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FRESH WATER FROM SEA



Sri R. VENKATARAMAN
(Minister for Industries, Madras)

MADRAS faces acute shortage of water for edible and industrial purposes. Further development of industries around the City is threatened by lack of adequate supply of water. The State Government has already promised supply of millions of gallons of water for the defence and other industries and it is now at its wits' end to make good the promise. Costly schemes like bringing water from the Godavari and the Krishna or diverting some water from the Cauvery are seriously examined as there appears to be no other alternative. Acquisition of wet lands around the Red Hills and other lakes are under way for the augmentation of the City water supply.

From my old room in the Secretariat in Fort St. George, I used to look out of the window and gaze at the vast expanse of the Bay of Bengal with a wish that it may turn into fresh water. I started collecting information about the sea water conversion schemes, the processes, their economics and the rest. The study of these date, together with the visit to some of these sea water conversion plants in the United States, has given me encouragement to hope for the realisation of the dream.

Sea water conversion is not a novel idea. In fact, it is as old as the world. It is an artificial reproduction of the natural phenomena of rain. Till the Second World War no practical method of converting sea water into fresh had been discovered. But, after the war, there has been a rapid advance in the technology and a number

of units are now functioning in all parts of the globe, including Arabia, Africa, Australia and America. Sea water conversion is no longer a mere possibility but, an actual reality.

The Economic and Social Affairs Division of the United Nations is currently

examining the problem of de-salination of mineral water for edible and industrial purposes and it has sent out experts to all parts of the world to make a preliminary survey. Mr. Weymark, the U. N. expert, visited Madras some time back and discussed the problem with me. He has submitted a report to the U. N. on the economic and technical aspects and I understood from Rev. F. Revrey, Director of the Water Resources, etc., in the U. N. that it may take a few months for the report to be published. We may look forward to gathering further material facts and information from this source.

VISIT TO U. S. UNIT

The biggest unit producing one million gallons a day has been set up by the United States Government at Point Loma, a few miles south of San Diego in California. By the courtesy of the Department of the Interior of the U. S. Government, I was able to visit as well as study the main features of this plant. Mr. Mulford, the engineer-in-charge, explained that this plant is not operated as a commercial unit, but as a research and demonstration unit and that a considerable volume of the expenditure incurred in the plant related to research, trials, experiments and so on. Besides, the plant was shut down from time to time for experimental purposes. A high-level engineer is in charge for research purposes and may not be required for a commercial unit. These factors should be taken into account in evaluating the capital and operating cost of the plant.

MULTI-STAGE FLASH PROCESS

Sea water is taken through an intake line to the intake pit and pumped up by an electric motor. The sea water is then progressively heated and then introduced into a large chamber, where a pressure just below the boiling point of the hot brine is maintained. When the brine enters this chamber, the reduced pressure causes part of the liquid to immediately boil or flash-up

into steam. The remaining brine is passed through a series of similar chambers (multi-stages) at successively higher vacuum where the flash process is repeated at progressively lower temperatures. This process is known as the multi-stage flash process and the plant at Point Loma utilises 36 flashing stages. The flashed vapour is then condensed to produce fresh water. This in brief is the description of the process. The plant was erected by the Westinghouse Electric Corporation and is run by a contracting firm. The capital cost of this experimental station of one million gallons is \$ 1,640,000 or about Rs. 80 lakhs.

I am informed that the cost of operation will depend on the fuel used and the cost thereof. If furnace oil at international prices could be used for heating, the cost is bound to be small. If the plant is designed to produce 15 million gallons a day, the cost according to the engineer-in-charge of the plant will be about 60 cents (American) per 1,000 gallons. On a smaller plant, it is estimated, the cost will be about one dollar per 1,000 gallons.

POWER GENERATION

If sea water conversion is combined with power generation, the cost will go down much further. It is said that in a million-gallon plant 10,000 kw. of power may be generated by using the steam. A ten million-gallon unit with 100,000 kw. of power should be a worthwhile project for Madras.

I also visited the 100,000 gallons plant put up by Aqua-Chem Inc. at Oxnard, near Los Angeles, California. This company claims to have put up plants practically in every part of the world from Kuwait to the Pacific islands. They have also designed small units producing 15 to 50 gallons a day by using electric power. In a supermarket in Oxnard, I saw a unit of the size of a refrigerator producing fresh water from

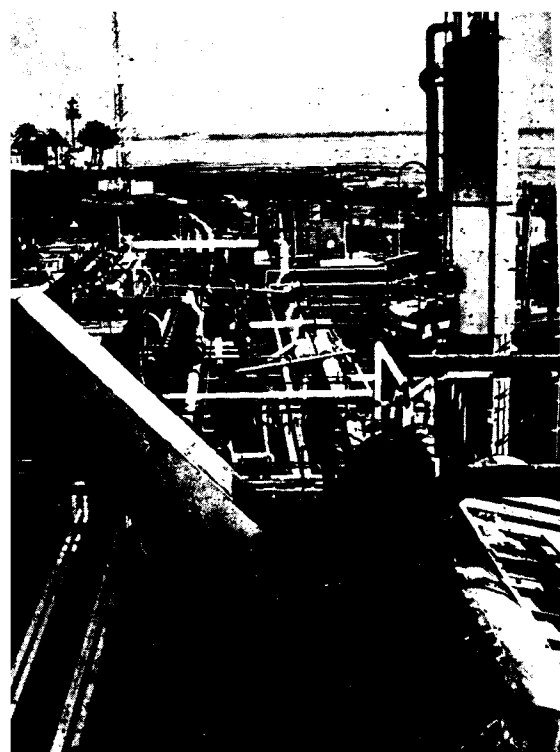
local non-edible mineral water. The cost of the Unit is said to be Rs. 1,500—Rs. 2,000. According to Mr. Preuit, the Vice-President of Aqua-Chem, one of the most economical methods of producing water is in connection with power plants. In that case, both power and water can be produced at a cost cheaper than each can be produced separately. Being a Saturday, there was only a caretaker in the plant and I could not get more details about the plant.

Madras City has an inadequate supply of water even for drinking purposes. If we do not plan ahead to meet growing needs of the people and the industries, the City

