

UNITED STATES TARIFF COMMISSION

VANILLIN

Report on Escape-Clause Investigation No. 7-112
Under the Provisions of Section 7 of the
Trade Agreements Extension Act of 1951, as Amended



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UNITED STATES TARIFF COMMISSION

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VANILLIN

U.S. Tariff Commission
August 20, 1962

Introduction

This report, published pursuant to section 7(d) of the Trade Agreements Extension Act of 1951, as amended (19 U.S.C. 1364(d)), sets forth the finding and conclusion of the U.S. Tariff Commission in connection with an investigation (No. 7-112) to determine whether vanillin, provided for in paragraph 28(a) of the Tariff Act of 1930, is, as a result, in whole or in part, of the customs treatment reflecting concessions granted thereon under the General Agreements on Tariffs and Trade, being imported into the United States in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products.

An application for an investigation under section 7 with respect to imports of lignin vanillin was filed February 19, 1962, by Sterling Drug, Inc. In instituting the investigation on March 8, 1962, the Commission extended the scope on its own motion to include all vanillin described in paragraph 28(a) of the tariff act.

Public notice of the institution of the investigation and of the public hearing to be held in connection therewith was duly given by posting copies of the notice at the office of the Tariff Commission in Washington, D.C., and at its office in New York City, and by publishing such notice in the Federal Register (27 F.R. 2424) and in the March 15, 1962, issue of Treasury Decisions. The public hearing was postponed

from May 22, 1962, the date originally set, to May 31, 1962, and notice of the change was published (27 F.R. 4603; May 17, 1962, issue of Treasury Decisions). The public hearing was duly held on May 31 and June 1, 1962, and all interested parties were afforded reasonable opportunity to produce evidence and to be heard.

In addition to the information obtained at the hearing, the Commission obtained data from its files, from other Government agencies, from responses to questionnaires, and through fieldwork by the Commission's staff.

Finding and Conclusion of the Commission

On the basis of the investigation, including the hearing, the Commission finds that vanillin is not being imported in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products. Accordingly, in the judgment of the Commission, no sufficient reason exists for a recommendation to the President under the provisions of section 7 of the Trade Agreements Extension Act of 1951, as amended.

Considerations Bearing on the Commission's Finding and Conclusion

Description and uses

Vanillin occurs naturally as the principal fragrant constituent of the vanilla bean. Commercial vanillin is not obtained from this source, but is synthesized from other materials to afford an inexpensive

substitute or extender for natural vanilla.^{1/} A pound of commercial vanillin sells for a fourth the price but has 13 times the flavoring strength of a pound of vanilla beans. Natural vanilla still accounts for a major share of the value, but on the basis of flavoring strength it accounts for less than 5 percent of all the vanilla flavoring used.

Commercial vanillin includes lignin vanillin and eugenol vanillin. Lignin vanillin is synthesized from the waste liquor obtained in the manufacture of acid sulfite wood pulp. Eugenol vanillin is synthesized from clove oil.^{2/} Lignin vanillin is the only kind manufactured in the United States and almost the only kind sold.

In the manufacture of lignin vanillin, only waste liquor from softwood (conifers) can be used. The complex lignin molecule in the liquor is broken down by alkaline oxidation into vanillin, related phenols, aldehydes, smaller lignin polymers, and other materials. The vanillin is separated from the other chemicals by successive extractions with organic solvents, acids, and alkalis.

Vanillin is sold in three grades: U.S.P., technical, and crude. U.S.P. grade vanillin is a fragrant white crystalline powder which meets the standards of purity for human consumption adopted by the U.S. Pharmacopoeia. It is used in confections, bakery products, beverages, ice creams, desserts, vanilla extracts, and other food

^{1/} Natural vanilla contains various flavoring constituents in addition to vanillin. Inasmuch as the other flavoring constituents enhance the value of natural vanilla, vanillin itself is seldom, if ever, extracted from the natural product. Natural vanillin, therefore, is not an article of commerce.

