July	***	***	***	***	***	***	50.61

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—For B.T.P. Tioxide and for Tioxide S.A., Treasury found all examined sales made to the United States during the period May 1, 1978-October 31, 1978 to be at LTFV, with margins ranging from 12.4-47.6 percent of the fair market value (weighted average margin of 27.7 percent) for BTP Tioxide and from 14.3-26.6 percent with a weighted average margin of 19.9 percent for Tioxide S.A. For LaPorte, 94 percent of the nonceramic grades compared were at LTFV margins ranging from 14.5-43.3 percent of the fair market value with an average weighted margin of 32.4 percent. For Thann et Mulhouse, Treasury found LTFV margins on 100 percent of the sales to the United States ranging from 17.4-21.4 percent and a weighted average margin of 18.4 percent. For Kronos S.A., Treasury found LTFV margins on all sales compared, ranging from 1.4 to 14.1 percent of the fair market value of the imports and a weighted average margin of 10.1 percent. For Kronos Titan, Treasury found margins on only 29.0 percent of sales to the United States, with margins ranging from 2.6-24.9 percent of the fair market value of the imports, and a weighted average margin of 12.5 percent on its LTFV sales.

FIGURE 1: TITANIUM DIOXIDE RUTILE IN DRY FORM SHIPPED TO PAINT MANUFACTURERS, DOMESTIC PRODUCERS AND IMPORTERS WEIGHTED AVERAGE SELLING PRICES.



DATA SOURCE: TABLES (21-22)

In 1978, sales to paper manufacturers accounted for about *** percent of sales of dry rutile pigments by *** and *** and *** percent of the sales by ***. It is believed that *** percent of the imports by NL also were sold to paper manufacturers as were *** percent of that imported from *** (LaPorte and Bayer Antwerpen).

Price data were also obtained on dry anatase pigments shipped to paper manufacturers (table 38 and figure 3). The imported anatase pigments were priced at a weighted average *** cent per pound below the domestic product in 1977, *** cents per pound below the domestic product in 1978, and *** below the domestic product in 1979. Weighted average prices of the imported anatase pigments increased from *** cents per pound in 1977 to *** cents per pound in 1978 and to *** cents per pound in 1979. The weighted average price of the domestic product increased from 41.0 cents per pound in 1977 to 43.5 cents per pound in 1978 and to 44.7 cents per pound in 1979.

During January-October 1978, * * * was the lowest domestic supplier and in November and December *** was the lowest. During January-April 1979, *** and * * * both supplied anatase pigments to paper manufacturers at the same price ***, and in July *** was the lowest priced domestic producer. During January-October 1978, *** was the lowest priced supplier, receiving prices 7 cents below the lowest domestic price. *** was the importer with the lowest price in November and December of 1978 and 1979, *** again undersold all market participants.

Table 38 shows that * * * importing from LaPorte and Bayer Antwerpen undersold most reporting U.S. producers during most of the months of 1978 and 1979, by margins of 1-4 cents per pound. Nearly all of the underselling can be accounted for by the LTFV margin found by Treasury. NL's imports were sold to domestic paper manufacturers at the same price as NL's domestic merchandise during nearly all of the months of the period January 1978-July 1979. In some instances NL undersold *** in the paper market and these instances of underselling may have been attributable, at least in part, to LTFV margins. It should be noted, however, that * * * was rarely undersold in this market by either *** or by ***.

Prices to plastics manufacturers--Plastics manufacturers accounted for about 12% of the annual U.S. consumption of titanium dioxide. Data obtained on dry rutile sold to plastics manufacturers by U.S. producers and importers show that the imported product has a weighted average price of 1.7 cents per pound below the domestic price in 1977 and 2.4 cents per pound below the domestic price in 1978 but the price difference declined to 3-tenths of a cent per pound in 1979 (tables 39 and 40 and figure 4). Weighted average prices ranged from 46.3 cents per pound in 1977 for the domestic product to 49.9 cents per pound in 1979 and, for the imported product, from 44.6 cents per pound in 1977 to 49.6 cents per pound in 1979.