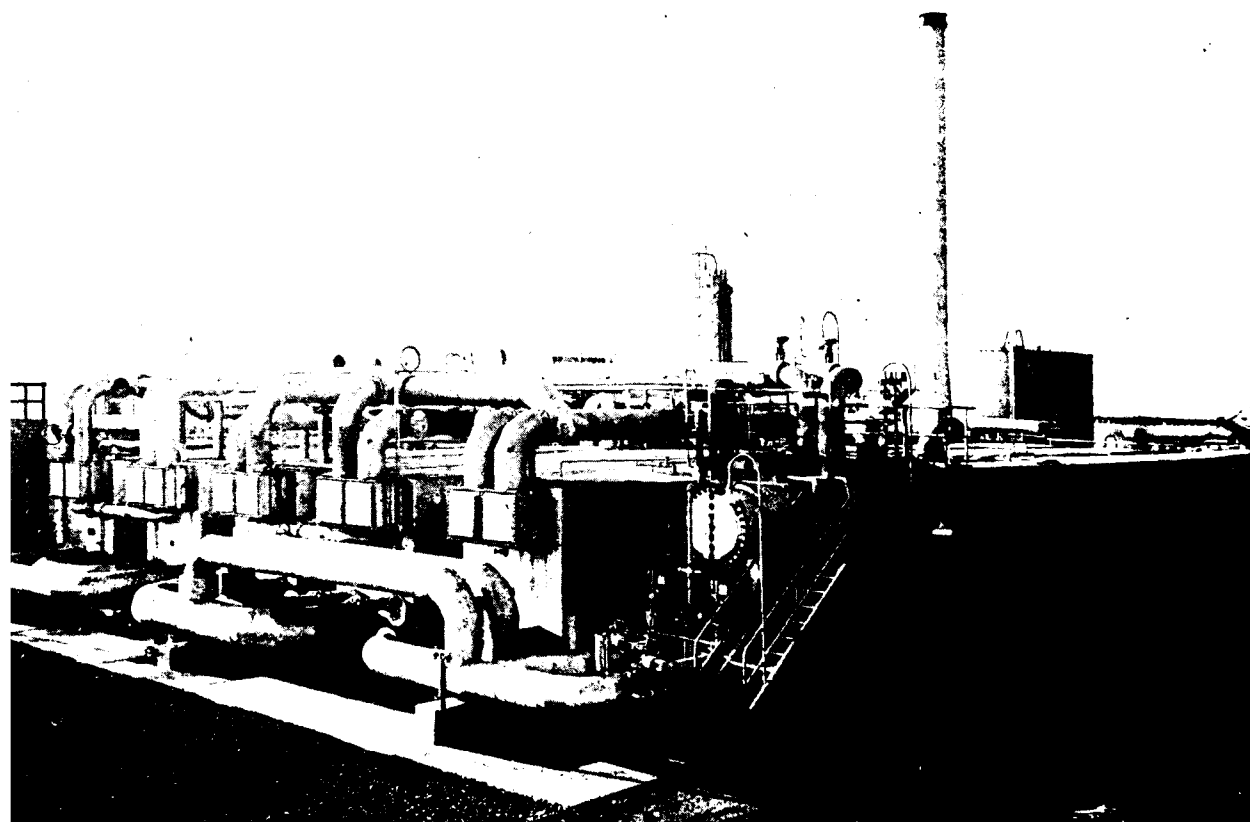
will soon decline. It is estimated that it would cost Rs. 75 crores to get supplies of water from the Krishna and about Rs. 35 crores to bring water from Cauvery. Assuming that the running expenses will be recovered from the sale of water and power, the capital cost of about of Rs. 7 crores for 10 million gallons of water makes the proposition very attractive. If it can be combined with power generation of 100,000 kw., the outlook is positively inviting. But accurate estimates of cost of the plant and operation can be had only from the engineering contractors in the line. At this state, it appears that the scheme is worth an earnest investigation.



A close-up view of the Flash Chambers of the Multi-stage Flash Process at Point Loma, California.



Left :
The Point Loma plant with a
canopy of pipes and tubes.



Below :
Multi-stage Flash Chambers
Process Plant at Point Loma.

SMALL-SCALE INDUSTRIES

BIGGER ROLE FOR SMALL SCALE SECTOR IN PAINT AND ALLIED INDUSTRIES

By the end of the Fourth Five Year Plan the annual output of paints products will have to be stepped upto 3,80,000 tons from the present rate of 80,000 tons, according to the estimate of the Adhoc Committee for Paint and Allied Industries which has submitted its report to the Union Government. In this gigantic task, the Committee has assigned a dominant role to the small-scale paint and varnish industry.



The Committee was constituted in March 1962 to examine the present position of the small-scale paint and varnish industry in the country and to suggest concrete steps for the development of the industry during the Third Five-Year-Plan. In its report it has pointed out that while small-scale industries in many countries play a very important part in the production of paints, in India about 10 large-scale firms practically account for 50% of the total production. The Committee is of the view that the paints industry is an ideal one for the development in the small-scale sector.

FOREIGN COLLABORATION AND TECHNICAL TRAINING

A review of the production techniques and other matters has revealed that an investment of Rs. 3-5 lakhs in machinery

is adequate to manufacture almost all the different types of paint products provided technical know-how is available. To help the small-scale units to get this technical know-how the Committee has recommended that proposals for foreign collaboration from small-scale paint units should be sympathetically considered, and that the services of technically-competent foreign experts might be obtained by the Central Small Industries Organisation, which should also appoint a panel of Indian consultants, making a beginning through the appointment of two consultants, one in Bombay and another in Calcutta. It has also recommended that the possibilities of training the personnel of the Central Small Industries Organisation and of the small-scale units at the factories of reputed firms in India and abroad might be explored, and

that well-equipped laboratories for work on development, evaluation, and testing of new products be set up and attached to the Small Industries Services Institutes in Bombay, Calcutta, Madras and Delhi. It has also suggested that the Central Small Industries Organisation might set up a small cell to disseminate technical information to small-scale units.

GOVERNMENT PURCHASES FROM SMALL-SCALE SECTOR

In view of the preponderance of Government-oriented purchases in India, the Committee has examined the present position with regard to purchases both by the Central and State Governments, inspection procedure, registration with various organisations, earnest money and security deposits etc. It is of the view that Government-oriented purchases should be restricted to small-scale sector particularly with regard to products which are being manufactured by the sector. It has recommended that eight categories of paints, viz. dry distemper, redlead, red oxide, aluminium paints, bitumen paints, wagon blacks, graphite paints and all paste paints should be reserved for purchase

entirely from small-scale units. For other categories of paints there should be progressive reservation so that by the end of the Third Five Year Plan about 50 to 75 percent of the Government-oriented purchases are made from the small-scale sector. The possibility of some of the major public projects setting up paint units to meet their requirements might be explored. To ensure quality small-scale units should be encouraged to have adequate laboratory facilities. The required equipment for this should be obtained by the National Small Industries Organisation in advance and supplied to small units on hire-purchase basis.

The Committee has recommended steps to eliminate the procedural difficulties which the small-scale units have now to face in applying for Government tenders. It has proposed that special allocation should be made by the raw materials manufacturers to small-scale units which receive Government orders.

IMPORT FACILITIES

The Committee has emphasised the need for equipping the small-scale units with up-to-date machinery and recommended

that facilities for importing such machinery, as are not manufactured in the country, might be provided. A uniform policy regarding the licensing of imported raw materials for the small-scale paint and varnish, synthetic resin and organic pigment industry be evolved in order to have a proper development of the industry and proper arrangements might be worked out for the supply of indigenous raw materials such as red-lead, redoxide, zinc chrome, organic pigments and synthetic resins which were in short supply.

CAPACITY TO BE RESERVED FOR SMALL-SCALE SECTOR

Referring to the decision of the Government that a capacity of 1,90,000 tons would have to be established by 1966 and about 1,10,000 tons of capacity would have to be created during the next two to three years, and to the decision of the licensing committee to develop an additional capacity of 50,000 tons in the large scale

sector, the Committee has recommended that the remaining capacity of 50,000 to 60,000 tons might be entirely reserved for the small-scale sector. Further licensing of production of dry distemper, redlead, red oxide, aluminium paints bitumen paints, wagon blacks, graphite and all paste paints should, the Committee feels, be reserved entirely for the small-scale sector.

FUTURE PATTERN

Recognising the technically-complex and wide nature of the paints industry the Committee has urged the need for centralised control of the industry so that it may develop in a balanced way ensuring maximum utilisation of the available resources.

The ultimate pattern of development of paint products in the small-scale sector, according to the Committee is towards the manufacture of tailor-made industrial finishes for specific applications, which would be increasingly required as engineering industries got developed.

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PORTABLE FOUNDRY SOLVES CASTING PROBLEM

BY C. DOUGLAS WOODWARD

For more than 5,000 years craftsmen have been making castings of almost every known metal and alloy. To melt these metals every conceivable type of furnace has been used, but whatever the type it has had to depend on some external source of fuel.

A difficulty arises when relatively small castings are required, either singly or in small quantities for such jobs as prototypes, on-the-spot repairs or personnel training. Their production always depends on the availability of a melting unit, and as these are never portable it means that the work has to be taken to a foundry, often at great inconvenience.

Now a Birmingham, (England,) firm has come up with its Kemwell portable foundry to overcome this problem.

The secret of the breakthrough is the foundry's self-heating melting pot which, says the firm represents the greatest advance in portable chemical heat since the invention of the friction match. Its own walls ignite to become a furnace, fuel, melting pot and pouring ladle all in one.

