



सत्यमेव जयते

GOVERNMENT OF INDIA  
TARIFF COMMISSION

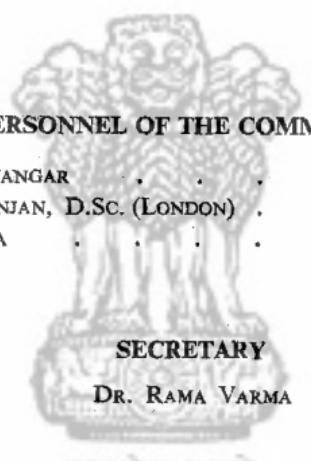
**REPORT**

**ON**

**The Continuance of Protection to the  
Titanium Dioxide Industry**

**BOMBAY 1961**

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**DR. RAMA VARMA**

सत्यमेव जयते

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 8th September, 1961.

**RESOLUTION**

**Tariffs**

No. 8(1)-T.R./61.—The Tariff Commission has submitted its Report on the continuance of protection to the Titanium Dioxide Industry on the basis of an inquiry undertaken by it under sections 11(e) and 13 of the Tariff Commission Act, 1951. Its recommendations are as follows:

- (1) Protection to the industry should be continued for a further period of three years ending with 31st December, 1964, at the existing rate of protective duty of 35 per cent *ad valorem* (preferential) and 45 per cent *ad valorem* (standard).
- (2) Travancore Minerals Ltd. should re-examine the question of supply of ilmenite to Travancore Titanium Products Ltd., and arrange to supply the material to this firm at a reduced rate, not necessarily equated to export price.
- (3) Kerala State Government should take adequate steps to maintain the canal from Alwaye to Trivandrum free from congestion and in navigable condition at all times throughout the year.
- (4) The industry should carry out research with a view to diversifying its output and undertaking production of any grade for which a substantial demand may develop.

2. Government accept recommendation (1) and necessary legislation will be undertaken in due course.

3. Attention of the Travancore Minerals Ltd. is drawn to recommendation (2) for examination and such action as may be feasible.

4. The attention of the Kerala State Government is drawn to recommendation (3).

5. The attention of the industry is drawn to recommendation (4).

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**ORDER**

ORDERED that a copy of the Resolution be communicated to all concerned and that it be published in the Gazette of India.

B. N. ADARKAR,  
*Joint Secretary to the Govt. of India.*

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## REPORT ON THE CONTINUANCE OF PROTECTION TO THE TITANIUM DIOXIDE INDUSTRY

1. This is the fourth tariff inquiry into the titanium dioxide industry, previous inquiries having been held in 1953, 1955 and 1957. In 1953 we recommended grant of protection to the industry upto 31st December 1954 by converting the then existing

### Previous tariff inquiries

revenue duty of 25.2 per cent *ad valorem* (preferential) into an equivalent protective duty, the standard rate to be fixed in accordance with the terms of the Indo-British Trade Agreement of 1939. The recommendation was accepted by Government and protection was granted to the industry by the levy of protective duties of 25.2 per cent *ad valorem* (preferential) and 35.2 per cent *ad valorem* (standard). By the Finance Act of 1954 the rates of protective duty were increased to 25.2 per cent *ad valorem* plus one-fourth of the total duty (preferential) and 35.2 per cent *ad valorem* plus one-fourth of the total duty (standard). In consultation with us and pending a review by us, protection at the prevailing rates of duty was extended by one more year, upto 31st December, 1955 by the Indian Tariff (Third Amendment) Act, 1954. The second inquiry was held in 1955 and we recommended continuance of protection to the industry at the then existing rates of duty for two years more, i.e., upto 31st December 1957. Government accepted the recommendation regarding grant of protection, but decided, with the concurrence of the Commission, to fix the protective rates of duty at 34 per cent *ad valorem* (preferential) and 44 per cent *ad valorem* (standard) and also exempted this item from surcharge. The above rates of duty were brought into force with effect from 2nd July 1955. By the Finance Act, 1957 the rates of duty were raised to 35 per cent *ad valorem* (preferential) and 45 per cent *ad valorem* (standard). The last inquiry into this industry was undertaken in 1957 and on our recommendation protection was continued at the rate of 35 per cent *ad valorem* (preferential) and 45 per cent *ad valorem* (standard) for a further period of four years i.e., upto 31st December 1961.

2. We have undertaken the present inquiry under Section 11(e) read with Section 13 of the Tariff Commission Act, 1951, which empowers us to inquire into and report on any further action required in relation to protection granted to an industry with a view to its increase, decrease, modification or abolition according to the circumstances of the case.

### Present inquiry

3.1. A press note was issued on 16th November 1960 inviting parties interested in the inquiry as producer, importer or consumer to obtain copies of the relevant questionnaire prepared by us in connection with this inquiry. A special questionnaire was issued to Travancore Titanium Products Ltd., Trivandrum, the sole producer of titanium dioxide in the country.

Questionnaires were also issued to all importers and consumers of titanium dioxide in November 1960. The Development Wing was requested to furnish a detailed memorandum on the progress of the industry since the Commission's last inquiry and its present position. The Collectors of Customs at Bombay, Calcutta, Madras and Cochin were asked to furnish c.i.f. prices of latest imports of titanium dioxide at their respective ports. The Government of Kerala was requested to furnish a memorandum on the various problems of the industry in the State. All State Governments were also addressed to send their views in case they were interested in the industry. T. T. Krishnamachari & Co., the sole selling agent of Travancore Titanium Products Ltd., was asked to furnish information about the present distribution system and selling prices of titanium dioxide. A letter was also addressed to Botanium Ltd., Bombay, a prospective producer who has been recently granted a licence, to furnish details regarding location of the factory, licensed capacity and probable date of commencement of production, etc. A list of those to whom questionnaires and letters were issued and from whom replies were received is given in Appendix I.

3.2. Shri K.R.P. Aiyangar, Chairman, Dr. S. K. Muranjan and Shri J. N. Dutta, Members, visited the factory of Travancore Titanium Products Ltd., Trivandrum on 20th January 1961. Shri S. Saha, Technical Director (Chemicals) visited the same factory on 21st December 1960. The cost of production of titanium dioxide produced in this factory was examined by Shri P. M. Menon, Cost Accounts Officer, during 26th to 28th December, 1960.

3.3. The public inquiry into this industry was held on 7th February 1961 and further discussions on the cost report held with the representatives of Travancore Titanium Products on 8th February 1961. A list of persons who attended the public inquiry is given in Appendix II.

4. Titanium dioxide is produced generally in two grades, namely, anatase and rutile. For certain industrial uses the latter is preferred. Though indigenous production started only with anatase, the scope of protection covers all grades of titanium dioxide.

5.1. The recommendations made by us in our last Report in 1957 on matters other than tariffs together with brief details of action taken to implement them are given below:

5. Implementation of recommendations made by the Commission in its last Report (1957) on matters other than tariffs

5.1.1. "With a view to conservation of foreign exchange import of anatase titanium dioxide should be permitted only to actual users to the extent, required to fill the gap between internal production and actual demand and imports of the rutile type of pigment should be carefully regulated to the extent of actual requirements of such consumers as cannot make use of the anatase type. Imports of lithopone should be strictly regulated in such a manner as to make the product available only for paint formulations in which titanium dioxide is not found suitable on technological grounds and for bona fide users only."

We are informed that titanium dioxide and lithopone which were licensed for import by actual users on an *ad hoc* basis during January-June 1957 licensing period, were completely banned for import during the July-September 1957 licensing period. Since then no licences had been issued to established importers, but actual users were granted licences on an *ad hoc* basis to import titanium dioxide and lithopone. The subject is also discussed in paragraph 10.1.

5.1.2. "The Government should view with favour the Company's expansion plans covering both types of titanium dioxide."