From the data presented in tables 41 and 42, it appears that *** is generally the highest priced of the import sources of TiO_2 for U.S. plastics manufacturers, but that ***. During the period January 1978-July 1979, *** undersold *** only in January and February of 1978--by about *** cents per pound, and undersold *** in 9 months of the 19 month period, by less than *** per pound to about *** cents per pound. At least of part a the margins of underselling could have occurred as a result of LTFV

Table 37.--Titanium Dioxide Importers and Domestic producers selling prices and all importers and domestic producers weighted average price of rutile in dry form shipped to paper manufacturers

(In cents per pound)

Period	Importers	Domestic Producers			
	N.L. 1/	N.L.	DuPont	SCM	Weighted average price
1976:					
Jan.-Feb	***	***	***	***	***
Mar.-April	***	***	***	***	***
May-June	***	***	***	***	***
July-Aug	***	***	***	***	***
Sept.-Oct	***	***	***	***	***
Nov.-Dec	***	***	***	***	***
1977:					
Jan.-Feb	***	***	***	***	***
Mar.-April	***	***	***	***	***
May-June	***	***	***	***	***
July-Aug	***	***	***	***	***
Sept.-Oct	***	***	***	***	46.01
Nov.-Dec	***	***	***	***	46.0
1978:					
January	***	***	***	***	46.22
February	***	***	***	***	46.30
March	***	***	***	***	46.01
April	***	***	***	***	46.00
May	***	***	***	***	46.21
June	***	***	***	***	45.98
July	***	***	***	***	46.01
August	***	***	***	***	46.77
September	***	***	***	***	46.31
October	***	***	***	***	44.46
November	***	***	***	***	47.21
December	***	***	***	***	49.51
1979:					
January	***	***	***	***	50.10
February	***	***	***	***	48.39
March	***	***	***	***	49.10
April	***	***	***	***	49.10
May	***	***	***	***	49.10
June	***	***	***	***	49.10
July	***	***	***	***	50.13

1/ N.L.'s imports are from Kronos S.A. (Belgium) and Kronos Titan (West Germany). For imports from Kronos S.A., Treasury found LTFV margins on all of its sales compared ranging from 1.4 to 14.1 percent of the fair market value of the imports and a weighted average margin of 10.1 percent. For Kronos Titan, Treasury found LTFV margins of 2.6-24.9 percent on 29 percent of the sales compared, and a weighted average margin of 12.5 percent on the LTFV merchandise.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 38.—Titanium dioxide: Importers and domestic producers selling prices and all importers and domestic producers weighted average selling prices of dry anatase shipped to paper manufacturers, in cents per pound

(In cents per pound)