The Kemwell portable foundry is a complete foundry in miniature which contains everything required to make castings, except sand and metal. It comes as a box with lift-up lid (to which various

tools are clamped) and drop-down front (which provides the working surface). The whole operation of moulding, melting and casting can be performed in an area of less than one square yard.

The kit includes a moulding trowel, tongs, combined pouring handle and strickle, moulding box, galvanised tray, bellows, crucibles and all the other equipment required. Safety goggles and asbestos gloves are there, too.

The special crucible is made from material which, when ignited, produces intense, sustained heat. During and after burning, the crucible remains rigid. It is ignited by means of a specially supplied "sparkler". Each crucible comes wrapped in a sheath of asbestos paper to insulate it from the furnace case during and after burning. Into this cage is fitted a handle, and thus the assembly as a whole forms furnace, fuel, crucible and pouring ladle in one. The crucible itself is expandable. The crucibles come in three sizes and can melt up to 10 pounds (4.5 kilograms) of metal in less than 10 minutes.

The Kemwell foundry will find numerous applications. In industry it will be suitable for casting prototypes, patterns, tools, jigs and replacement parts. In education it will enable experiments to be

carried out on the laboratory bench and should prove of great value in introducing students to the art of foundry practice. In the hobbies field it will be welcomed by the model-maker and do-it yourself enthusiast as a valued addition to their workshop.

With the moulding box and tools supplied, the portable foundry will, it is claimed provide a very high standard of casting. A supply of chemicals to purify molten metal before pouring is included.

Care has been taken to make the foundry safe to handle at every stage of operation. Each kit is accompanied by a fully-illustrated step-by-step instruction manual.

The makers say they intend to appoint distributors in the United States of America and elsewhere. Meanwhile they will supply overseas buyers direct from Britain.

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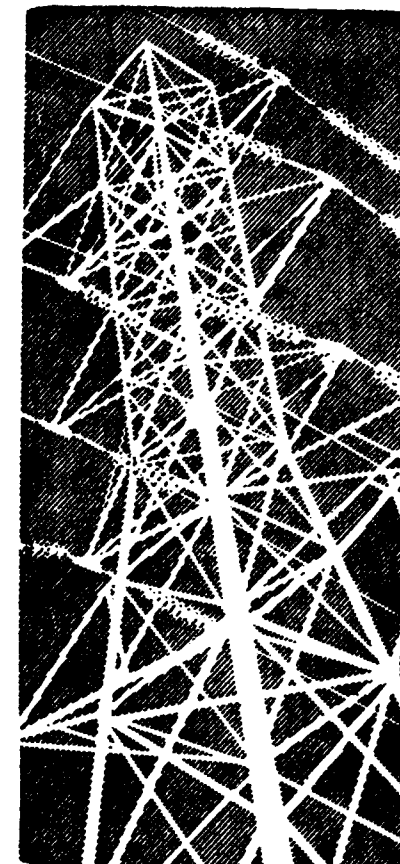
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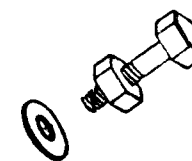
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MANUFACTURE OF BUTTER COLOUR FROM ANNATTO SEEDS

INTRODUCTION

The annatto colour is commonly used for colouring butter and cheese. It is obtained from the fruits of annatto tree—*Bixa Orellana*, which is natural habitat of tropical countries and is cultivated in India, West Indies and Brazil. The seeds are covered with a yellow-red resinous material which is removed by extraction. The extraction for use in butter is usually carried out with a refined vegetable oil such as groundnut oil, sesame oil, linseed oil, cottonseed oil, rapeseed oil or castor oil. This solution can be added directly to the cream in the churn or worked up in butter.

SCOPE OF BUTTER COLOUR

Annatto plant grows in southern parts of India—Madras, Mysore, Andhra Pradesh and Bombay. However, the seeds from Mysore State were found to be of better quality as regards the source of colouring material. If it is desired to produce the butter colour to meet the demands of home market and also for export purposes, it may be possible to cultivate the annatto plants in different parts of India by proper selection of high breed seeds. According to the information available the annual requirement of butter colour in India is approximately 4000 gallons. There is every likelihood that this figure will considerably increase in case the Government of India establishes more milk product factories for butter and cheese under the Five Year Plan projects. The butter colour produced in India at present is not able to meet the demands of butter manufacturers

and its import from foreign countries is likely to be reduced due to the difficult foreign exchange position. It is, therefore, necessary that steps should be taken to manufacture butter colour on a large scale.

MANUFACTURE OF BUTTER COLOUR

Systematic work has been carried out at the National Dairy Research Institute, Karnal, to evolve a cheap method for manufacturing butter colour from annatto seeds. Since the seeds are coated with the colouring material, it has been found advantageous to autoclave the seeds for about 30 minutes at 10 lbs pressure in order to facilitate the subsequent extraction with a vegetable oil. The cooked are then extracted with five times its weight of castor oil in kettles at 120°C for two hours under continuous stirring. The butter colour obtained is filtered through muslin cloth and packed in tins. Among

the different oils and fats studied, it was found that castor oil gave maximum extraction. The intensity of the colour extracted with castor oil was two to three times that obtained with other oils. This has an additional advantage that less colour extract will have to be added to butter to impart it a desired colour intensity.

The annatto colour is very susceptible to oxidation when exposed to air and light. It is, therefore, essential that the butter should be stored in closed tin or steel containers.

EQUIPMENT REQUIRED FOR THE MANUFACTURE

It will be noted that the process for preparing butter colour from annatto seeds is very simple and is essentially batch type. The following equipment costing

approximately Rs. 20,000 to Rs. 25,000 is suggested for the manufacture of butter colour:

Autoclave of 25 kg. capacity, steam jacketed stainless steel kettle with automatic stirring arrangement of 150 kg. capacity filter press, steam generator, pump, stainless steel tanks, automatic balance and can sealing equipment. With this equipment it will be possible to manufacture about 1 ton of butter colour per week and the approximate cost of production will be Rs. 4,6000, including the cost of containers, packing, labour and depreciation on the machinery. With the annual production of 50 tons of butter colour and taking into consideration the present market price of butter colour at Rs. 7 per kilogram, it may be possible to make a net profit of at least Rs. 1,00,000 per year.

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PROJECT PROPOSAL FOR FLOOR QUARRY TILE PLANT

INTRODUCTION

Quarry tiles made from natural clays or shales and burnt to dense surface are popular in U.K., U.S.A., and Europe for flooring residential, public and industrial buildings where heavy wear is anticipated and where floor comes into contact with acid or alkalies as in chemical industries, laboratories, tanneries, etc. Floor-tiles are cheaper and provide a permanent floor finish than other conventional building materials and hence can find application in flooring of low cost houses. In India floor tiles are manufactured in small quantities in South India only. The tiles made are known to be of inferior quality as compared to those made abroad. Therefore, it is considered essential that quarry tiles are manufactured in the country under scientific controlled conditions and made popular for flooring in the public as well as private constructions particularly the low cost houses, thereby saving the much needed cement for priority purposes.

The quarry tile plant preferably be situated at a site where suitable clay is available. The clay used for quarry tile manufacture should have long vitrification range and vitrify at about 1,100°C. The chief considerations are colour when burnt, freedom from soluble salts and absence of the distortion and checking in burning. Most of the brick clays of illitic composition would be suitable and such clays are found all over the Indo-Gangetic plain. Delhi clays were tested and found suitable for manufacture of quarry tiles and hence a plant for quarry tiles can be installed in the vicinity of Delhi.

Method of Manufacture

The earth found suitable for making tiles is ground to a fine powder and sieved. The ground clay is mixed with requisite quantity of water (4 to 7% by weight) and granulated. The clay granules are then compressed under

heavy pressures using a 150-ton press to form tiles. After pressing the tiles are left for drying and dried tiles are fired in down draught kilns. Saggars are used for firing tiles of different colours and mosaic types. The fired tiles are tested, sorted and packed.