Travancore Titanium Products Ltd. took up its expansion plans in two stages, the first stage aiming at an increase of production from 5 tonnes\* to 7½ tonnes\* per day and the second from 7½ tonnes\* to 10 tonnes\* per day. Necessary import licence to cover most of its capital equipment for the first stage was received by the company in February, 1958. During April 1959 the Government of India approved the request of the company for import of capital equipment worth Rs. 26.6 lakhs for the second stage of expansion. The first stage of expansion of capacity is complete and the second stage of development comprising both anatase and rutile manufacture is nearing completion.

5.1.3. "Government should expedite decision on the issue of grant of licence for importing the requisite machinery for a 50 ton per day sulphuric acid plant to be erected at the factory site of Travancore Titanium Products Ltd."

Government have implemented this suggestion and Travancore Titanium Products Ltd., has informed us that the erection of the sulphuric acid plant was completed in April 1960 and that it has been working since then.

5.1.4. "Supply of ilmenite should be made to Travancore Titanium Products Ltd., after recovery of the "basic charge". An undertaking should be given to the company that the recovery price will remain frozen for a period of four years subject to any escalator clause that may be necessary."

We recommended the concession on the grounds that being an industrial raw material the cost of titanium dioxide should be kept as low as possible and that the only advantage to the indigenous industry was proximity to ilmenite its main raw material. The only concession which will enable the industry to lower its cost of production and also help its entry into the export market would be lower cost of ilmenite. In 1959 Government considered that as in fixing the ceiling price of Rs. 146 per cwt., the higher cost of ilmenite had been taken into account. Ilmenite is now being supplied by Travancore Minerals Ltd., the shares of which are held by Government of India, Kerala Government and Madras Government. This company maintains two prices, one for sale for 10,000 tonnes and above a year and the other for less than 10,000 tonnes a year. The latter rate is higher by 5 shillings a tonne. Since the

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\*In the previous Reports capacity had been given in long tons.

requirements of Travancore Titanium Products Ltd. were less than 10,000 tonnes a year upto 1960, it had to pay the higher rate for its ilmenite. At present it buys ilmenite at about 88.6 shillings a tonne which is the price at which the exports take place. In paragraph 13.4 we have noted the steady efforts of Travancore Titanium Products Ltd. to improve its efficiency increase production and bring down consumption factors affecting costs. With the technical know-how it has secured, the company should be able to lower its costs further, so that given the concession in respect of ilmenite which we had recommended previously, the entry of the indigenous product into the export market would be feasible. It is not uncommon for a country to charge its domestic customers for industrial raw materials a lower rate than that for export. With the coming in of another production unit by 1963, there may become available a quantity of titanium dioxide for export and the main factor which will facilitate export would be a reduction in the cost of ilmenite. Considering that the foreign exchange that could be earned by export of titanium dioxide will be more than ten times the cost of ilmenite, we feel that the recommendation we had made in our earlier Report of 1957 should be reconsidered.

- 5.1.5. "The Kerala State Government should take adequate steps to maintain the canal from Alwaye to Trivandrum free from congestion and in navigable condition at all times throughout the year."

After dredging operations carried out by the firm with necessary assistance from Government, the position is stated to have improved. Further, as sulphuric acid is now being manufactured in the factory, the use of the canal for this purpose has ceased. Nevertheless, we notice that because of silting at places, free transport by canal is not yet possible all throughout the year, ilmenite brought by canal is still required to be transported by lorry to the factory, from the place at which it is off-loaded and this has added substantially to the cost of transport. In the interests not only of this unit but also of all other industries in the State which depend for movement of their raw materials on the canal, we would again commend our suggestion for making the canal navigable throughout the year to the State Government.

- 6.1. Travancore Titanium Products Ltd. continues to be the only manufacturer of titanium dioxide in the country. There has been no change in its capital structure since the last inquiry in 1957, the authorised capital remains at Rs. 75 lakhs and the paid-up capital at Rs. 73.11 lakhs. The first loan of Rs. 15 lakhs taken from the Industrial Finance Corporation of India in 1954 is likely to be repaid fully before the end of 1961. Meanwhile the company has taken from the Corporation another loan of Rs. 36 lakhs for its expansion programmes. This loan is repayable by annual instalments of Rs. 4 lakhs beginning from 1962 and interest is to be paid half yearly at the rate of 6½ per cent per annum. The total net addition to the capital of the company from the beginning of 1954 to the end of 1959 is reported to be Rs. 80.68 lakhs made up to the extent of Rs. 60.68 lakhs

from internal resources (depreciation reserves and retained profits). A further expenditure of about Rs. 30 lakhs has been incurred in 1960 on erection of the sulphuric acid plant and other equipments for expansion.

6.2. In 1957 Travancore Titanium Products Ltd. had an annual capacity of 1,830 tonnes (1,800 tons) for the manufacture of anatase grade of titanium dioxide. However it had expansion schemes for doubling its capacity to 3,660 tonnes for the manufacture of both anatase and rutile grades and also for establishing a sulphuric acid plant with a daily capacity of 50 tonnes. The company has carried out its expansion programmes in stages. At present it has completed the first stage of its expansion programme and has reached a capacity of about 2,900 tonnes per annum. The sulphuric acid plant was also erected and commissioned in April 1960. The company expects to complete its second stage of expansion by the middle of 1961 when it will be in a position to manufacture 3,660 tonnes of titanium dioxide per annum of which half will be rutile. The total cost of the expansion programme is estimated at Rs. 76 lakhs.

6.3. The company has now taken up another expansion scheme to raise its capacity to 6,600 tonnes (6,500 tons) per annum. It expects to undertake this scheme in 1962. Additional capital required for this scheme is estimated at Rs. 22.23 lakhs and will be met from the company's own resources.

6.4. A new undertaking of Nowrosjee Wadia & Sons, Bombay, has been licensed for the establishment of a new unit in the name of Botanium Ltd., with an annual capacity of 4,470 tonnes (4,400 tons) in technical collaboration with Laporte Titanium Ltd., England. This unit will also have a sulphuric acid plant with a daily capacity of 100 tonnes. The foreign collaborators will give to this unit the 'know-how' for the process and will also help it in the designing and erection of the plant and machinery and in the training of Indian personnel. The new factory which will be located near Thana is expected to commence production in 1963. It has a plan to produce approximately 3,300 tonnes of anatase grade and 1,100 tonnes of rutile grade titanium dioxide per annum.

6.5. If the new unit, Botanium Ltd., commences its production in 1963 and Travancore Titanium Products Ltd. also completes its expansion scheme by that year, the total capacity for production of titanium dioxide in the country will rise to 11,070 tonnes per annum by the end of 1963.

6.6. At present Travancore Titanium Products Ltd., is producing only anatase grade of titanium dioxide. A granular grade is supplied to the vitreous enamel industry and a fine grade to the rayon industry. The total production was 1,701 tonnes in 1957, 1,743 tonnes in 1958, 1,872 tonnes in 1959 and 2,721 tonnes in 1960. In 1961 the company expects to produce 2,700 tonnes of anatase and for the first time 900

tonnes of rutile from the middle of the year. During the years 1962 and 1963 the company expects to produce about 1,800 tonnes each of anatase and rutile.

7.1. The principal raw materials for the manufacture of titanium dioxide, both anatase and rutile grades, are ilmenite sand, sulphuric acid and scrap iron. Besides these a few auxiliary chemicals are also used in small quantities. All the basic raw materials as well as most of the auxiliary chemicals are indigenously available.