^{2/} Eugenol vanillin is considered by some to have a finer flavor than lignin vanillin. The two vanillins can be positively distinguished only by a chromatographic test.

products, both to impart a specific vanilla flavor and to fortify or supplement other flavors. . . Practically all chocolate contains vanillin.

Technical grade vanillin, sold in yellowish chunks, is 97-99 per cent pure. Most exports of vanillin are made in the form of the technical grade, because of the susceptibility of U.S.P. vanillin to caking and to contamination by odors. The cost of converting technical grade to U.S.P. grade vanillin is only a few cents a pound. Domestic sales of technical grade vanillin are made for refining to U.S.P. grade, for industrial odorants, and for synthesis of other chemicals. The amount devoted to all these uses was small until the first 6 months of 1962, when large amounts were used in the synthesis of a new chemical.

Crude vanillin, sold as brownish lumps, is used in electroplating; the quantity sold is small.

Although not nearly as important commercially as vanillin and vanilla beans, the aromatic chemicals ethylvanillin and propenylguaethol also are used for imparting a vanilla-like flavor. There have been no significant changes in U.S. consumption of vanilla beans, ethylvanillin, or propenylguaethol in the years covered by this investigation.

U.S. customs treatment

Vanillin is dutiable in paragraph 28(a) of the Tariff Act of 1930 under the provision "vanillin, from whatever source obtained, derived, or manufactured." The rate of duty originally provided in the 1930 act was 7 cents per pound plus 45 percent ad valorem.^{1/} Pursuant to

^{1/} The ad valorem part of the rate is assessed on "American selling price" of the similar competitive domestic product (as defined in sec. 402(e) or sec. 402a(g) of the Tariff Act of 1930, as amended).

concessions granted by the United States in the General Agreement on Tariffs and Trade, the duty on vanillin has been reduced a number of times, as shown below:

<u>Effective date</u>	<u>Rate of duty 1/</u>
June 6, 1951 -----	3-1/2¢ per lb. plus 22-1/2% ad val.
June 30, 1956 -----	3-1/4¢ per lb. plus 21% ad val.
June 30, 1957 -----	3-1/10¢ per lb. plus 20% ad val.
June 30, 1958 -----	3¢ per lb. plus 19% ad val.

1/ The ad valorem part of the rate is assessed on "American selling price" of the similar competitive domestic product (as defined in sec. 402(e) or sec. 402a(g) of the Tariff Act of 1930, as amended).

Based on the present rate of duty (3 cents per pound plus 19 percent ad valorem), the calculated duties per pound on imports of lignin vanillin and eugenol vanillin and the ratios of these duties to both the foreign invoice values and the dutiable values, in 1961, were as follows:

Kind	Foreign invoice value	Dutiable value 1/	Calculated duty		
			Amount	Ratio to: foreign invoice value	Ratio to dutiable value
	<u>Per</u> <u>pound</u>	<u>Per</u> <u>pound</u>	<u>Per</u> <u>pound</u>	<u>Percent</u>	<u>Percent</u>
Lignin vanillin:					
U.S.P-----:	\$1.75	\$3.00	\$0.60	34	20
Technical-----:	1.60	2.25	.48	30	21
Eugenol vanillin--:	3.45	6.68	1.30	38	19

1/ The "American selling price" of a similar competitive article manufactured in the United States.

On February 21, 1962, Sterling Drug, Inc., filed a complaint with the U.S. Treasury Department, alleging that lignin vanillin from Canada was being sold at less than fair value within the meaning of the Anti-dumping Act, 1921, as amended. On March 9, 1962, the Deputy Commissioner of Customs informed the appraising officers of the complaint and requested that they notify the importers. The Ontario Paper Co., Ltd., of Thorold, Ontario, Canada, was requested by the U.S. Treasury Department to furnish it with detailed information regarding its sales of vanillin within Canada as well as to the United States and other foreign markets.