Scheme for the production of floor quarry tiles from illitic clays of Indo-Gangetic plain.

An outline of a scheme for the production of 9 million quarry tiles of 6" x 6" x 1/2" per year from illitic clays of Indo-Gangetic plain is given in appendices. The capital investment required is about Rs. 2,26,500 involving a foreign exchange of Rs. 35,000 only for importing the friction screw press. Mechanization is avoided wherever labour could be employed advantageously.

The land requirement is about 10 acres which would be sufficient to supply earth for 20 years if excavated to a depth of 5 ft. including

the site required for the factory buildings. The cost of land is taken as Rs. 2,000 per acre for calculation. The quantity of clay suitable for tiles is assumed to be 70% of the earth excavated.

3,600 tons of earth i.e., about one lakhs c. ft. will be required per year. Labour will be engaged for winning the clay on contract basis at Rs. 25 per 100 cft. of earth excavated including the transport charges for carrying the clay to the pan mills for grinding.

Flow sheet of the plant is given at Appendix 'A'. Additional machinery—a high speed roller mill may be required for grinding in the case of shales which are hard and clays containing lot of grit. The tile moulding section has to work in two shifts per day because of the limited capacity of the press, whereas the other departments work in one shift except the kiln section which works continuously i.e. three shifts per day. The cost of production of thousand tiles (Appendix 'D') works out to Rs. 48.76 or Rs. 19.50 per 100 s. ft. This figure is very competitive as compared to the market price of the conventional

flooring tiles made of cement mosaic, stone, etc. which range from Rs. 55 to 120 per 100 s. ft.

It is advisable to start with the production of plain floor tiles and then switch on to the tiles of various colours and mosaic type by installing hand-operated presses in addition to friction screw press for plain tiles. Once the floor tiles are well received in the market and become popular with the users, the production can be stepped up by installing excavators for winning the clay, additional friction screw presses and down draught kilns. Alternatively, a separate plant can be installed for the production of 10 to 12 million tiles per year using a little more mechanization for handling the tiles such as belt conveyors and continuous chamber down draught kilns for burning, thereby reducing the cost of production further. The quarry tile production unit can be annexture to a mechanized brick plant without much additional capital investment by installing presses for moulding and down draught kilns for burning. In such a case considerable saving on overhead and labour charges can be attained and bring down the cost of production of quarry tiles.



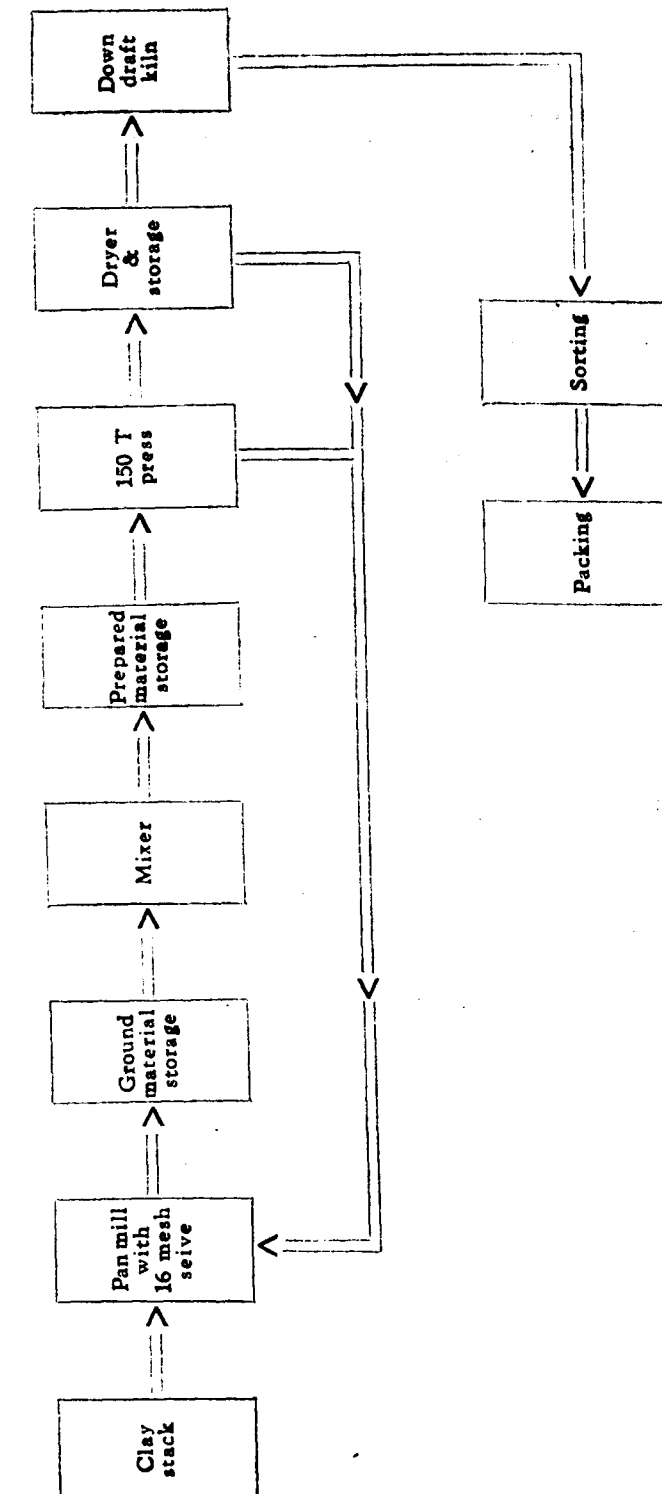
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APPENDIX A

FLOW SHEET OF FLOOR QUARRY TILE PLANT



APPENDIX 'B'

Capital investment for plant producing 3 million quarry tiles (6' x 6' x 1") per year from illitic clays of Indo-Gangetic plain

	Rs.	Rs.
1. Machinery ...	...	78,000
2. Kilns and kiln furniture ...	...	53,000
3. Buildings & Civil Works ...	...	29,500
4. Miscellaneous items ...	...	17,000
5. Land—10 acres ...	...	20,000
6. Working capital for 90 days ...	...	29,000
Total ...	...	2,28,500

APPENDIX 'C'

Machinery and plant requirement

Preparation of the material

(a) Pan mill with 16 mesh seive (3 ton/hour capacity) ...	...	18,000
(b) Mixer ...	...	7,500
Erection cost of (a) and (b) ...	...	500

Moulding

(a) 150 ton friction press Yugoslavia make—capacity 1,000 tiles/hours F. O. R. Bombay ...	...	40,000
Transport and erection cost @ 5% ...	...	2,000
(b) 100 pieces of racks @ Rs. 60 each ...	...	6,000
(c) Platform trucks—4 Nos. ...	...	4,000

Firing

(a) Down draught kilns 2 Nos. 20 ft. dia and 6 ft. high @ Rs. 20,000 each ...	...	40,000
(b) Chimney 50 ft. ...	...	8,000
(c) Kiln furniture ...	...	5,000

Building & Civil Works

(a) Clay storage shed 1,000 sq. ft. @ Rs. 6 per sq. ft. ...	...	6,000
(b) Factory shed 2,500 sq. ft. @ Rs. 7 per sq. ft. ...	...	17,500
(c) Cement silos for storage of prepared materials ...	...	1,000
(d) Office 500 sq. ft. @ Rs. 10 per sq. ft. ...	...	5,000
		29,500

Miscellaneous

	Rs.	Rs.
(a) Water overhead tank with pump etc. ...	...	5,000
(b) 50 kva sub-station ...	...	5,000
(c) Laboratory ...	...	2,000
(d) Office furniture, typewriter etc. ...	...	2,500
(e) Roads and drainage ...	...	2,500
		17,000

APPENDIX 'D'

Estimated cost of production

Labour

(a) Skilled workers 5 @ Rs. 5 per day $5 \times 5 \times 300$...	...	7,500
(b) Semi skilled workers 10 @ Rs. 3.5 per day $10 \times 3.5 \times 300$...	...	10,500
(c) Unskilled 15 @ Rs. 2.20 per day $15 \times 2.20 \times 300$...	...	9,900
		27,900

Raw materials

(a) Clay ...	Rs. 20,000	1,000
	20	

Cost of digging 1 lakh cu. ft. (3,600 tons) of earth per year
@ Rs. 25 per 1,000 cu. ft. ...