## 7.2. Ilmenite sand

7.2.1. Ilmenite sand is supplied to the manufacturer by Travancore Minerals Ltd., a Government company whose shares are held by the Central Government and State Governments of Kerala and Madras. This company is the successor to Travancore Minerals Concerns which was completely owned and managed by the Government of Kerala. Ilmenite is supplied to the manufacturer at naked ex-works price which at present comes to about Rs. 59 per tonne\* (Rs. 60 per ton). This price is equivalent to the present export price of 88.6 shillings per tonne\* (90 shilling per ton) and is almost double the price the manufacturer paid before 1957. The Commission had then recommended that supply of ilmenite should be made to Travancore Titanium Products Ltd., only after recovery of the 'basic charge' and that an undertaking should be given to the company that the recovery price would remain frozen for a period of four years subject to an escalator clause that might be necessary. As stated in paragraph 5.1.4, the Government of India in the Ministry of Commerce and Industry decided in 1959 that there was no justification for accepting the recommendation of the Tariff Commission. Travancore Minerals Ltd., in its memorandum to us has also stated that it is not in favour of supplying ilmenite at a rate lower than the export price, as according to it the supply at a concessional rate will affect its financial position considerably. It has urged that if any assistance is needed for titanium dioxide it should take the form of a direct subsidy by Government. We have carefully considered the question again. Travancore Minerals Ltd. used to charge till recently a higher price for ilmenite from Travancore Titanium Products Ltd. The differential thus placed the latter at a disadvantage *vis a vis* overseas producers. Selling prices are fixed on several considerations and not infrequently, prices of industrial raw materials in the domestic market are lower than those quoted for export. In the present case the requirements of the indigenous industry are only a fraction of the total export of ilmenite. It would not be proper to reject the demand for a lower price for the domestic market on the ground that it savours subsidy so long as the price adequately covers the cost of production. We have also viewed the question from the point of advantage to be gained for the country if the titanium dioxide industry is able to export its product. We are on a fair way to export the pigment if its cost of production is reduced

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\*Figures converted in metric unit.

further. We therefore, reiterate the points urged in paragraph 5.1.4. and recommend that Travancore Minerals Ltd. should re-examine the matter and arrange to supply ilmenite to the Travancore Titanium Products Ltd. at a reduced rate.

7.2.2. The other prospective manufacturer, Botanium Ltd., is likely to go into production in 1963. It will in the beginning use ilmenite from Kerala. It is presumed that the concession recommended for Travancore Titanium Products Ltd. will be extended to this unit also. This unit expects to utilise the deposits at Ratnagiri when they are proved.

7.3. *Sulphuric acid*.—As stated in paragraph 6.2. the company has installed a 50 tonne sulphuric acid plant which has been operating since April 1960. At present the capacity of titanium dioxide being of the order of 8 tonnes per day, the sulphuric acid plant is not working to its full capacity. Its full capacity will be utilised when the production of titanium dioxide exceeds 12 tonnes per day in the third phase of expansion (from 10 tonnes to 20 tonnes per day). When the production goes further up, the company expects to augment its supply of sulphuric acid from outside sources.

7.4. Other chemicals required for the manufacture of titanium dioxide are used only in small quantities and most of them are available indigenously. Zinc dust, antimony oxide and mono-ammonium phosphate are, however, imported. Titanium tetrachloride, which is an important seed chemical for the manufacture of rutile grade will also have to be imported.

7.5. Next to sulphuric acid and ilmenite which form the bulk raw materials for titanium dioxide the major items of cost are fuel and power. By switching over to kerosene oil in place of high speed diesel oil for calcination of titanium dioxide the manufacturer achieved some economies. We were informed that because of possibility of impurities being deposited in the kiln, furnace oil which might be cheaper cannot be used. Power supply is from the Kerala Electricity Board and will have to be augmented for the further expansion of capacity. The manufacturer, however, does not expect any difficulty on this ground.

7.6. Titanium dioxide requires blanc fixe as an extender. This is at present imported but licences for its manufacture have been issued to a few parties.

8.1. In 1957 we estimated the current domestic demand for titanium dioxide at 2,600 tonnes\* comprising 2,200 tonnes\* of anatase and 400 tonnes\* of rutile and the future demand for 1960 at 4,800 tonnes\* out of which 3,600 tonnes\* was to be for anatase and 1,200 tonnes\* for rutile. In connection with the present inquiry we have received varying estimates of current and future demand.

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\*In the previous Report these figures were taken as "tons".

The Development Wing has estimated the current demand at 5,080 tonnes and expects it to rise to 6,096 tonnes in 1962 and 8,128 tonnes in 1963. The producer has estimated the demand at 5,588 tonnes for 1961, 6,706 tonnes for 1962 and 8,738 tonnes for 1963. T. T. Krishnamachari & Co., the sole selling agent, has placed the demand at 6,060 tonnes for 1961, 7,482 tonnes for 1962 and 8,685 tonnes for 1963.

8.2. T. T. Krishnamachari & Co., has also made a market survey regarding the demand of the different industries for this product. This information as furnished to us is given in the following table:—

(Figures in tonnes)

Trade Classification	Anatase Grade			Rutile Grade			Total		
	1961	1962	1963	1961	1962	1963	1961	1962	1963
1. Paint . . .	2,099	2,628	3,040	1,575	1,975	2,259	3,674	4,603	5,299
2. Rubber . . .	875	1,026	1,160	43	57	70	918	1,083	1,230
3. Linoleum . . .	21	23	25		5	6	25	28	31
4. Leather and leather polish . . .	37	51	60	..	..	..	37	51	60
5. Plastics . . .	103	115	135	53	81	108	156	196	243
6. Soap . . .	94	110	122	..	..	..	94	110	122
7. Printing ink . . .	147	165	185	36	65	80	183	230	265
8. Paper . . .	67	84	109	..	..	..	67	84	109
9. Rayon . . .	147	189	256	..	..	..	147	189	256
10. Ceramics . . .	8	11	15	..	..	..	8	11	15
11. Electrodes . . .	34	46	58	..	..	..	34	46	58
12. Textiles . . .	436	508	581	..	..	..	436	508	581
13. Vitreous enamels	220	265	319	4	5	6	224	270	325
14. Cosmetics . . .	3	4	5	..	..	..	3	4	5
15. Dealers . . .	No estimate			No estimate			No estimate		
16. Miscellaneous . . .	46	59	74	6	7	8	52	66	82
17. Laboratory and research . . .	2	3	4	..	..	..	2	3	4

TOTAL . . . 4,339 5,287 6,148 1,721 2,195 2,537 6,060 7,482 8,685

8.3. The Development Wing and the producer have also given the break-up of the demand into different grades, namely, anatase and rutile, as shown below:—

Figures furnished by	(Figures in tonnes)								
	1961			1962			1963		
	Ana- tase	Rutile	Total	Ana- tase	Rutile	Total	Ana- tase	Rutile	Total
Development Wing	3,861	1,219	5,080	4,572	1,524	6,096	6,096	2,032	8,128
Travancore Titanium Products Ltd.	3,048	2,540	5,588	2,642	4,064	6,706	2,642	6,096	8,738

8.4. On the basis of sales and imports of titanium dioxide it appears that the apparent consumption of titanium dioxide was 3,279 tonnes in 1959 and about 4335 tonnes in 1960 as given in the following table:—

Year	ANATASE			RUTILE			Total consumption of Anatase & Rutile
	Sales	Imports	Total	Sales	Imports	Total	
1957	1,701	267	1,968	..	285	285	2,253
1958	1,728	450	2,178	..	360	360	2,538
1959	1,800	693	2,493	..	786	786	3,279
1960	2,700	666	3,366	..	969	969	4,335

The apparent consumption in 1960 will show that the estimate made by us for that year was realistic.

8.5. The estimates of domestic demand and the trend of consumption were discussed at the public inquiry. Taking the various factors into consideration and allowing for increased requirements of consumer industries during the period, it was agreed that it would be reasonable to place the demand for titanium dioxide during 1961 and for the next two years, split up into anatase and rutile as shown in the following table:—

Year	(Figures in tonnes)		
	Anatase	Rutile	Total
1961	4,500	1,500	6,000
1962	5,000	2,000	7,000
1963	6,000	3,500	8,500

In making this assessment we have also taken note of the extent to which titanium dioxide can replace imported white pigments like lithopone, zinc oxide and white lead. We are informed that although lithopone can be replaced entirely by titanium dioxide, both zinc oxide and white lead have special uses. These two pigments are also produced in the country.