On May 8, 1962, the Deputy Commissioner of Customs stated that the information before the Customs Bureau indicated that there was reasonable ground to suspect that lignin vanillin from Canada was being, or was likely to be, sold at less than fair value within the meaning of the Antidumping Act. Accordingly, the Bureau is withholding appraisal of all unappraised shipments of lignin vanillin from Canada that have been entered, or withdrawn from warehouse, for consumption on or after October 25, 1961.

U.S. producers

Two U.S. concerns produce lignin vanillin--the Salvo Chemical Co., a division of Sterling Drug, Inc., with a plant at Rothschild, Wis., and Monsanto Chemical Co., with a plant at Seattle, Wash.

Inasmuch as many gallons of waste sulfite liquor must be used for each pound of vanillin produced, plant location is an important factor governing production costs. The cost of processing, moreover, is reduced

if the sugars are removed, or if the material is concentrated or otherwise advanced before receipt. Few pulp mills are equipped to advance the waste liquor.

The Salvo company operation started at Rothschild, Wis., in 1937 under license from the Marathon Paper Co. (since 1957, the Marathon Division of the American Can Co.) which owned the basic patents for production of vanillin from lignin. Salvo leases the Rothschild plant, although not the machinery and equipment, from Marathon, on which it depends for the waste sulfite liquor used. This liquor is concentrated and mixed with caustic soda by Marathon, to which it is returned, after the extraction of vanillin, for the recovery of other products.

Monsanto has produced vanillin from lignin at Seattle, Wash., since 1952. According to annual reports of the Monsanto Chemical Co., the vanillin unit at Seattle was expanded in 1957, 1958, and 1959. The waste sulfite liquor utilized by Monsanto is obtained, after fermentation, extraction of alcohol, and concentration, from the pulp mill of the Puget Sound Pulp & Timber Co., at Bellingham, Wash. It is transported by barge to the Monsanto plant, 100 miles distant.

Vanillin accounts for less than 1 percent of the total sales by either Sterling Drug Co. or Monsanto Chemical Co., but it accounts for a large proportion of the salable product of the individual plant in which it is manufactured. Although other products of somewhat greater aggregate value than vanillin are produced in the Monsanto plant at Seattle, they are manufactured in a separate building from that used for the production of vanillin. No byproducts of any importance are obtained in the manufacture of vanillin in the United States.

U.S. consumption

U.S. consumption of commercial vanillin in 1951 was less than 1 million pounds. Annual consumption in 1957-61 was at a somewhat higher level, and showed a gradual upward trend. As estimated by the trade, the current rate is about 1,250,000 pounds a year. More than 95 percent of the total consumption of commercial vanillin in 1957-61 consisted of lignin vanillin, and the remainder consisted of eugenol vanillin. Domestic production of eugenol vanillin ceased in 1959. Although annual imports of eugenol vanillin were higher in 1960 and 1961 than in earlier years, they accounted for less than 6 percent of total imports of vanillin in those two years.

A high proportion of vanillin consumed has consisted of the U.S.P. grade. Sales of the technical grade by primary suppliers through 1961, whether for further refinement and sale as U.S.P. or for synthesis of other chemicals, were small. In the first 6 months of 1962, however, sales of the technical grade of lignin vanillin rose considerably because of shipments for synthesis of a new chemical.

U.S. production, sales, and inventories

Inasmuch as there are only two U.S. producers of vanillin, publication of the total domestic production, sales, exports, inventories, employment, and earnings would disclose to one company the operations of the other. Neither of the producers has consented to such disclosure. The Commission, therefore, may not publish these data (18 U.S.C. 1905).