(b) Coal—2 tons of coal per 10,000 tiles @ Rs. 60 per ton $2 \times 300 \times 60$...	...	36,000
(c) Power—300 kw per day @ 10 nP. per unit $300 \times 300 \times 0.1$...	...	9,000
(d) Light—15 kw per day @ 20 nP. $15 \times 365 \times 0.2$...	...	1,095
(e) Water—2,000 gal. per day @ 75 nP. per 1,000 gal. $2 \times 0.75 \times 300$...	...	1,450

Supervisory staff

(a) Manager one @ Rs. 500 p. m. ...	...	6,000
(b) Shift incharge one @ Rs. 300 p. m. ...	...	3,600
(c) Administrative clerk one @ Rs. 150 p. m. ...	...	1,800
(d) Supervisor one @ Rs. 150 p. m. ...	...	1,800
(e) Mechanic-cum-electrician one @ Rs. 150 p. m. ...	...	1,800
(f) Watch and ward two @ Rs. 90 p. m. ...	...	2,160

17,160

Depreciation, Maintenance, Interest etc.

	Rs.	Rs.
(a) Depreciation on buildings and civil works @ 6½% on Rs. 29,800 ...	1,845	
(b) Depreciation on machinery @ 10% on Rs. 78,000 ...	7,800	
(c) Depreciation on kilns and kiln furniture @ 8½% on Rs. 53,000 ...	4,420	
(d) Depreciation on Misc. items @ 5% on 17,000...	850	
(e) Maintenance on buildings etc. @ 2½% on 29,500 ...	665	
(f) Maintenance on Misc. @ 5% on Rs. 17,000 ...	850	
(g) Maintenance on kilns @ 5% on Rs. 53,000 ...	2,650	
(h) Maintenance on machinery @ 5% on Rs. 67,500 ...	3,900	
(i) Interest on capital investment @ 6% on Rs. 2,26,500 ...	13,590	
		<u>36,570</u>

Abstract

1. Labour ...	...	27,900	
2. Raw materials, power etc. ...	...	50,045	
3. Supervisory staff ...	...	17,160	
4. Depreciation etc. ...	...	36,570	
			<u>1,31,675</u>

Taking 90% first class tiles out of 3 million tiles produced i.e.
2.7 million tiles or 6.75 lakh sq. ft. per year.

Cost of production per 1,000 tiles = $\frac{1,31,675 \times 1,000}{27,00,000}$ = Rs. 48.76

or Cost of production per 100 sq. ft. = Rs. 19.50

Manufacture of Ferrous Sulphate B. P.

INTRODUCTION

Ferrous sulphate B.P. is the most commonly used chemical in various pharmaceutical preparations. It is used in the treatment of all forms of microcytic anaemia such as achlorhydric anaemia, nutritional anaemia in infants, anaemia due to excessive haemorrhage etc. In the treatment of microcytic anaemia, ferrous sulphate is used as a supplement to liver extract or cyano-co-balamine. The soluble ferrous sulphate is the most satisfactory of the iron preparations for effecting haemoglobin formation. It has several other uses and thus becomes one of the most important pharmaceuticals widely used.

Position in India

Ferrous sulphate is now prepared by nine companies in the country, such as Alembic Chemical Works, Baroda; Ramco Chemical Works, Ahmedabad; Star Chemicals, Bombay; Dharamsi Morarji Chemical Co., Bombay, etc. The annual production during 1960 was 2,046 tons while the installed capacity was 3,917 tons. Even though statistics regarding the demand of this product are not available, it is understood that ferrous sulphate is in great demand not only in hospitals and several other medical institutions but is required by the various manufacturers of proprietary medicines and compounded preparations. This demand is likely to go up in the coming years as more and more people would receive medical treatment and with the result it would not be possible to cope up with the

demand. Expansion of the existing capacity would, therefore, have to be considered.

Position in Madras State

As with any other pharmaceutical, ferrous sulphate B.P. is not produced in the State, the present demand is met mostly through supply from the north and to some extent through import. It may not be possible for us to depend on the supply from the north for ever since the demand for this pharmaceutical is on the increase in the north and the present production may not be adequate to meet the local demands. Hence it is absolutely necessary that a manufacturing unit of our own is set up in the State. It has been reported by physicians in hospitals and other medical institutions that every day ferrous sulphate is consumed in large quantities, and that the supply of ferrous sulphate is inadequate to

meet the growing demand. It has also been reported that sometimes the quality of the pharmaceutical available is not upto the standard. Taking these factors into consideration, it may be concluded that a unit for the manufacture of ferrous sulphate conforming to the B. P. quality is a necessity for our State and every effort should be taken to set up one such unit with a capacity of 2 tons per day.

Process of Manufacture

Iron fillings and sulphuric acid with the requisite amount of water are reacted in a lead lined reaction kettle. The kettle is heated to a temperature of 180°F. After the reaction is over the contents in the kettle are allowed to settle and then filtered through a bed of sand or coke and the filtered liquor is run to concentrators. Triple effect vacuum evaporators (constructed of extra-heavy casting with copper tubes) may be used for this purpose. The hot concentrated liquor from the evaporator is allowed to cool to room temperature in the crystallisers. The crystallisation takes 2 to 3 days time. The crystals are filtered and washed (with warm water) in a centrifuge. The other liquor is returned to the reaction kettle or the evaporator. The crystals are broken and screened and are then dried with warm air (about 140°F) in rotary drum dryers.

The main difficulty in this process is the prevention of oxidation by air, whereby ferrous sulphate is changed to ferric sulphate. This is generally avoided by maintaining a slight excess of sulphuric acid.

Availability of Raw Materials

The chief raw materials that are required for the manufacture of ferrous sulphate are iron and sulphuric acid. With the development of engineering industries in the State,

there would not be any difficulty in procuring iron. Sulphuric acid is at present produced by Messrs Parry & Co., Ranipet, and Shaw Wallace & Co., Madras and hence availability of sulphuric acid would not be a problem. Thus the raw materials required for the project would be available locally.

Location of the Plant

The plant may be located in the City of Madras since the raw materials would be available easily.

Plant and Machinery

The machinery required for the manufacture of ferrous sulphate are all simple and available indigenously. The machinery would include storage tanks, reaction vessel, filters, concentrators (triple effect vacuum type) crystallisers centrifuge: dryer (rotary drum type) crusher, etc.

Economics

The capital investment for the production of 2 tons of ferrous sulphate works out to Rs. 4,00,000 out of which a sum of Rs. 2,00,000 will be required as capital investment on plant and machinery etc. and the rest viz., Rs. 2,00,000 will be for working capital. The cost of production of 1 ton of ferrous sulphate works out to Rs. 750 per ton excluding packing, forwarding charges, taxes, etc., while the selling price is Rs. 1,500 per ton of ferrous sulphate. Net profit for one ton of ferrous sulphate is Rs. 660. The estimates have been taken slightly on the higher side to allow for any fluctuation in the price of the machinery and raw materials, by intelligent and detailed planning it may be possible to effect economy in the estimates of the capital required.