9.1. Till now Travancore Titanium Products Ltd., has been manufacturing titanium dioxide of anatase grade only. The indigenous product fully satisfies the specifications of I.S.I. standard No. 411-1953 (Titanium Dioxide for paints). Since February 1959 the firm has been marketing the product under I.S.I. mark. Most of the users of this product namely, paints, rubber and rayon manufacturers have expressed satisfaction about the quality. There were minor complaints from a few paint manufacturers who reported that the whiteness of the indigenous product is not equal to that of some of the imported varieties of titanium dioxide. One soap and cosmetic manufacturer expressed the view that though copper content has come down, the iron content of indigenous anatase is still high and it is not suitable.

9.2. At the public inquiry, one paint manufacturer urged that apart from slightly inferior whiteness of the indigenous product the present quality of anatase is not as suitable for manufacture of paints for some special uses as some of the imported grades. In this connection, it was mentioned that Japan produces six or seven grades of titanium dioxide, each having some specific properties and specially suitable for some purpose and the paint manufacturers desired that the protected industry should now take steps to meet the demand for such specialised products needed in the production of paints particularly those meant for export. Otherwise, it was contended that paint manufacturers could not compete in the export market.

9.3. These complaints were fully discussed at the public inquiry. The representative of the producer firm, Travancore Titanium Products Ltd., pointed out that his present anatase grade compares favourably with that of the British titanium products both in quality and whiteness. This product could not, however, satisfy all the varied requirements of different users who want titanium dioxide with some specific properties. When rutile grade is manufactured, it will be found suitable for a few other consumers. As regards iron content, it was agreed that it is only about 60 parts per million and that with the present method of manufacture, it cannot be brought down any further. The representative of the producer also pointed out that with the present small capacity of the indigenous plant in comparison with that of overseas manufacturers, it was not possible to diversify his output and manufacture products with different specific properties. This could, however, be undertaken to a limited extent in future if it is possible to attain a much higher capacity or more units come into production. There is force in this contention. At the same time we consider that as the industry

is getting stabilised it should not rest content with only the present two grades in view but must carry out research to achieve reasonable diversification so that indigenous production of other grades might be started in due course.

10.1. *Import control policy*—For the purpose of import control titanium dioxide is classified under item No. 37(e) of Part V of the Import Trade Control Schedule. No licences for import of titanium dioxide have been issued to established importers since 1955. Licences have been issued to actual users on an *ad hoc* basis except for the period July-September 1957 when imports were totally banned. With effect from the licensing period April-September 1959, licences for import of titanium dioxide were issued against export of cotton fabrics upto a small per cent of the f.o.b. value of such exports.

10.2. *Imports*—Imports of titanium dioxide, during 1957, 1958, 1959 and 1960 separately for anatase and rutile varieties as recorded in the Monthly Statistics of Foreign Trade of India are given below:—

Year	Anatase		Rutile		Total	
	Quantity (M. tonnes)	Value Rs.	Quantity (M. tonnes)	Value Rs.	Quantity (M. tonnes)	Value Rs.
1957 . .	266.81	6,49,167	284.90	8,26,252	551.71	14,75,419
1958 . .	449.60	10,08,618	359.93	9,63,783	809.53	19,72,401
1959 . .	693.40	14,98,780	786.11	19,26,563	1479.51	34,25,353
1960 . .	666.37	15,53,166	968.54	24,56,207	1634.91	40,09,373

A detailed statement showing country-wise imports of titanium dioxide of anatase and rutile grades is given in Appendix III. Total imports of titanium dioxide rose from Rs. 14.75 lakhs in 1957 to Rs. 34.25 lakhs in 1959 and reached Rs. 40.09 lakhs during 1960. The increasing trend fully reflects the growing demand for the pigment. During 1959 and 1960 the bulk of imports came from U. K., Japan and Germany.

11. As observed in our Report of 1957 small quantities of titanium dioxide had been exported between 1954 and 1956. But as subsequently there was considerable rise in internal demand exports did not take place after 1956. But with the development of the industry referred to in paragraph 6 it would have potentialities for export in its products.

12. Titanium dioxide is assessed to duty under Item No. 30 (14) of the First Schedule to the Indian Tariff Act 1934, the relevant extract from which is reproduced below:—

Item No.	Name of the article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rates of duty
				The United Kingdom	A British Colony	Burma	
30 (14)	Titanium dioxide.	Protective	35 per cent <i>ad valorem</i> plus the excise duty for the time being leviable on like articles if produced or manufactured in India, and where such duty is leviable at different rates, the highest duty.	..	..	..	December 31, 1961.
	(a) of British manufacture.						
	(b) not of British manufacture.	Protective.	45 per cent <i>ad valorem</i> plus the excise duty for the time being leviable on like articles if produced or manufactured in India, and where such duty is leviable at different rates, the highest duty.	..	..	..	December 31, 1961.

Since 1955 by a Government Notification titanium dioxide, however, continues to be exempted from the excise duty.

13.1. The cost of production of titanium dioxide at the factory of Travancore Titanium Products Ltd., has been gone into by our Cost Accounts Officer. A copy of his report has been forwarded to Government as a confidential enclosure of this Report.

13.2. There has been a major change in the managerial set up of the Company since our last Report. The Managing Agency of Indian Titan Products Company (Private) Ltd., having ceased to operate from 16th August, 1960 the Company has since been under the management of its Board of Directors with a Managing Director. In accordance with the law, the Company decided to close its accounts for the 7½ months

ending 15th August 1960 and drew up the balance sheet and profit and loss account for the period ending with the termination of the Managing Agency. These accounts were examined and the cost of manufacture of titanium dioxide which would form the basis for estimating the future cost of production duly worked out. The details thereof have been discussed and agreed to by the representatives of the Company. As the Company has a fair system of process costing it was found possible to ascertain the cost of production at each stage of manufacture.

13.3. The Company has been carrying out by stages expansion programmes to raise its annual capacity from 1800 tonnes as it stood at the time of our last inquiry to 6,600 tonnes ultimately. By the end of 1960 it had reached a capacity of 2,900 tonnes per annum and before the middle of 1961 its capacity will reach the second stage expansion target to 3,660 tonnes per annum. The plant will be capable of producing up to that level either anatase or rutile or any desired proportion of both products as may be required. The output in 1961 may be about 3,400 tonnes as erection of extra process plant for this purpose has just been completed. We have estimated the output for the three years ending December, 1963 as 3,500 tonnes per annum and accepted the Company's statement that the output would be 50 per cent each of anatase and rutile, though another manufacturer who is yet to go into production and some others had expressed the view that effective demand would be in the ratio 2:1 for anatase and rutile.

13.4. During the cost-period it was found that the Company had achieved considerable economies in the consumption of materials like ilmenite, sulphuric acid and fuel oil (kerosene is being used instead of high speed diesel oil) as well as electricity and steam. By setting up its own sulphuric acid plant which has been commissioned since April, 1960 the cost of sulphuric acid, which was previously obtained from another source, has been brought down considerably. Since our last assessment of costs, prices of many other articles have, however, gone up, particularly an increase of Rs. 37 per tonne in the price of ilmenite which would account for a rise of Rs. 75 per tonne of titanium dioxide, has occurred owing to denial of the concessional N. A. W., price recommended by us. The cost of other raw materials has increased due to enhancement or additional impost of excise and import duties by the Finance Bill of 1961. There has also been increase in labour costs due to increments, provident fund benefits, implementation of tribunal awards and grant of bonus. Nevertheless, due to improvements in operative efficiency as well as economies of larger production, the ex-works costs have come down considerably. We have provided for payment of technical fee for British Titan Products Ltd., the consultants who were associates of the erstwhile Managing Agents. As the latter will no longer be receiving the 10 per cent share in the profit which they did as Managing Agents the producer feels obliged to settle the question of fee and know-how amicably with the foreign consultant whose continued collaboration is needed. A suitable element for contingency has also been allowed. Depreciation has been calculated taking into account the increased capital expenditure involved in the current expansion plan.