Domestic production of vanillin increased from 1957 to 1958, but declined in the period 1959-61. Producers' domestic sales, unlike their production, increased from 1957 through 1960, but were much smaller in 1961 than in 1960. The smaller sales in 1961 resulted at least in part from the increased sales that occurred in the latter part of 1960 in response to two price changes. After a brief period during which reduced prices had been in effect, notice was given before the end of the year that the higher price would be restored, with the result that many sales that otherwise would have occurred in 1961 took place in 1960. Producers' average annual sales on the domestic market in 1960-61 were almost as great as those in each of the preceding 3 years. In the first 6 months of 1962, the rate of domestic sales increased as sales of U.S.P. vanillin recovered, and those of technical grade became large for the first time.

Producers' year-end inventories of vanillin have been equivalent to 1 to 3 months' sales. They increased gradually from 1957 to 1959, declined in 1960, and rose in 1961 to a level somewhat higher than before.

U.S. exports

Exports, chiefly by Monsanto, were equivalent to about a third of the U.S. production of vanillin in 1957-61 and exceeded imports in quantity, but not in value. The value of imports as reported in official statistics is based on the American selling price. The U.S. export price is lower than the American selling price on each grade. Moreover, U.S. exports (unlike the imports) consist predominantly of the technical grade rather than of the U.S.P. grade.

In 1953 the Ontario Paper Co., Ltd., appointed Monsanto Chemicals Ltd., in England (a subsidiary of the Monsanto company in the United States) distributor of Ontario's lignin vanillin in the world markets other than Canada and the United States. Although no longer the sole distributor, the Monsanto subsidiary remains a major distributor of Ontario vanillin in markets outside the United States and Canada. The vanillin distributed in the United Kingdom has come from Canada, and that distributed in other countries, principally from the United States.

Except for the Howard Smith Paper Mills Co. of Canada, whose capacity is limited, the Ontario Paper Co., Ltd., was the only source of lignin vanillin outside the United States until 1962. In that year A/S Borregaard, under license by Monsanto, began production at its Sarpsborg, Norway, plant. This plant will supply a large part of the European market. In the first 6 months of 1962, when production at the Norwegian plant was just beginning, U.S. monthly exports averaged about 15 percent lower than in the preceding 12-month period.

U.S. imports

Ninety-four percent of U.S. imports in 1961 consisted of lignin vanillin from the plant of the Ontario Paper Co., Ltd. Nominal consignees and importers of record for the Canadian vanillin were custom-house brokers. The actual U.S. purchasers, however, to whom the merchandise went, freight and duty prepaid, were Ontario's three distributors: Shulton, Inc., Zink & Triest Co., and S. B. Penick & Co.

Imports other than those from Canada consist of eugenol vanillin from the Netherlands and Switzerland. Eugenol vanillin is entered by companies that specialize in flavor and perfume materials: Givaudan Corp.; International Flavors & Fragrances, Inc.; and Maywood Chemical Works.

Imports of vanillin, as reported in the official statistics (table 1), increased sharply, although irregularly, from 47,000 pounds in 1954 to 115,000 pounds in 1957 and 397,000 pounds in 1960, but declined to 349,000 pounds in 1961.

In 1956-60, pending new construction at the Ontario plant, much of the vanillin which the Ontario Paper Co., Ltd., furnished to its U.S. distributors was purchased in the United States from Monsanto Chemical Co. The quantities purchased and those actually imported from Canada, are given in the following tabulation:

Year	: Purchased from Monsanto :	
	: Chemical Co.	: Imported from Canada
	: <u>Pounds</u>	: <u>Pounds</u>
1956-----	: 45,000	: 118,190
1957-----	: 88,750	: 104,275
1958-----	: 109,900	: 164,450
1959-----	: 170,300	: 98,609
1960-----	: 43,000	: 377,525
1961-----	: -	: 326,350

The quantity of vanillin, both imported and purchased, furnished by the Ontario Paper Co. to its U.S. distributors increased from 163,000

pounds in 1956 to 421,000 pounds in 1960, but declined to 326,000 pounds in 1961, when purchases in the United States by the Ontario company for resale had ceased. Canadian shipments to the United States in the first 6 months of 1962 amounted to 339,000 pounds, a quantity greater than that in the full year 1961. Most of these shipments, however, unlike those in earlier years, consisted of technical grade. The quantity of U.S.P. vanillin shipped by Ontario in the first 6 months of 1962 was 160,000 pounds, which was about half the quantity that was shipped in the preceding calendar year.