STATEMENT I

Capital Investment

Basis : 2 tons per day

Capital Investment :	Rs.
Land and building ...	70,000
Plant and machinery ...	1,00,000
Erection charge ...	20,000
Pipe lines and fittings ...	10,000
	2,00,000
Working capital ...	2,00,000
Total ...	4,00,000

STATEMENT II

Raw materials required per day

Raw materials required	Quantity	
	lbs.	kg.
Iron ...	1,750	781
Sulphuric acid ...	3,000	1,340

STATEMENT III

Cost of Production

	Rs.
(1) Cost of raw materials.	
(a) Iron at Rs. 600 per ton 1,750 lbs. (781 kgs.) ...	470
(b) Sulphuric acid at Rs. 500 3,000 lbs. per ton (1,340 kg.) ...	700
(2) Labour and management ...	1,170
(3) Power and steam ...	100
(4) Depreciation on plant and machinery and building at 10% ...	50
(5) Interest on capital at 6% ...	60
Miscellaneous ...	40
	1,420
	80
Cost of production of 2 tons of ferrous sulphate ...	
	1,500
Cost of production of 2 tons of ferrous sulphate ...	1,500
Cost of production of 1 ton of ferrous sulphate ...	750
Selling price of 1 ton of Fe SO ₄ 7 H ₂ O ...	1,500
Gross profit per ton of Fe SO ₄ 7 H ₂ O ...	750
Less Administration and selling expenses at 5% ...	75
Insurance at 1% ...	15
Net profit per ton of Fe SO ₄ 7 H ₂ O	
	660
Net profit for 600 tons=660 x 600	
	3,96,000
On a capital investment of	4,00,000

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Manufacture of Salicylic Acid

★
Salicylic acid is an important pharmaceutical used extensively as a bacteriostatic and fungicide. It is used externally in dusting powders, lotions or ointments for the treatment of chronic ulcers, dandruff and parasitic skin diseases, such as ring worm. In the form of a paint with a collodion base or as a plaster, it is employed to destroy warts or corns. It is also the basic raw material for the manufacture of acetyl salicylic acid used as an analgesic and antipyretic.

Position in India

Salicylic acid is at present produced in the north by a few pharmaceutical firms such as the Ata Laboratory Ltd. Bombay, Indosal Chemical Corporation (Pvt) Ltd., Bombay etc. The annual production during 1960 was about 210 tons. During 1960 about 277 tons of salicylic acid were imported from U. K., U. S. S. R., West Germany, etc., Since this important pharmaceutical is used in the manufacture of aspirin and sodium salicylate, the Development Wing (Drug and Pharmaceuticals) have fixed the Third Plan target at 1,500 tons. The Hindustan Organic Chemicals Ltd., Panvel, Maharashtra have been given licence to produce among other things 300 tons of salicylic acid. The total capacity licenced including existing capacity is 670 tons. There is thus spare capacity available for the manufacture of salicylic acid.

Position in Madras

Madras State does not produce salicylic acid and the present demand is met mostly

through supply from the north and to some extent through import. The demand for salicylic acid in hospitals and several other medical institutions in the State has been steadily increasing and to cope up with the demand it is essential that Madras State should have a salicylic acid manufacturing unit. Taking into consideration the spare capacity available an economic unit of 300 tons per annum can be set up in the State.

Process of Manufacture

Phenol is run into an equimolar amount of hot aqueous caustic soda in mixers. The resulting solution is heated to about 130°C and evaporated to dryness in stirred autoclaves under vacuum. This operation is sometimes carried on in heated ball mills to ensure dryness as well as grinding of the resulting sodium phenate. After drying, the temperature is reduced to about 100°C and dry carbon-di-oxide is introduced under about 6 atmospheric pressure. After the desired amount of carbon-di-oxide is absorbed the charge is generally heated at 150 to 170°C for several hours.

The crude autoclave product, after cooling is dissolved in about an equal amount of water and filtered. After filtering the clear almost colourless solution is acidified with an excess of sulphuric acid or hydrochloric acid. The precipitated salicylic acid is centrifuged and dried in rotary dryers to give a high grade of salicylic acid.

Availability of Raw Materials

Phenol, caustic soda, sulphuric acid, carbon-di-oxide are the raw materials required for the manufacture of salicylic acid.

Phenol is not produced at present in the State. In the initial stages we have to depend upon the imported stuff. The Hindustan Organic Chemicals Ltd., at Maharashtra would shortly be producing about 1,500 tons of phenol out of which 1,250 tons would be available for sale. But this production may not be enough to meet the demands in various industries and as such cannot be depended upon for ever. Fortunately, the Neyveli Corporation are engaged in utilising the lignite available for various purposes and one such purpose would be the briguetting and carbonization of lignite. The tar which is obtained as a bye-product in this process would yield pure phenol. It is estimated that by the middle of 1964, 1,400 tons of pure phenol would be available from Neyveli. It may, therefore, be stated that with regard to the availability of phenol there may not be any difficulty in procuring it from the State itself.

Sulphuric acid is at present produced in adequate quantities by Messrs. Parry & Co., Ranipet and Messrs. Shaw Wallace & Co., Madras. Availability of sulphuric acid would not therefore be a problem. Similarly caustic soda is produced by Messrs. Mettur Chemicals, Mettur and Messrs. Dhrangadhra Chemicals Ltd., Tuticorin and would easily be available.

Carbon-di-oxide is at present produced by Messrs. Parry & Co., Nellikuppam, and Messrs. South Indian Carbonic Acid Corporation, Madras. In this connection it may be mentioned that dependence of carbon-di-oxide from outside sources involves many difficulties such as transport of cylinders to and from the factory, high initial capital required towards the procurement of the cylinders and high selling cost of the commodity. These difficulties can be avoided if the carbon-di-oxide is produced in the factory itself. Even though the initial capital cost for the plant may be about Rs. 2 to 2.5 lakhs, the advantages that would accrue are many and the cost of production of the finished product viz. salicylic acid would be low.

Location of the Plant

The plant can be located near Madras City where there would be facilities for railway siding etc.

Plant and Machinery

In the manufacture of salicylic acid, all the equipments required can be fabricated in India itself. The most important equipment is the autoclave which has to be fabricated using nickel steel or stainless steel. Other equipments required are centrifuges, filter press and dryers. Care should be taken in the fabrication of the autoclave.

Economics

For the establishment of one ton salicylic acid plant a capital of Rs. 8,30,000 is required out of which Rs. 3,05,000 will be on capital investment for plant and machinery and the sum of Rs. 5,25,000 is meant for working capital. The cost of production of salicylic acid exclusive of packing, forwarding and taxes etc., works out to Rs. 3,805 per ton. The selling price of salicylic acid is Rs. 6,720 per ton. Nett profit for one ton of salicylic acid works out to Rs. 2,515.

STATEMENT I

Capital Investment

Basis: One ton per day

	Rs.
Land and building ...	60,000
Plant & machinery including boiler	1,75,000
Erection charges at 20% ...	35,000
Pump and fitting etc. ...	35,000
	3,05,000
Working capital ...	5,25,000
Total ...	8,30,000

STATEMENT II

Daily Requirements of Raw Materials

Raw materials required	Quantity required per day
	lbs. kgs.
Phenol	3,030 1,352
Sodium hydroxide	1,290 576
Carbon-di-oxide	710 317
Sulphuric acid	1,590 710

STATEMENT III

Cost of Production

1. Cost of raw material:

	@ Rs. per ton	Lbs.	Kgs.	Rs.
Phenol	1,200	3,030	1,352	1,620
Sodium hydroxide	800	1,290	576	460
Carbon-di-oxide	nP. 0.68 per lbs.	710	317	480
Sulphuric acid	500 per ton	1,590	710	350
				2,910
Miscellaneous				90
				3,000

2. Labour and management	250
3. Power	50
4. Steam	100
5. Depreciation on building and machinery at 10%	300
6. Interest on capital at 6%	105

Cost of 1 ton of salicylic acid ... 3,805

Selling price of 1 ton of Salicylic acid at Rs. 3 per lbs. (Rs. 6.72 per kg.) ... 6,720