Although the company has already obtained a licence and proposes to make a quick start on its further expansion plan for raising the output to 6,600 tonnes, we have not included the expenditure in the capital cost as the expansion might become effective only late in 1963. At the same time we have paid due attention to the way in which the Company has purposefully employed its internal resources in full towards its expansion, the large loan it has obtained from the Industrial Finance Corporation to supplement its resources for the expansion and the extent to which it has still to raise fresh capital to make its capital structure more balanced. Weight to these considerations have to be given while considering fair selling price for titanium dioxide as distinguished from the fair ex-works price adopted for the purpose of determining the quantum of protection. Working capital has been computed as equivalent to six months' cost of production exclusive of depreciation. A return at 12 per cent on the capital employed has been allowed.

13.5. *Fair ex-works price (inclusive of freight and delivery charges).*—The fair ex-works prices inclusive of freight and delivery charges for the two varieties of titanium dioxide as worked out are summarised in the following statement in which the Commission's estimate for anatase for 1958 are also included for purposes of comparison.

Particulars	Commission's estimate of price for 1958 per L. ton	Estimates for future			
		Anatase		Rutile	
		Rs. per L. ton	Rs. per M. ton	Rs. per L. ton	Rs. per M. ton
1. Raw materials . . . .	977.17	533.75	525.31	869.29	855.55
2. Power & fuel . . . .	304.64	257.30	253.23	343.40	337.97
3. Process Lab. and materials . . . .	57.00	60.05	59.10	60.05	59.10
4. Repair Lab. and materials . . . .	58.00	66.76	65.71	66.76	65.71
5. Process maintenance and supervision . . . .	37.00	31.79	31.29	31.79	31.29
6. Other overheads . . . .	232.00	289.08	284.51	289.08	284.51
7. Depreciation . . . .	241.57	351.57	346.02	351.57	346.02
8. Packing . . . .	55.07	52.00	51.18	52.00	51.18
	1,962.45	1,642.30	1,616.35	2,063.94	2,031.33
9. Return (on capital employed @ 12%) . . . .	371.69	367.54	361.67	367.54	361.67
	2,334.14	2,009.84	1,978.02	2,431.48	2,393.00
10. Add margin for contingencies . . . .	40.00	60.00	59.05	60.00	59.05
	2,374.14	2,069.84	2,037.07	2,491.48	2,452.05
11. Freight and delivery charges . . . .	156.00	138.00	135.82	138.00	135.82
12. Fair ex-works price inclusive of freight and delivery charges . . . .	2,530.14	2,207.84	2,172.89	2,629.48	2,587.87

On the above basis the fair ex-works price works out to Rs. 110.39 per cwt. or Rs. 108.64 per 50 Kg. for anatase and Rs. 131.47 per cwt. or Rs. 129.39 per 50 Kg. for rutile variety of titanium dioxide which compares with the weighted average of Rs. 127.94 per cwt. estimated in 1957. The above fair ex-works prices are meant only for purposes of comparison with c.i.f. prices in determining the quantum of protection. These are not the selling prices to consumers which will have to be determined in fair relation to the above costs by adding selling expenses and other relevant items to enable the Company to meet all its commitments.

14. A statement showing the c.i.f. prices, customs duty, clearing charges and landed costs of latest imports of titanium dioxide as furnished by the Collectors of Customs and some importers is given in Appendix IV of this Report. For anatase the lowest c.i.f. price is from Japan namely Rs. 2040 per tonne. Imports from U. K. range between Rs. 2320 to Rs. 2373 and from Germany between Rs. 2195 and Rs. 2453. For rutile the Japanese c.i.f. prices range from Rs. 2090 to Rs. 2186 while U.K. prices are from Rs. 2200 to Rs. 2500. U.S.A. prices are higher. We have for purposes of determining tariff protection taken the lowest Japanese price of Rs. 2040 and Rs. 2080 for anatase and rutile respectively. We were informed at the public inquiry that there were several grades of the two products in the main exporting countries and a price differential of £ 15 or Rs. 200 per ton would be normal.

15. The following table provides a comparison of the fair ex-works prices inclusive of freight and delivery charges of indigenous titanium dioxide with the landed cost of imported pigments from Japan, the cheapest source of supplies.

	Anatase per tonne	Rutile per tonne
	Rs.	Rs.
1. Fair ex-works price inclusive of freight and delivery charges	2,173	2,588
2. C. i. f. price	2040	2080
3. Clearing charges	102	104
4. Landed cost without duty	2,142	2,184
5. Excess of fair ex-works price over landed cost	31	404
6. Above excess as a percentage of c.i.f. price	1.52	19.42

16. During the seven years that Travancore Titanium Products Ltd., has enjoyed the benefits of protection, it has shown good progress in expanding its production and succeeded in improving operative efficiency and bringing down costs. It has not only completed its expansion as scheduled raising its output from 5 tonnes

to 10 tonnes per day, but has been further licensed to expand its output from 3,660 tonnes to 6,600 tonnes. Of the entire cost of expansion, namely, Rs. 76 lakhs, more than Rs. 60 lakhs has been found from internal resources. As regards further expansion it has to find other resources including the raising of fresh capital. Production of rutile has still to commence and requires special processes and very careful quality control. In comparison with the Western countries and Japan which have various grades or qualities of anatase and rutile, the producer at present manufactures only one standard grade of the product. Development of production of additional varieties which are needed for industrial consumption would also be necessary to meet demand of indigenous industries and is essential before entry of the product into export markets can be successful. At the same time the significant trends regarding lowering of production costs are fairly indicative of the potentiality of this industry to be able to compete in export markets in due course. Since 1957 when we last reported the prices of titanium dioxide, which had then shown a tendency to rise, have again come down making competition keener for the indigenous product. Travancore Titanium Products Ltd., has requested that protection to the industry should be continued for a further period of 3 years on the grounds that it will help the firm to stabilise its production after the initial heavy capital outlay is incurred and also assist in establishing a market for rutile which will shortly be produced. Although effective import control has been indirectly helping the industry, it is no alternative to tariff protection. The quantum of imports will continue to be large for a long time to come till indigenous production can catch up with the growing demand. Another unit of the industry which has just been licensed is also likely to go into production only in 1963 from whom there may be effective competition. If protection is continued to the industry the interests of the consumer can be safeguarded by bringing down the present prices of titanium dioxide. But for the proper stabilisation of the industry and its expansion, we consider that continuance of protection for a further period of 3 years will be necessary. At the same time, having regard to the fair ex-works prices of the product, it will be seen that no tariff protection would be necessary on anatase and 20 per cent *ad valorem* duty would be sufficient for rutile. In view, however, of all the circumstances of the case as stated above, it is desirable that titanium dioxide, irrespective of the category being anatase or rutile, should continue to receive some tariff protection. We recommend that the existing protective duty of 35 per cent *ad valorem* (preferential) and 45 per cent *ad valorem* (standard) for titanium dioxide may be continued for a further period of three years ending 31st December, 1964.

17.1. There is at present no statutory control over the selling prices of titanium dioxide. The Company, however, fixes its prices in consultation with Government. The current selling price of titanium dioxide (anatase) produced by the Company is Rs. 146 per cwt. ex-selling agents' godowns in Bombay, Calcutta and Madras. This price has been in force since 1958.