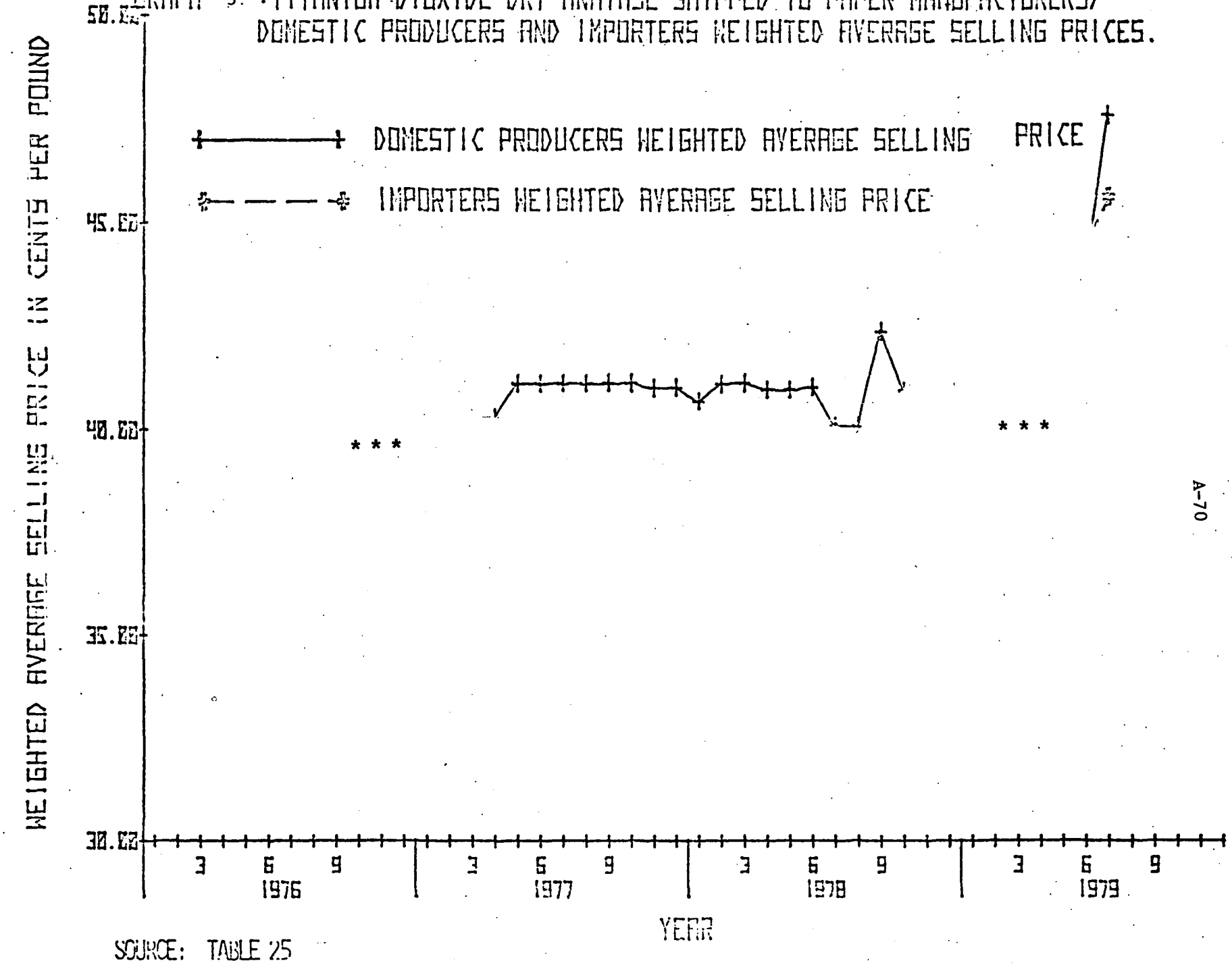
Period	Importers			Domestic producers			
	Non-weighted selling price		Importers weighted average selling price	Non-weighted selling price			Producers weighted average selling price
	*** 1/	NL Ind 2/		DuPont	SCM	NL	
1976:							
January-February	***	***	***	***	***	***	***
March-April	***	***	***	***	***	***	***
May-June	***	***	***	***	***	***	***
July-August	***	***	***	***	***	***	***
September-October	***	***	***	***	***	***	***
November-December	***	***	***	***	***	***	***
1977:							
January-February	***	***	***	***	***	***	***
March-April	***	***	***	***	***	***	***
May-June	***	***	***	***	***	***	41.11
July-August	***	***	***	***	***	***	41.11
September-October	***	***	***	***	***	***	41.13
November-December	***	***	***	***	***	***	41.02
1978:							
January	***	***	***	***	***	***	40.69
February	***	***	***	***	***	***	41.10
March	***	***	***	***	***	***	41.13
April	***	***	***	***	***	***	40.97
May	***	***	***	***	***	***	40.97
June	***	***	***	***	***	***	41.03
July	***	***	***	***	***	***	40.10
August	***	***	***	***	***	***	40.10
September	***	***	***	***	***	***	42.39
October	***	***	***	***	***	***	40.95
November	***	***	***	***	***	***	41.17
December	***	***	***	***	***	***	41.20
1979:							
January	***	***	***	***	***	***	45.03
February	***	***	***	***	***	***	44.38
March	***	***	***	***	***	***	44.38
April	***	***	***	***	***	***	44.39
May	***	***	***	***	***	***	43.68
June	***	***	***	***	***	***	43.68
July	***	***	***	***	***	***	47.59

1/ Imports from * * * are from LaPorte (United Kindgom) and Bayer Antwerpen (Belgium). Treasury found that 94 percent of LaPorte's nonceramic grade sales examined were made at LTFV margins ranging from 14.5-43.3 percent of the fair market value, with a weighted average margin of 32.4 percent. For Bayer Antwerpen, 89 percent of the sales compared were at LTFV margins of 0.3-17.7 percent, with a weighted average margin of 8.9 percent.

2/ NL's imports are from Kronos S.A. (Belgium) and Kronos-Titan (West Germany). For imports from Kronos S.A., Treasury found LTFV margins on all of its sales compared ranging from 1.4 to 14.1 percent of the fair market value of the imports and a weighted average margin of 10.1 percent. For Kronos-Titan, Treasury found LTFV margin of 2.6-24.9 percent on 29 percent of the sales compared, and a weighted average margin of 12.5 percent on the LTFV merchandise.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

GRAPH 3. :TITANIUM DIOXIDE DRY ANATASE SHIPPED TO PAPER MANUFACTURERS, DOMESTIC PRODUCERS AND IMPORTERS WEIGHTED AVERAGE SELLING PRICES.