Gross profit per ton of salicylic acid 2,915

Less administration and selling expenses @ 5% ... 336

Insurance at 1% ... 64

Net Profit ... 2,515

Nett profit for 300 tons—2,515 x 300

= Rs. 7,54,500

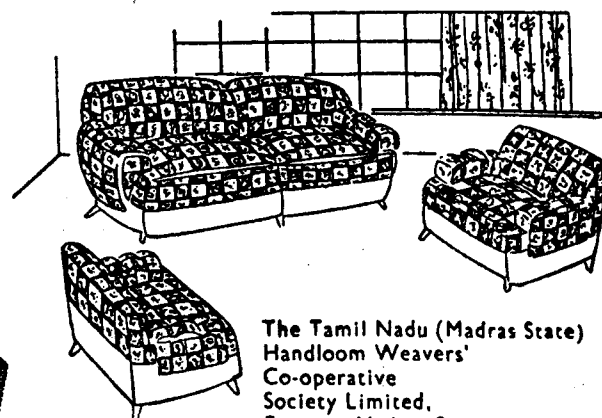
On a capital of Rs. 8,30,000

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Manufacture of Diamino Diphenyl Sulphone

The Pharmaceutical Industry in India has been one of the recently developed industries. The outbreak of World War II gave a tremendous impetus to this industry and very many firms entered the field to produce a number of drugs and pharmaceuticals. But the activities were mainly confined to mere processing and manufacture of compounded preparation, and did not extend rapidly to production starting from basic chemicals. With the advent of independence, the industry has been making steady progress, thanks to the efforts taken by the Government of India. The pharmaceutical Enquiry Committee set up by the Government of India in 1952, has made many important recommendations which have greatly helped the development of pharmaceutical industry in general. In spite of a number of impediments such as non-availability of basic raw materials, difficulties in importing plant and machinery, competition from foreign market goods etc. the industry has been maintaining its progress, though one may feel that it has not been very rapid. There is a growing demand for modern drugs in the country as people are becoming more and more conscious of recent advancements of medicine both preventive and curative. Even the present demand is likely to increase all the more with the rise of the standard of living and the spread of medical relief to the rural areas. The pharmaceutical and drug industry will therefore have to expand more rapidly to meet the increasing demand than ever before.

Position in Madras State

Pharmaceutical industry in Madras State has been practically non-existent. Barring one or two concerns which have been granted licence for the manufacture of a few proprietary, medicinal products there are no industrial units in this State which manufacture drugs and pharmaceuticals. In this respect, businessmen in the north, especially in Gujarat, Maharashtra and Bengal, have been far more enterprising and have started many good pharmaceutical industries in collaboration with foreign manufacturers. The present demand for various drugs and

pharmaceuticals in the State is met mainly through imports from the north and other foreign countries. With the increasing demand for modern drugs and pharmaceuticals every effort should be made to develop the drugs and pharmaceuticals industry in Madras State. Among the important drugs which are in great demand in hospitals and other medical institutions and which are not produced in sufficient quantities in the country is the drug D. D. S.

Diamino Diphenyl Sulphone or D. D. S. as it is commonly known is a powerful chemotherapeutic, widely used in the

treatment and control of leprosy. The present demand is mostly met from imports as there is only one company viz., Messrs. Bengal Chemical & Pharmaceutical Works Limited, Calcutta producing this valuable drug. It may be seen from above that even though there is great demand for this drug in Madras State, we have no unit of our own manufacturing this drug and have to depend mainly on imports. During 1959-60 import of this drug amounted to nearly 3,200 kilograms to the value of Rs. 94,181.

In a review made by the Development Wing (Pharmaceutical Division) on the progress made by the industry up to the end of March 1961, it has been stated that the total capacity licensed including existing capacity is 18.3 tonnes of D. D. S. The actual installed capacity as on 1-4-1961 was 18.3 tonnes. But the actual production was only 7.4 tonnes during 1960 by Messrs. Bengal Chemical & Pharmaceutical Company Private Limited.

Thus it may be seen that even though the capacity licensed is 18.3 tonnes, the production is very low resulting in the country depending mostly on imported drug. Realising the fact that D. D. S. is the only effective drug employed in the cure and control of leprosy and also that the number of patients actually receiving D. D. S. treatment is very small compared to the large number of leprosy patients in India. The Government of India have fixed the target for the Third Plan period at 40 tonnes, which means that there is still spare capacity of about 22 tons unlicensed. Since this dreadful disease is prevalent, all over the State and may increase in the years to come, it is necessary that immediate steps are taken to establish a D. D. S. manufacturing plant in Madras State. A plant with a

capacity of 20 tonnes per year would be an ideal one and would meet the demand not only of Madras State but some of the Southern States also. Establishment of such a plant would be a significant step forward in the development of drugs and pharmaceuticals industry in Madras State.

Process

Chlorination of benzene with the help of finely powdered iron as catalytical agent and fractional distillation yields pure monochloro benzene. The latter is nitrated with nitric acid-sulphuric acid mixture in the usual way and the pure p-nitro chloro benzene is isolated. It is advantageous to eliminate this process of obtaining p-chloro nitro benzene from benzene as the starting material, if p-chloro benzene is available. In this report, the economics has been calculated taking p-chloro nitro benzene as the starting material for the production of D. D. S.

The p-chloro nitro benzene is reacted with alcoholic caustic potash and carbondisulphide to give the p-p'-dinitro diphenyl sulphide. The crude sulphide is purified and dried. The dry powder is then oxidised with chromic acid in the usual manner and p-p'-dinitro diphenyl sulphone is obtained. The sulphone is purified and reduced with iron filings and hydrochloric acid. This is then neutralised with caustic soda solution and the precipitate is dried after filtration. The dry mass is powdered and extracted with alcohol. The alcoholic extract in concentration gives crude D. D. S. which on recrystallisation with alcohol and active charcoal yields pure D. D. S.

Plant and Machinery and Know-how

In the manufacture of D. D. S. the following unit process are involved. Chlorination, sulphonation, Amination, Oxidation and Hydrolysis and the unit operations such as evaporation, distillation, filtration and drying. Even though we have meagre facilities to design, most of the equipments can be designed in India itself and only the glass lines, reactors and auto claves have to be imported from foreign countries.

The production of D. D. S. involves as many as five complicated stages, it is better to have foreign collaboration for the establishment of the factory so that the technical know-how can be had from the more experienced people in the line.

Messrs Bengal Chemicals & Pharmaceuticals Works are the only manufacturers of this drug in India and the technical know-how can be obtained from them also.

Availability of Raw Materials

The basic raw materials required for the manufacture of D. D. S. are benzene, chlorine, chlorobenzene, potassium hydroxide, carbon disulphide, rectified spirit and nitric, sulphuric and hydrochloric acid. The other raw materials required include iron filings. Acetic acid, soda ash etc. Benzene is an important raw material for the manufacture of a good number of pharmaceuticals. Unfortunately our State is not producing this basic material. However, the coke oven plants in the steel mills both in the public and private sectors were expected to produce about 8.5 million

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gallons of benzene per year by 1962 and hence can be depended upon in the initial stages to make available, benzene for the D. D. S. plant. As the requirements of this raw materials for various other industries are expected to rise considerably during the Third Plan period, this State has to look to the local resources only. To achieve this, the State should have its own basic chemicals plant producing benzene, toluene, naphthalene and other coal chemicals, which are used as basic raw materials in the dyes and pharmaceutical industry.

There is ample scope for establishing such a plant since the Neyveli Lignite Corporation would be able to supply the tar which can be processed to produce the basic chemicals. There are also proposals to set up a coke oven plant, which, should also supplement the production of basic chemicals from Neyveli tar. Hence it may be emphasised that the establishment of a basic chemicals plant is very essential if our State has to make any progress in the development of pharmaceutical industry.