17. Selling prices and selling arrangements

17.2. *Selling arrangements.*—There has been no change in the selling system of the Company since the last inquiry. T. T. Krishnamachari & Co., continues to be the sole selling agent. The agent maintains depot facilities at the main selling centres at Bombay, Calcutta, Delhi and Madras and holds adequate stocks of titanium dioxide. Up country sales are effected from the centre which is nearest to the regional depot and in some cases directly from the factory. Because of the complaints that arose in the past when there was serious shortage of indigenous pigment, sales of titanium dioxide are at the instructions of the producers made only to actual users. In view of the continued shortage of titanium dioxide, the selling agent is regularly submitting to the producer as well as to the Development Wing detailed particulars of sales. The selling agent receives a commission of 2½ per cent on sales value for maintaining an organisation for technical and after-sales service. It has employed for this purpose persons who have received specialised training abroad in the laboratory of the technical consultants. It claims that its technical staff conducts demonstration, supplies formulations and offers advice to the consumers on the use of this pigment. Though some advertisement expenses are jointly borne by the producer and the selling agent, the latter is stated to have undertaken propaganda for popularising the use of indigenous titanium dioxide. The producer feels that for the new product, (rutile grade of titanium dioxide to be produced from the middle of 1961) further intensive propaganda will be necessary for some time in view of the keen competition from imported products made by established producers in the world markets.

17.3. On the whole though there have been some complaints from consumers about the lack of adequate supplies of titanium dioxide of the requisite type or grade, they appear not so much from maldistribution of products of the indigenous unit, but due to restrictions on the quantum of imports which under present circumstances are inescapable.

18. Our conclusions and recommendations are summarised  
Summary of conclusions and below:—  
recommendations

18.1 The present capacity for indigenous production of titanium dioxide is 2,900 tonnes per annum. This is likely to reach 3,660 tonnes by the middle of 1961 and would further rise to 11,070 tonnes by the end of 1963, if Travancore Titanium Products Ltd., is able to complete its subsequent expansion scheme and Botanium Ltd., the prospective manufacturer erect the new plant.

[Paragraphs 6.2. and 6.5.]

18.2. The production of titanium dioxide was 1,701 tonnes in 1957, 1,743 tonnes in 1958, 1,872 tonnes in 1959 and 2,721 tonnes in 1960.

[Paragraph 6.6.]

18.3. The domestic demand for titanium dioxide has been estimated at 6,000 tonnes (4,500 tonnes for anatase and 1,500 tonnes for rutile) in 1961, 7,000 tonnes (5,000 tonnes for anatase and 2,000 tonnes for rutile) in 1962 and 8,500 tonnes (6,000 tonnes for anatase and 2,500 tonnes for rutile) in 1963.

[Paragraph 8.5]

18.4. Kerala State Government should take adequate steps to maintain the canal from Alwaye to Trivandrum free from congestion and in navigable condition at all times throughout the year.

[Paragraph 5.1.5.]

18.5. Travancore Minerals Ltd., should re-examine the matter and arrange to supply ilmenite to the Travancore Titanium Products Ltd., at a reduced rate not necessarily equated to export price.

[Paragraph 7.2.1.]

18.6. The industry should not rest content with the present quality of its products but must carry out research and make reasonable diversification of the grades produced so that when there is a substantial demand for any grade indigenous production might be started.

[Paragraph 9.3.]

18.7. Protection to the industry should be continued for a further period of three years ending with 31st December, 1964 at the existing rate of protective duty of 35 per cent *ad valorem* (preferential) and 45 per cent *ad valorem* (standard).

[Paragraph 16.]

19. We wish to express our thanks to the representatives of the producer, prospective producer, different consuming industries and the sole distributors for furnishing information on various aspects of the industry and for the assistance rendered to us.

Acknowledgements

K. R. P. AIYANGAR,

Chairman.

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S. K. MURANJAN,

Member.

J. N. DUTTA,

Member.

RAMA VARMA,

Secretary.

BOMBAY,

Dated 19th April, 1961. }

## APPENDIX I

(Vide Paragraph 3.1)

*List of persons or bodies to whom the Commission's questionnaires or letters were issued and from whom replies or memoranda were received.*

\*Indicates those who have replied or sent memoranda.

@ Indicates those who have stated that they are either not dealing in the product or are not interested in the inquiry.

### A. PRODUCERS :

- \*1. The Travancore Titanium Products Ltd., Kochuveli, Trivandrum, Kerala State.
- \*2. Nowrosjee Wadia & Sons Private Ltd., Neville House, Ballard Estate, Bombay-1—Prospective producer.

### B. IMPORTERS :

1. New Standard Chemicals Co., Pvt. Ltd., 281, [Samuel Street, Vadgadi, Bombay-3.
- \*2. Chika Private Ltd., Industrial Assurance Building, Churchgate, Bombay-1.
3. Bangur Brothers, 14, Netaji Subhas Road, Calcutta.
- @4. Imperial Chemical Industries (India) Ltd., I.C.I. House, 34, Chowringhee, Calcutta.
- \*5. Addisons Paints & Chemicals (Pvt.) Ltd., Sembiam, Madras-11.
- \*6. P. C. Chanda & Co. Ltd., P-2, Mission Row Extension, Calcutta-1.
7. Sepulchre Bros. (India) Ltd., Taj Building, 210, D. Naoroji Road, Bombay.
8. Noble Paint & Varnish Co. Ltd., Ferguson Road, Lower Parel, Bombay-13.
9. Macfarlane & Co. Ltd., 96, Garden Reach Road, Calcutta-1.
10. Hoyle's Paints Ltd., 2, Mangoe Lane, P.O. Box No. 2370, Calcutta-1.

### C. CONSUMERS :

- \*1. Blundell Eomite Paints Private Ltd., Rustom Building, Veer Nariman Road, Bombay-1.
- \*2. Goodlass Nerolac Paints Private Ltd., Forbes Building, Home Street, Bombay-1.
3. Lakaki Works Private Ltd., Lonavla, Poona District, Maharashtra State.
- \*4. Mercury Paints & Varnishes Private Ltd., 28, Apollo Street, Bombay-1.
5. Hindustan Paints, Colour & Varnishes Works, Katni, Jabalpur District.
- \*6. Addison Paints & Chemicals Private Ltd., Sembiam, Madras-11.
7. Titan Paints Varnish Co. Ltd., Podanur, Coimbatore District, South India.
- \*8. Nagrath Paints Ltd., 46, Fazel Ganj, Kanpur.
9. Alkali & Chemical Corporation of India Ltd., 34, Chowringhee, Calcutta-16.
- \*10. British Paints (India) Ltd., 32, Chowringhee Road, Calcutta-16.
11. Calcutta Paint, Colour & Varnish Works, Chunapukur Lane, Bow Bazar, Calcutta-12.