The Ontario Paper Co., Ltd., a subsidiary of the Tribune Co. of Chicago, Ill., is located near the U.S. border in the vicinity of Buffalo, N.Y. At this location, wage rates and construction costs are much the same as in the adjoining portion of the United States.

The Ontario plant, unlike the plants of the two U.S. producers, is under the same ownership as an adjacent pulp mill and alcohol plant from which it obtains the waste sulfite liquor. Also, unlike the U.S. plants, it utilizes dilute (rather than concentrated) waste sulfite liquor, and oxidizes the liquor with the aid of lime and sodium carbonate, rather than caustic soda. Ontario's unit costs for chemicals used to separate the vanillin from the reaction mixture and refine it are not significantly different from those of the U.S. producers.

Channels of distribution

From one-third to one-half of the U.S. sales of vanillin by domestic producers and importers are made to dealers for resale to countless small producers of bakery goods, candy, and flavoring materials throughout the country. The remaining sales are made direct to manufacturers of chocolate, candy, flavoring extracts, flavors, cookies, frozen desserts, and numerous other products.

Importers account for only about a fifth of the sales to chocolate manufacturers, a third to a half of the sales to dealers, a third to a half of the sales to manufacturers of flavoring extracts, and more than half of the sales to manufacturers of cookies and frozen desserts. All primary suppliers, whether domestic manufacturers or importers, sell vanillin in conjunction with other flavoring compounds or food additives.

The two domestic producers, through their sales organizations, obtain national distribution. Sales coverage by the importers is concentrated for the most part in some four or five metropolitan areas, or is achieved without the use of salesmen, through regular customers for vanilla beans.

By far the greater part of total sales by the two domestic producers consist of vanillin packed in 100-pound drums in quantities not less than 2,000 pounds per shipment. Vanillin sold by importers is, for the most part, in 500- to 1,000-pound units.

Prices

Subject to a discount of 1 percent for cash, the list price to U.S. buyers in June 1962 for U.S.P. vanillin in 100-pound drums, freight prepaid, on orders of not less than 500 pounds, was \$3 a pound, or (to dealers) \$3.20 a pound less 10 percent. On orders of less than 500 pounds, the price in 100-pound drums to all buyers was \$3.20 a pound. On technical grade vanillin, the reported price in June 1962 was \$2.25 a pound. Sales for export of both U.S.P. and technical grade are made at prices much lower than those to U.S. buyers.

Lignin vanillin is generally sold in the United States by the different suppliers at identical prices and under identical terms of sale. Changes in price or terms of sale are infrequent, and those made by one producer are soon adopted by the other. The Ontario Paper Co., Ltd., which is the only source of imports, supplies its three distributors in this country at the price, in U.S. dollars, published in the Oil, Paint and Drug Reporter, less 20 percent to cover the importer's cost of distribution and selling. The price quoted by Ontario's three distributors is the same as that quoted by the domestic producers.

The two U.S. producers have long sold vanillin of the usual (U.S.P.) grade in this country on large orders at about \$3 a pound. Between 1951 and 1955, when U.S. capacity for lignin vanillin more than

doubled, the price of U.S.P. grade was constant at \$3 a pound; it has varied but slightly since. In September 1960, by successive reductions on the part of the two producers, the price was lowered to \$2.50 a pound but at the end of the year it was restored to \$3, subject to a dealer discount, and it has since remained at that level (table 2).