SOURCE: TABLE 25

Table 39.—Titanium Dioxide: Domestic producers' selling prices and all domestic producers' weighted average selling price for rutile in dry form shipped to plastic manufacturers

In cents per pound

	DuPont	SCM	NL	Producers' weighted average selling price
1976:				
Jan.-Feb	***	***	***	***
Mar.-April	***	***	***	***
May-June	***	***	***	***
July-Aug	***	***	***	***
Sept.-Oct	***	***	***	***
Nov.-Dec	***	***	***	***
1977:				
Jan.-Feb	***	***	***	***
Mar.-April	***	***	***	***
May-June	***	***	***	46.38
July-Aug	***	***	***	46.38
Sept.-Oct	***	***	***	46.38
Nov.-Dec	***	***	***	47.04
1978:				
January	***	***	***	45.31
February	***	***	***	46.31
March	***	***	***	45.31
April	***	***	***	43.98
May	***	***	***	45.33
June	***	***	***	44.71
July	***	***	***	49.46
August	***	***	***	48.47
September	***	***	***	50.16
October	***	***	***	50.58
November	***	***	***	50.56
December	***	***	***	50.14
1979:				
January	***	***	***	49.07
February	***	***	***	49.07
March	***	***	***	49.07
April	***	***	***	50.60
May	***	***	***	51.24
June	***	***	***	50.15
July	***	***	***	50.10

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

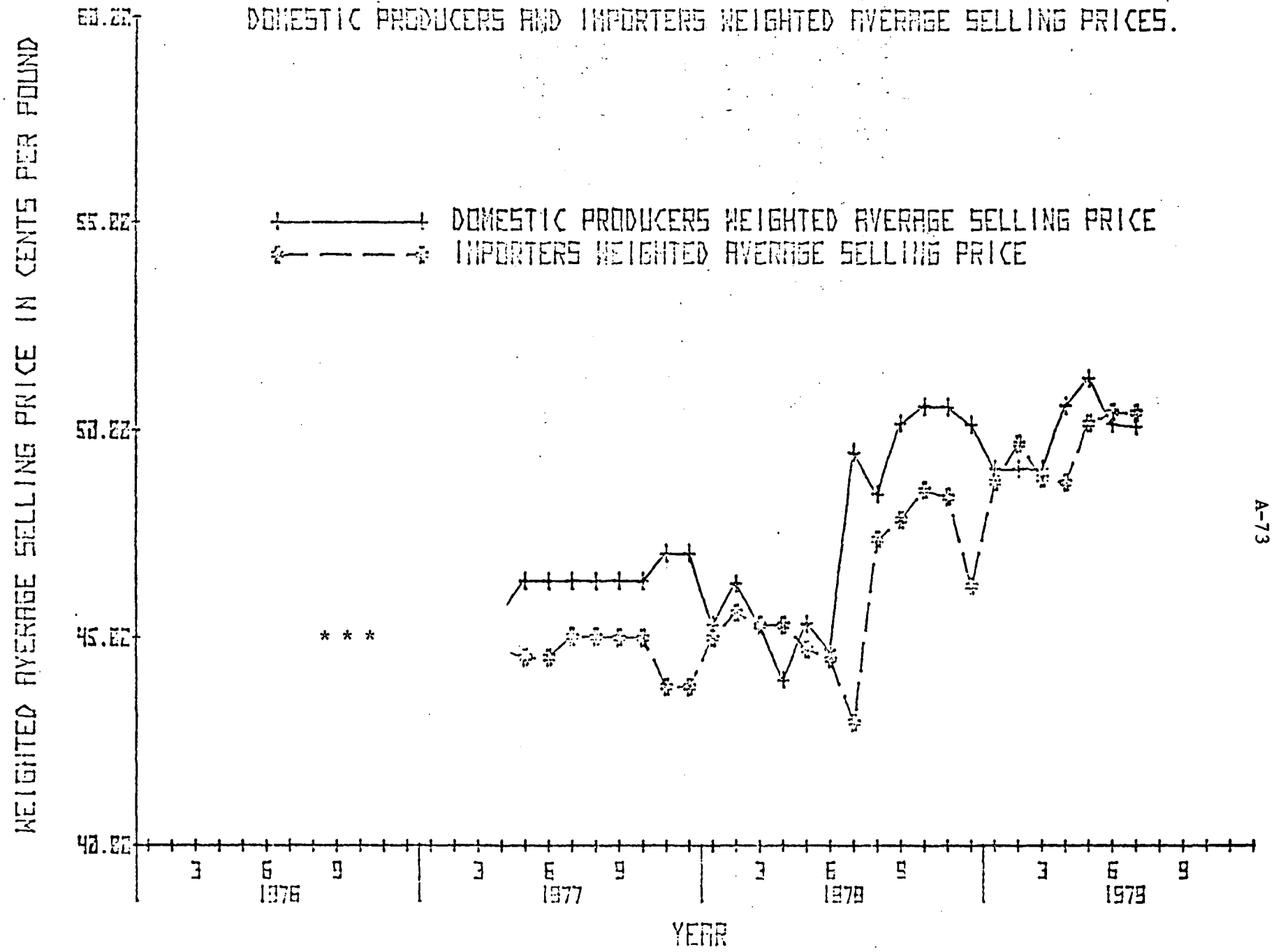
Table 40.—Titanium dioxide: Importers' selling prices and all importers' weighted average price of rutile in dry form shipped to plastic manufacturers, in cents per pound