- \*12. Hoyle's Paints Ltd., 2, Mangoe Lane, Post Box No. 2370, Calcutta-1.
- \*13. Jenson & Nicholson (India) Ltd., 2, Fairlie Place, Calcutta-1.
- 14. Macfarlane & Co. Ltd., 25, Netaji Subhas Road, Calcutta-15.
- \*15. P. C. Chanda & Co. Ltd., P-2, Mission Row Extension, Calcutta.
- \*16. Shalimar Paint, Colour & Varnish Co. Pvt. Ltd., 6, Lyons Range, Calcutta-1.
- \*17. Coates of India Private Ltd., 3, Canal East Road, Ultadanga, Calcutta-14.
- \*18. Rainbow Ink & Varnish Mfg. Co. Ltd., 133-C, Vakola, Behind Church, Santa-Cruz (East), Bombay-55.
- \*19. Firestone Tyre & Rubber Company of India Private Ltd., Hay Bunder, Sewree, Bombay-1.
- \*20. Travancore Rubber Works, P.O. Box No. 15, Trivandrum-7.
- \*21. Dunlop Rubber Company (India) Ltd., Dunlop House, 57-B, Free School Street, Calcutta-16.
- \*22. Bata Shoe Company Ltd., Batanagar, 24-Parganas, Calcutta.
- \*23. National Rubber Manufacturers Ltd., Lesile House, 19, Chowringhee, Calcutta-13.
- \*24. India Linoleums Ltd., 14, Radha Bazar Lane, Calcutta-1.
- \*25. Bengal Enamel Works Ltd., 60/2, Dharamtala Street, Calcutta-13.
- 26. Sur Enamel and Stamping Works Pvt. Ltd., 24, Middle Road, Entally, Calcutta-14.
- 27. Indian Enamel Works Ltd., Sir P. M. Road, Bombay-1.
- \*28. Godrej Soaps Private Ltd., 316, Delisle Road, Jacob Circle, P.O. Bombay-11.
- \*29. National Rayon Corporation Ltd., Mohone, Kalyan.
- @30. Travancore Rayons Ltd., Rayonpuram P.O., Kerala State.
- 31. B. J. United Shoe Material Co., Pipal Mandi, Agra.
- \*32. Kores (India) Private Ltd., Plot No. 10., Off Haines Road, Worli, Bombay-18.
- 33. Anglo Dutch Paint, Colour & Varnish Works Private Ltd., 50, Najafgarh Road, Industrial Area, New Delhi.
- \*34. Calico Mills, Post Box No. 12, Ahmedabad.
- \*35. East India Paints & Chemical Works Private Ltd., 103-A, Surendranath Banerjee Road, Calcutta-14.
- \*36. International Rubber & General Industries Private Ltd., Post Box No. 843, Bombay-9.
- \*37. Indian Cable Co. Ltd., 9, Hare Street, Calcutta-1.
- \*38. Empire Chemical Co., 5, Kustia Road, Calcutta-39.
- \*39. J.B.A. Printing Inks Ltd., Advani Chambers, Sir P.M. Road, Bombay-1.
- 40. Kohinoor Paint, Colour & Varnish Works, 155, Katra Baryan, Delhi-6.
- \*41. Modi Spinning & Weaving Mills Co. Ltd., Modinagar, U.P.
- 42. Mysore Paper Mills Ltd., Bhadravati, Mysore State.
- 43. Noble Paint & Varnish Co. Ltd., Ferguson Road, Lower Parel, Bombay-13.
- \*44. National Insulated Cable Co. of India Ltd., Nicco House, Hare Street, Calcutta-1.
- 45. Sirsilk Ltd., P.O. Sirpur, Kaghaznagar, Hyderabad.
- \*46. Titaghar Paper Mills Co. Ltd., Chartered Bank Building, Calcutta-1.
- \*47. Tata Oil Mills Co. Ltd., Bombay House, Bruce Street, Bombay-1.
- 48. Western India Paint & Colour Co., 19, Venkatachala Mudali Street, Madras-3.
- 49. Hindustan Oil Mills, Babula Tank Cross Lane, Imamwada Road, Bombay-9.
- \*50. Hindustan Lever Ltd., Scindia House, Ballard Estate, Bombay-1.

**D. CONSUMERS' ASSOCIATIONS :**

- \*1. Indian Paint Association, India Exchange, India Exchange Place, Calcutta-1.
- @2. Association of Rubber Manufacturers' in India, 57-B, Free School Street, P.O. Box No. 391, Calcutta.
- \*3. Indian Rubber Industries Association, 12, Rampart Row, Bombay-1.
- 4. Vitreous Enamellers' Association, 60/2, Dharamtala Street, Calcutta-13.
- 5. Indian Soap & Toiletries Makers' Association, P-11, Mission Row Extension, Calcutta.
- \*6. Indian Paper Makers' Association, Royal Exchange, Calcutta.
- 7. Indian Paper Mills' Association, 23-B, Netaji Subhas Road, Calcutta.
- 8. Silk & Artsilk Mills' Association. Podar Chambers, Parsee Bazar Street, Bombay-1.
- 9. All India Plastic Manufacturers' Association, Jehangir Building, Mahatma Gandhi Road, Bombay-1.
- 10. Indian Paint & Allied Industries Association C/o Wakefield Paints Private Ltd., "Dhan-nur", 15/16, Sir P.M. Road, Bombay-1.
- 11. Millowners' Association, 10, Veer Nariman Road, Bombay-1.

**E. SOLE SELLING AGENTS FOR THE DOMESTIC PRODUCER :**

- \*T. T. Krishnamachari & Company, Vulcan Insurance Building, 202A, Veer Nariman Road, Bombay.

**F. SUPPLIER OF RAW MATERIALS :**

- \*Travancore Minerals Private Ltd., Beach Road, Quilon, Kerala State.

**G. GOVERNMENT DEPARTMENTS :**

- \*1. The Senior Industrial Adviser, Ministry of Commerce and Industry, Development Wing, Udyog Bhavan, Maulana Azad Road, New Delhi.
- \*2. The Collector of Customs, Bombay.
- \*3. The Collector of Customs, Calcutta.
- \*4. The Collector of Customs, Madras.
- \*5. The Collector of Customs, Cochin.
- \*6. The Secretary to the Government of Kerala, Department of Industries, Trivandrum.

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## APPENDIX II

(Vide Paragraph 3.3)

*List of Persons who attended Commission's public inquiry on 7th February, 1961.*

### A. PRODUCERS :

- |  |                   |  |
|--|-------------------|--|
| 1. Shri A. S. Menon                              | Repre-<br>senting | Travancore Titanium Products Limited,<br>Kochuveli, Trivandrum, Kerala State.                            |
| AND  |                   |  |
| 2. Shri R. V. Nair                               | Do.               | Government of Kerala, Trivandrum.  |
| 3. Dr. H. E. Eduljee,<br>(Prospective Producer). | Do.               | Travancore Titanium Products Limited,<br>Kochuveli, Trivandrum, Kerala State.                            |
|  | Do.               | Botanum Limited, C/o Nowrosjee Wadia &<br>Sons Private Ltd., Neville House, Ballard<br>Estate, Bombay-1. |

### B. SOLE SELLING AGENTS FOR THE DOMESTIC PRODUCERS :

- |                                     |       |   |
|-------------------------------------|-------|---|
| 4. Shri A. S. K. Nair               | } Do. | T. T. Krishnamachari & Co., Vulcan Insu-<br>rance Building, 202A, Veer Nariman<br>Road, Bombay-1. |
| 5. Shri P. R. Rajago-<br>palachari. |       |   |

### C. CONSUMERS :

- |                                    |     |   |
|------------------------------------|-----|---|
| 6. Mr. W. E. Norris                | Do. | Goodlass Nerolac Paints Private Ltd.,<br>Forbes Building, Home Street, Bombay-1.                    |
| 7. Mr. J. Vasica                   | Do. | International Rubber & General Industries<br>Private Ltd., Post Box No. 843, Bombay-9.              |
| 8. Shri M. A. Nilekeri             | Do. | Mercury Paints & Varnishes Private Ltd.,<br>Industrial Assurance Building, Churchgate,<br>Bombay-1. |
| 9. Dr. M. B. Ichaporia             | Do. | Tata Oil Mills Co. Ltd., Bombay House,<br>Bruce Street, Bombay-1.                                   |
| 10. Shri R. A. Tarapore-<br>walla. | Do. | Hindustan Lever Ltd., Scindia House,<br>Ballard Estate, Bombay-1.                                   |
| 11. Shri B. J. Advani              | Do. | J. B. A. Printing Inks Ltd., Advani Cham-<br>bers, Sir P. M. Road, Bombay-1.                        |
| 12. Shri N. S. Iyengar             | Do. | Cherni-Dye Trading Co., Kamer Building,<br>Cawasji Patel Street, Bombay-1.                          |