Small differences in the price to users by different suppliers occur from differences in the effective date of price changes, from differences in qualifications for the dealer discount, and occasionally from sales below list price. The evidence before the Commission indicates that sales below list price (including those necessary to meet competition) by domestic producers and importers have been small.

Profit-and-loss experience of domestic producers

Almost half of the cost of manufacturing vanillin is the cost of the waste sulfite liquor and the chemicals used. Light, heat, and power, depreciation, and repairs and maintenance account for most of the remainder. Direct labor accounts for less than 10 percent of the total. All together, fewer than 100 workers are employed in the production of vanillin by the two domestic producers.

Sales of vanillin by both the U.S. producers were profitable in all years covered by the investigation from 1957 to 1961. The combined rate of profits increased in the years 1957 through 1960. It declined with the reduction of sales in 1961, but recovered in the first 5 months of 1962 to about the average for the 4 years 1957-60.

Statistical Appendix

Table 1.--Vanillin: U.S. imports for consumption, by principal sources, 1954, 1956-61, and January-June 1962

Year	All countries	Canada	Netherlands	Switzerland
Quantity (pounds)				
1954-----	46,725	37,565	1,400	5,512
1956-----	131,266	118,190	1,800	8,819
1957-----	114,694	104,275	1,600	8,819
1958-----	173,569	164,450	4,710	4,409
1959-----	109,666	98,609	2,240	8,817
1960 <u>1/</u> -----	397,355	377,525	13,216	6,614
1961 <u>1/</u> -----	348,948	326,350	9,115	11,023
1962 (Jan.-June) <u>1/</u> ---	349,513	338,650	8,658	2,205
Dutiable value <u>2/</u>				
1954-----	\$138,765	\$110,162	\$9,423	\$16,535
1956-----	420,395	333,144	12,031	58,929
1957-----	360,521	290,899	10,695	58,927
1958-----	524,664	464,129	31,071	29,464
1959-----	355,256	282,088	14,240	58,928
1960 <u>1/</u> -----	1,173,548	1,044,510	84,842	44,196
1961 <u>1/</u> -----	1,110,377	959,423	60,911	73,660
1962 (Jan.-June) <u>1/</u> ---	949,243	876,860	57,651	14,732
Unit value (per pound) <u>2/</u>				
1954-----	\$2.97	\$2.93	\$6.73	\$3.00
1956-----	3.20	2.82	6.68	6.68
1957-----	3.14	2.79	6.68	6.68
1958-----	3.02	2.82	6.60	6.68
1959-----	3.24	2.86	6.36	6.68
1960 <u>1/</u> -----	2.95	2.77	6.42	6.68
1961 <u>1/</u> -----	3.18	2.94	6.68	6.68
1962 (Jan.-June) <u>1/</u> ---	2.72	2.59	6.66	6.68

1/ Preliminary.

2/ The value data represent dutiable values, which are based on "American selling price."

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

Table 2.--U.S.P. lignin vanillin: U.S. producers' prices on large orders, February 1956-June 1962 ^{1/}

Opening date	Change initiated by	Price per pound	Minimum quantity	Jobber discount
			Pounds	Percent
February 1956-----	Sterling Drug Co.	\$2.75	100	10
March 1957-----	Monsanto Chemical Co.	2.85	1,000	None
June 1958-----	Monsanto Chemical Co.	3.00	1,000	None
September 1960----	Sterling Drug Co.	3.00	100	10
	Monsanto Chemical Co.	2.70	2,000	None
	Sterling Drug Co.	2.70	100	10
	Monsanto Chemical Co.	2.50	2,000	^{2/} 10
December 1960----	Monsanto Chemical Co.	3.00	2,000	^{3/} 10
April 1962-----	Sterling Drug Co.	3.00	500	^{3/} 10

^{1/} Subject to discount of 1 percent for cash.

^{2/} Based on the price of \$2.70.

^{3/} Based on the price of \$3.20.

Source: Compiled from data submitted to the U.S. Tariff Commission by the producers.