Period	Non-weighted selling price imported from—						Importers' weighted average selling price
	BTP Tioxide (United Kingdom) and Tioxide S.A. (France)			LaPorte (United Kingdom)	Thann et Mulhouse (France)	Kronos Titan (West Germany) and Kronos S.A. (Belgium)	
	***	***	***	***	***	NL Ind.	
1976:	***	***	***	***	***	***	***
January-February	***	***	***	***	***	***	***
March-April	***	***	***	***	***	***	***
May-June	***	***	***	***	***	***	***
July-August	***	***	***	***	***	***	***
September-October	***	***	***	***	***	***	***
November-December	***	***	***	***	***	***	***
1977:							
January-February	***	***	***	***	***	***	***
March-April	***	***	***	***	***	***	***
May-June	***	***	***	***	***	***	44.53
July-August	***	***	***	***	***	***	45.03
September-October	***	***	***	***	***	***	45.00
November-December	***	***	***	***	***	***	43.82
1978:							
January	***	***	***	***	***	***	45.0
February	***	***	***	***	***	***	45.6
March	***	***	***	***	***	***	45.3
April	***	***	***	***	***	***	45.3
May	***	***	***	***	***	***	44.73
June	***	***	***	***	***	***	44.48
July	***	***	***	***	***	***	42.96
August	***	***	***	***	***	***	47.38
September	***	***	***	***	***	***	47.86
October	***	***	***	***	***	***	48.57
November	***	***	***	***	***	***	48.40
December	***	***	***	***	***	***	46.26
1979:							
January	***	***	***	***	***	***	48.76
February	***	***	***	***	***	***	49.68
March	***	***	***	***	***	***	48.85
April	***	***	***	***	***	***	48.75
May	***	***	***	***	***	***	50.17
June	***	***	***	***	***	***	50.43
July	***	***	***	***	***	***	50.42

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—For BTP Tioxide and Tioxide S.A., Treasury found all examined sales to the United States during the period May 1, 1978-October 31, 1978 to be at LTFV, with margins ranging from 12.4 to 47.6 percent of the fair market value and a weighted average margin of 27.7 percent for BTP Tioxide and from 14.3-26.6 percent with a weighted average margin of 19.9 percent for Tioxide S.A. For LaPorte, 94 percent of the nonceramic grades compared were at LTFV margins ranging from 14.5 to 43.3 percent of the fair market value of the imports with a weighted average margin of 32.4 percent. For Thann et Mulhouse, Treasury found LTFV margins on 100 percent of its sales to the United States ranging from 17.4 to 21.4 percent and an average weighted margin of 18.4 percent. For Kronos, S.A., Treasury found LTFV margins on all sales compared, ranging from 1.4 to 14.1 percent of the fair market value of the imports and a weighted average margin of 10.1 percent. For Kronos-Titan, Treasury found margin on only 29.0 percent of sales to the United States, with margins ranging from 2.6 to 24.9 percent of the fair market value of the imports, and a weighted average margin of 12.5 percent on its LTFV sales.