### D. CONSUMERS' ASSOCIATIONS :

- |                                     |       |  |
|-------------------------------------|-------|--|
| 13. Mr. S. L. G. Wright             | } Do. | Indian Paint Association, India Exchange,<br>Indian Exchange Place, Calcutta-1.  |
| 14. Shri D. Madhukar                |       |  |
| 15. Shri D. S. Kulkarni             | } Do. | Indian Rubber Industries Association, 12,<br>Rampart Row, Bombay-1.              |
| 16. K. V. Sampat                    |       |  |
| 17. Shri N. K. Patel                |       |  |
| 18. Shri Radhakrishna<br>R. Ruia.   | } Do. | Millowners' Association, Elphinstone Build-<br>ing, Veer Nariman Road, Bombay-1. |
| 19. Shri G. R. Thatte               |       |  |
| 20. Shri R. L. N. Vijaya-<br>nagar. |       |  |

- |                               |              |   |
|-------------------------------|--------------|---|
| 21. Shri A. H. Srikanta Iyer. | Representing | All India Plastic Manufacturer's Association, Jahangir Building, Mahatma Gandhi Road, Bombay-1. |
|-------------------------------|--------------|---|

**E. GOVERNMENT DEPARTMENTS :**

- |                           |     |  |
|---------------------------|-----|--|
| 22. Shri K. N. R. Sharma  | Do. | Development Wing, Ministry of Commerce & Industry, Udyog Bhavan, Maulana Azad Road, New Delhi. |
| 23. Shri N. K. Ramaswamy. | Do. | Indian Standards Institution, Manak Bhavan 9, Mathura Road, New Delhi.                         |
| 24. Shri Pushkarna        | Do. | Collector of Customs, New Custom House, Bombay-1.  |



सत्यमेव जयते

## APPENDIX III

(Vide Paragraph 10.2)

*Statement showing the country-wise imports of titanium dioxide during the years 1957, 1958, 1959 and 1960*

Sl. No.	Country of origin	Unit	1957		1958		1959		1960	
			Quantity	Value in Rs.	Quantity	Value in Rs.	Quantity	Value in Rs.	Quantity	Value in Rs.
A. Anatase										
1.	United Kingdom	Cwt.	854	95,764	661	73,937	3,064	3,68,410	2,651	3,08,257
2.	W. Germany	"	661	83,794	1,002	2,29,338	3,339	3,82,477	5,163	5,79,589
3.	Netherlands	"	..	..	2	605	42	4,780	75	16,525
4.	Belgium	"	..	..	47	4,798	157	16,020	..	..
5.	Czechoslovakia	"	..	..	156	17,984	60	6,179	184	18,741
6.	Japan	"	3,617	4,49,745	5,915	6,47,437	6,975	7,19,119	4,874	5,14,181
7.	U.S.A.	"	120	19,864	216	34,519	7	1,271	55	9,202
8.	France	"	..	..	..	..	5	534	17	2,247
9.	China	"	..	..	..	..	..	..	98	1,04,424
Total			5,252 (266.81 M.)	6,49,167	8,850 (449.60 M.)	10,08,618	13,649 (693.40 M.)	14,98,790	13,117 (666.37 M.)	15,53,166
			Tonnes)		Tonnes)		Tonnes)		Tonnes)	

B. *Rutile*

1 T.C.Bom./61.

1. United Kingdom	.	.	Cwt.	2,972	4,20,702	3,658	5,17,614	8,338	10,70,127	9,626	12,38,374
2. W. Germany	.	.	"	664	1,01,323	834	1,13,819	1,274	1,65,982	2,495	3,27,044
3. Netherlands	.	.	"	1	182	21	7,093	60	18,734	25	7,894
4. Japan	.	.	"	763	1,11,862	2,188	2,57,198	5,551	6,27,110	6,936	7,85,482
5. U.S.A.	.	.	"	1,208	1,92,183	404	68,059	236	42,663	459	84,243
6. E. Germany	.	.	"	.	.	.	.	15	1,967	.	.
7. Belgium	.	.	"	.	.	.	.	.	.	18	2,369
8. France	.	.	"	.	.	.	.	.	.	32	4,738
9. Czechoslovakia	.	.	"	.	.	.	.	.	.	59	6,066

TOTAL

5,608	8,26,252	7,083	9,63,783	15,474	19,26,563	19,650	24,56,207
(284.90		(359.93		(786.11		(968.54	
M.		M.		M.		M.	
Tonnes)		Tonnes)		Tonnes)		Tonnes)	

# APPENDIX IV

(Vide Paragraph 14)

*Statement showing c.i.f. prices, customs duty, clearing charges and landed cost of latest imports of titanium dioxide into India*

Sl. No.	Source of information	Origin of import	Date of import	Type and specification	C.I.F. price	(Rupees per Metric tonne)		
						Customs duty	Clearing charges	Landed cost
1	2	3	4	5	6	7	8	9
1.	Collector of Customs, Madras	West Germany	18-6-60	Titanium dioxide Anatase.	2,195.75	45%	5%	3,233.24
2.	Collector of Customs, Cochin	Do.	6-7-60	Rutile	2,206.67	45%	5%	3,252.32
		West Germany	12-7-60	Anatase-Bayer Brand	2,230.86	45%	18.54	3,253.29
		Do.	31-8-60	Do.	2,231.00	45%	24.00	3,258.95
3.	Collector of Customs, Calcutta.	United Kingdom	Nov. 1960	Rutile, R.M. 20	2,493.33	35%	20.00	3,411.24
		Countries other than U.K.	Do.	Do.	2,493.33	45%	20.00	3,662.44
		United Kingdom	Do.	Do.	2,506.67	35%	20.00	3,479.38
		Countries other than U.K.	Do.	Do.	2,506.67	45%	20.00	3,681.93
		United Kingdom	Do.	Anatase	2,320.00	35%	20.00	3,175.49
		Countries other than U.K.	Do.	Do.	2,320.00	45%	20.00	3,409.23

Collector of Customs, Bombay . . . . .	United Kingdom	Do.	Do.	2,333.00	35%	20.00	3,193.62
	Countries other than U.K. . . . .	Do.	Do.	2,333.00	45%	20.00	3,428.70
	United Kingdom . . . . .	..	Rutile	2,507.00	35%	5%	3,509.80
	Do. . . . .	..	Do.	2,500.00	35%	Do.	3,500.00
	Do. . . . .	..	Do.	2,467.00	35%	Do.	3,453.80
	Japan . . . . .	..	Do.	2,200.00	45%	Do.	3,300.00
	Do. . . . .	..	Do.	2,080.00	45%	Do.	3,120.00
	Do. . . . .	..	Do.	2,090.00	45%	Do.	3,135.00
	West Germany . . . . .	..	Do.	2,552.00	45%	Do.	3,828.00
	Belgium . . . . .	..	Do.	2,630.00	45%	Do.	3,945.00
	U.S.A. . . . .	..	Do.	2,506.00	45%	Do.	3,759.00
	United Kingdom . . . . .	;;	Anatase	2,373.00	35%	Do.	3,322.20
	Do. . . . .	..	Do.	2,320.00	Do.	Do.	3,248.00
	Japan . . . . .	..	Do.	2,040.00	45%	Do.	3,060.00
	Do. . . . .	..	Do.	2,053.00	Do.	Do.	3,099.00
	Do. . . . .	..	Do.	2,267.00	Do.	Do.	3,400.50

1	2	3	4	5	6	7	8	9
4.	Collector of Customs, Bombay— <i>contd.</i>	West Germany	..		.00	45%	5%	3,346.50
		Do.	..		00	Do.	Do.	3,679.20
		Do.	..		00	Do.	Do.	3,619.50
5	Addisons Paints & Chemicals Ltd., Madras	Japan	8-4-60	Rutile g	00	Do.	..	3,250.00
6	Chika Private Ltd., Bombay	West Germany	..	Ar	00	Do.	20.00	3,270.00
		Do.	..	Ru	37	Do.	Do.	3,370.00
7	P. C. Chanda & Co., Calcutta	Japan	26-3-59	□	55	Do.	32.10	3,024.10

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