GRAPHN 3: TITANIUM DIOXIDE, RUTILE IN DRY FORM SHIPPED TO PLASTIC MANUFACTURERS, DOMESTIC PRODUCERS AND IMPORTERS WEIGHTED AVERAGE SELLING PRICES.



SOURCE: TABLES (23-24)

pricing of imports. For the most part, other import sources generally undersold U.S. producers by 1-4 cents per pound, nearly all of which may be accounted for by LTFV margins found by Treasury.

* * * * * * *

E.I. DuPont de Nemours and Co., Inc., the largest domestic producer with about * * * percent of current domestic nameplate capacity for producing titanium dioxide, was alleged to have been the price leader in the U.S. market in recent years. It was alleged in litigation before the Federal Trade Commission that since 1972, DuPont had unfairly used its dominant market position and economic power to monopolize the domestic industry producing titanium dioxide. It was charged that DuPont adopted and implemented a plan to expand its productive capacity to capture all domestic market growth through 1990 and established deliberately low prices to discourage small producers and block foreign competiton. The notice of contemplated relief in the complaint would have required DuPont to sell two of its four titanium dioxide plants and provide royalty-free licensing of its technology and know-how in the production of titanium dioxide.

On August 31, 1979, Administrative Law Judge Miles J. Brown, dismissed the case before the FTC with respect to Dupont's TiO_2 operations. The judge concluded that DuPont did not engage in the "strategy" attributed to it in the complaint and by complaint counsel in their proposed findings in that DuPont did not engage in "strategic pricing," but rather established its TiO_2 prices relative to market forces over which it had no control.

Judge Brown also concluded that DuPont's conduct of its business, insofar as it was challenged in the proceeding before the FTC, was neither unreasonable nor unfair and that its conduct did not constitute an illegal attempt to monopolize the domestic TiO_2 market in violation of section 2 of the Sherman Act and did not constitute unfair methods of competition or unfair and deceptive acts or practices in violation of section 5 of the Federal Trade Commission Act, as amended.

Lost Sales

In an attempt to determine if sales were lost by the domestic manufacturers to the LTFV import of titanium dioxide from Belgium, France, the United Kingdom and West Germany, purchasers questionnaires were sent to 43 of the hundreds of firms which are end-users of TiO_2. Firms that received questionnaires included manufacturers of paint, paper, fabrics, rubber, and plastics. Responses were received from only about half of those firms. The respondents reported a decline in purchases of domestic titanium dioxide between 1977 and 1978 and an increase in purchases of imported titanium dioxide from the 4 LTFV countries. End-users generally listed NL Industries as a supplier of domestic titanium dioxide although it is known that purchases from NL considered by the end-users to be a domestic product may have included (or consisted entirely of) titanium dioxide manufactured abroad. Table 41 shows purchases of titanium dioxide by the respondent end-users, by firm, which they consider as manufactured domestically and purchases of titanium dioxide which they know were imported from the LTFV suppliers; table 42 shows purchases by those firms from NL Industries (which also include an unknown amount of LTFV imports) and in the note to table 42 the imports from LTFV countries by NL Industries are shown.

The Commission's staff contacted 50 end-users of titanium dioxide by telephone that did not receive a purchasers questionnaire. The staff confirmed 14 instances of lost sales by the U.S. manufacturers of titanium dioxide imported from Belgium, France, the United Kingdom, and West Germany. Firms which reported that they replaced domestic purchases of titanium dioxide with that imported from the LTFV sources are shown separately below, along with the reasons for the change and the volume of purchases when reported.

* * * * * * *

Table 41.--Purchases of titanium dioxide by end-users that responded to the Commissie questionnaire, by firm, 1976-78, January-June 1978 and January-June 1979.

(Short tons)

Firm and source	1976	1977	1978	January-July--	
				1978	1979
Domestic titanium dioxide:					
*** 1/	***	***	***	***	***
***	***	***	***	***	***
*** 1/	***	***	***	***	***
***	***	***	***	***	***
*** 1/	***	***	***	***	***
***	***	***	***	***	***
*** 1/	***	***	***	***	***
***	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 2/	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
***	***	***	***	***	***
*** 1/2/	***	***	***	***	***
*** 2/	***	***	***	***	***
***	***	***	***	***	***
*** 1/	***	***	***	***	***
*** 1/	***	***	***	***	***
Total, domestic titanium dioxide	80,619	85,142	83,549	31,528	45,007
Imported titanium dioxide:					
* * * (Tioxide)	***	***	***	***	***
* * * (Tioxide and West Germany	***	***	***	***	***
* * * (LaPorte)	***	***	***	***	***
* * * (Tioxide)	***	***	***	***	***
* * * (Tioxide and LaPorte)	***	***	***	***	***
* * * (LaPorte)	***	***	***	***	***
* * * (LaPorte, Bayer)	***	***	***	***	***
* * * (Mulhouse)	***	***	***	***	***
* * * (Sachtleben, Bayer, LaPorte)	***	***	***	***	***
* * * (France)	***	***	***	***	***
* * * (LaPorte & Bayer)	***	***	***	***	***
Total, imported titanium dioxide	1,658	3,165	5,168	2,739	3,057

1/ Purchases from NL Industries.
2/ Reports no purchases of imported titanium dioxide.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 42.--Purchases of titanium dioxide from NL Industries, as reported by end-users that responded to the Commission questionnaire, by firm, 1976-78, January-July 1978, and January-July 1979

(Short tons)

Firm	1976	1977	1978	January-July--	
				1978	1979
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
* * *----------	***	***	***	***	***
Total----------	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.--Imports from LTFV supplies, domestic production and total supply of TiO_2 available for domestic sale as reported by questionnaire were as follows:

Item	1976	1977	1978	January-July--	
				1978	1979
Imports by NL Industries:					
From Belgium----------short tons--	***	***	***	***	***
From West Germany----------do----	***	***	***	***	***
Total----------do----	***	***	***	***	***
U.S. production by NL					
Industries----------short tons--	***	***	***	***	***
Total, NL's production plus					
imports----------short tons--	***	***	***	***	***
Ratio of NL's imports to total					
of NL's production plus					
imports----------percent--	***	***	***	***	***

* * * * * * *

* * * * * * *

Appendix A

Treasury's Letters to the Commission concerning LTFV Sales

A-82

THE DEPARTMENT OF THE TREASURY
OFFICE OF THE GENERAL COUNSEL
WASHINGTON, D.C. 20220

AUG 06 1979

Dear Mr. Chairman:

In accordance with Section 201(a) of the Antidumping Act, 1921, as amended, you are hereby advised that titanium dioxide from Belgium, France, the Federal Republic of Germany, and the United Kingdom, with the exception of that sold by Bayer AG of the Federal Republic of Germany, and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value within the meaning of the Act.

These determinations exclude ceramic grades of titanium dioxide manufactured by LaPorte Industries on the grounds of no sales at less than fair value and discontinue the investigation with respect to Bayer AG.

The Customs Service will make available to the International Trade Commission as promptly as possible the file on sales or likelihood of sales at less than fair value of titanium dioxide subject to this determination. This file is for the Commission's use in connection with its investigation as to whether an industry in the United States is being, or is likely to be, injured, or is prevented from being established, by reason of the importation of this merchandise into the United States.

Because some of the data in this file is regarded by the Customs Service to be of a confidential nature, it is requested that the Commission consider all information therein contained for the official use of the Commission only, and not to be disclosed to others without prior clearance with the Customs Service.

Sincerely,

Robert H. Mundheim

The Honorable
Joseph O. Parker
Chairman
U.S. International Trade Commission
Washington, D.C. 20436

Attachments

A-83

DEPARTMENT OF THE TREASURY
OFFICE OF THE GENERAL COUNSEL
WASHINGTON, D.C. 20220

79 OCT 24 PM 3 23

OCT 23 1979

Dear Chairman Parker:

In a letter dated August 6, 1979, the U.S. Treasury Department notified the International Trade Commission of its determination that "titanium dioxide from Belgium, France, the Federal Republic of Germany, and the United Kingdom, with the exception of that sold by Bayer AG of the Federal Republic of Germany, and ceramic grades of titanium dioxide sold by Laporte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value..."

In the Federal Register Notice of that determination with respect to the United Kingdom, published on August 10, 1979 (44 FR 47203-4), it was stated that "(f)or BTP Tioxide, those comparisons indicate that the purchase price was less than the home market value of such or similar merchandise on 100 percent of the sales compared. Margins ranged from approximately 14.2 percent to 90.2 percent. The weighted-average margin was approximately 45.9 percent." It has subsequently been determined that due to arithmetical error, the weighted-average margin for BTP Tioxide was inaccurate and should be 38.2 percent rather than 45.9 percent as originally reported. No change in the range of margins or percent of sales at margin is necessary.

I apologize for this late change and I hope this does not unnecessarily disrupt your deliberations.

Sincerely,

Richard B. Self

Richard B. Self
Director
Office of Tariff Affairs

The Honorable
Joseph O. Parker
Chairman, U.S. International
Trade Commission
Washington, D.C. 20436

Appendix B

Commission's Notice of Investigations and Hearing

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

[AA1921-206, AA1921-207, AA1921-208, and AA1921-209]

Titanium Dioxide from Belgium, France, the United Kingdom, and the Federal Republic of Germany

Notice of Investigations and Hearing

Having received advice from the Department of the Treasury on August 7, 1979, that titanium dioxide (provided for in item 473.70 of the Tariff Schedules of the United States (TSUS)) from Belgium, France, the United Kingdom, and the Federal Republic of Germany, with the exception of that sold by Bayer AG of the Federal Republic of Germany and ceramic grades of titanium dioxide sold by LaPorte Industries of the United Kingdom, 1/ is being, or is likely to be, sold at less than fair value, the United States International Trade Commission, on August 23, 1979, instituted investigations Nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209, under section 201(a) of the Antidumping Act, 1921, as amended (19 U.S.C. 160(a)), to determine whether an industry in the United States is being or is likely to be injured, or is prevented from being established, by reason of the importation of such merchandise into the United States.

Public hearing. A public hearing in connection with these investigations will be held on Thursday, September 27, 1979, in the Commission's Hearing Room, U.S. International Trade Commission Building, 701 E Street, NW., Washington, D.C. 20436, beginning at 10 a.m., e.d.t. All interested persons will be afforded an opportunity to be present, to appear by counsel or in person, to provide information, and to be heard at such hearing. Requests to appear at the hearing should be received in writing in the office of the Secretary to the Commission, United States International Trade Commission, 701 E Street NW., Washington, D.C., not later than noon, Friday, September 21, 1979.

1/ For purposes of the Department of the Treasury's determination, ceramic grades of titanium dioxide are titanium dioxide pigments (provided for in TSUS item 473.70), having an average minimum primary particle size exceeding eight microns in diameter.

Written statements. Interested parties may submit statements in writing in lieu of, or in addition to, appearing at the public hearing. A signed original and nineteen true copies of such statements should be submitted. Requests for confidential treatment should be directed to the attention of the Secretary. Any business information which a submitter wishes the Commission to treat as confidential should be clearly marked "Confidential Business Data." Submitters seeking confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). Should a request for confidential treatment be denied, the submission will be returned to the submitting party.

All written submissions, except for confidential business data, will be made available for inspection by interested persons. To assure that such statements are given due consideration by the Commission, such statements should be received not later than the close of business, Friday, October 5, 1979.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: August 24, 1979

Appendix C

Letter of October 23, 1979, to the Commission from Mr. Richard Self, Director, Office of Tariff Affairs, Department of the Treasury

A-88

DEPARTMENT OF THE TREASURY
OFFICE OF THE GENERAL COUNSEL
WASHINGTON, D.C. 20220

79 OCT 24 PM 3:23

OCT 23 1979

Dear Chairman Parker:

In a letter dated August 6, 1979, the U.S. Treasury Department notified the International Trade Commission of its determination that "titanium dioxide from Belgium, France, the Federal Republic of Germany, and the United Kingdom, with the exception of that sold by Bayer AG of the Federal Republic of Germany, and ceramic grades of titanium dioxide sold by Laporte Industries of the United Kingdom, is being, or is likely to be, sold at less than fair value..."

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Richard B. Self

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Director
Office of Tariff Affairs

The Honorable
Joseph O. Parker
Chairman, U.S. International
Trade Commission
Washington, D.C. 20436

Library Cataloging Data

U.S. International Trade Commission.
Titanium dioxide from Belgium, France, the United Kingdom, and the Federal Republic of Germany. Determination of no injury in investigations nos. AA1921-206, AA1921-207, AA1921-208, and AA1921-209 under the Antidumping act, 1921, as amended.
Washington, 1979.

18, A 88 p. illus. 28 cm. (USITC Publication 1009)

1. Titanium oxides. I. Title.

UNITED STATES
INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436

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