Another important raw material will be rectified spirit or industrial alcohol. This is at present available from the East India

Distilleries Company, Nellikuppam. A few more sugar factories also would shortly be putting up industrial alcohol plants and the production is expected to rise to about 4.54 million gallons per year by the end of 1956. Thus rectified spirit required for the manufacture of D. D. S. can be had from the State itself.

Nitric, sulphuric and hydrochloric acids are manufactured in the State by Messrs Parry & Co., Ranipet, and Messrs. Shaw Wallace Co. are manufacturing sulphuric acid. Hence there will not be any difficulty in procuring these materials. Chlorine is required to prepare p-chloro nitro benzene, which is an intermediate state in the manufacture of D. D. S. Chlorine is available in excess in Madras State. Two companies, Messrs. Mettur Chemicals Ltd., Mettur and Dhrangadhra Chemicals Limited, Tuticorin produce chlorine as a by product in their caustic soda manufacture. In fact, these companies are finding it a problem to dispose of the chlorine and the pharmaceutical industries which require chlorine in large amounts to prepare drugs like D. D. S. Phenacetin, etc. can turn out to be a regular consuming industry.

Firms in the north producing D. D. S. are not using benzene as the starting material but using p-chloro nitro benzene. This is not at present produced in the country and is imported. The Hindustan Organic Chemicals at Panval in Maharashtra being set up with German collaboration would produce p-chloro nitro benzene and the capacity is about 350 tonnes per annum of which about 160 tonnes would be available for sale. This production may not be sufficient to meet the entire demands of the country. This would therefore mean that a second intermediate plant is quite essential to be set up in the south. Other raw materials required are available indigenously and can be easily procured except potassium hydroxide which has to be imported.

Location of the Plant

The plant can be located at a suitable place in the State where railway siding facilities would be available. If the drug has to be manufactured with benzene as the starting material, then the plant can be located near Salem, or Tuticorin, where there would not be any difficulty in obtaining chlorine as the latter will be available

either from Mettur or Tuticorin. If, however, the drug is to be produced starting from p-chloro nitro benzene, the plant can be located near Madras City, with facilities for railway siding etc.

Economics

The cost of the plant and machinery with the working capital works out to be Rs. 10,00,000 for the production of 150 lbs. of D. D. S. based on local estimate. It may be stated here that the above is only a tentative estimate and will vary with the price structure of the various machinery involved. By intelligent and detailed planning it may also be possible to effect economy in the estimate of the capital required. Statement III shows the operational cost for 150 lbs. of D. D. S. The cost of production per lb. of D. D. S. works out to be Rs. 26 exclusive of packing charges taxes, freight etc. The selling price of D. D. S. is Rs. 50 per lb. and hence there is a good margin of profit. Since the p-chloro nitro benzene is to be produced by public sector, there won't be any difficulty in procuring the raw materials for this State.

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STATEMENT I

Capital Requirement

Estimate of building and machinery required and probable return for 150 lbs. of D. D. S. per day.

Estimate for building and machinery for D. D. S. plant.

Building and land ... 80,000
25% for drains and pipe lines etc. 20,000

... 1,00,000

Machinery ... 1,60,000

Erection expenses 25% ... 40,000

... 2,00,000

Working capital ... 6,00,000

Abstract

Investment on building ... 1,00,000

Machinery and equipment ... 2,00,000

Working capital ... 6,00,000

Know-how fees ... 1,00,000

Total ... 10,00,000

STATEMENT II

Raw Materials Required for 150 lbs. Per Day of D. D. S.

Raw Materials	Quantity Required per day	
	lbs.	kgs.
Para-choloro-nitro-benzene	300	134
Iron filings	900	401
Sulphuric acid	20	8.9
Potassium di-chromate	400	179.6
Acetic acid	12	5.4
Soda ash	100	44.7
Potassium hydroxide	200	89.4
Rectified spirit	4,000	1786
Carbon-di-sulphide	300	134
Hydro chloric acid	100	44.7

STATEMENT III Cost of Production

Raw Materials	Quantity		Amount
	lbs.	kgs.	Rs.
P-Chloro-nitro-benzene	300	134	300
Iron filings	900	400	315
Sulphuric acid	20	8.9	7
Potassium di-chromate	400	178.6	490
Acetic acid	12	5.4	12
Soda ash	100	44.7	20
Hydrochloric acid	100	44.7	47
Potassium hydroxide	200	89.4	250
Rectified spirit	4,000	1,786	1,500
Carbon di-sulphide	300	184	90
Total			3,020

OTHERS:

Wages	...	300
Power	...	50
Steam	...	50
Depreciation on building and machinery @ 10%	...	100
Interest on capital @ 8%	...	120
Spares and miscellaneous	...	150
		3,790
		or 3,800

Selling price of D. D. S. @ Rs. 50 per lb. for 150 lbs. including bye-products	...	7,500
Cost price of D. D. S.	...	3,800
Gross profit	...	3,800

Less Administration and Selling Expenses @ 5%	...	375
Insurance @ 1% ...	...	75

Net profit ... 3,350
for 150 lbs. of D. D. S.

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A Division of the
Department of Industries
and Commerce, Madras.

Manufacture of Isonicotinic Acid Hydrazide

Introduction

Isonicotinic acid hydrazide or isoniazide, as it is commonly known, is one of the most essential drugs used extensively in the treatment of tuberculosis. This important drug is used effectively in the prevention and cure of pulmonary tuberculosis but the drug appears also to be effective in the treatment of extra pulmonary lesions including meningitis and genito-urinary disease. Treatment of isoniazide should always be supplemented by the administration of calcium or sodium salt of para-amino salicylic acid or streptomycin. Isoniazide has also been successfully used in the treatment of lupus vulgaris.



POSITION IN INDIA: During 1960, India produced 29,244 kgms. of isonicotinic acid hydrazide against an installed capacity of 39,432 kgms. Seven units were engaged in the production of this drug. Messrs. Bengal Immunity Co., Ltd., Calcutta; Smith Stanistreet Co., Ltd., Calcutta; Fair Deal Corporation Private Ltd., Bombay; etc. are some of the firms who manufacture isoniazide. During 1961, the production rose to 40,280 kgms. and the number of units producing this drug also increased to eight. The present production is not adequate to meet the present demand. The occurrence of tuberculosis has been on the increase and the isoniazide treatment in the prevention and cure of this disease is widespread. The hospitals and other innumerable medical institutions are consuming every day large quantities of isonicotinic acid hydrazide. The demand far exceeds the production resulting in import of a good quantity of the drug. There is thus, great scope for expansion of the present production of isonicotinic acid hydrazide. A survey of the present state of the isonicotinic acid hydrazide industry in the country made by the Development Wing (Drugs and Pharmaceuticals Wing) shows that the present installed capacity stands at 56.3 tons of isonicotinic acid hydrazide. The new drugs project being set up with Russian collaboration at Hyderabad envisages the production of 20 tons of isonicotinic acid hydrazide. Recently another concern has been given licence to produce 0.8

ton per month or 9.6 tons of isonicotinic acid hydrazide annually. The Third Plan target fixed by the Government of India is 100 tons. It is now reported that entire capacity has been licensed and it is not possible to issue further licenses for the manufacture of isonicotinic acid hydrazide.

Madras State does not produce isonicotinic acid hydrazide. The entire demand is met by import from the north and abroad. In view of the fact that this important drug, which is used extensively in the treatment of tuberculosis by all hospitals and other medical institutions in the State, is not at present produced in the State and that the present demand is expected to go up in the years to come, it is essential that the State should have its own isonicotinic acid hydrazide manufacturing unit. In spite of the fact that there is no spare capacity available for the manufacture of iso-nicotinic acid hydrazide it may be stated that isonicotinic acid hydrazide is an important drug widely used and is not at present produced in the State. It would, therefore, be necessary to impress on the Government of India of the necessity for setting up an iso-nicotinic acid hydrazide plant in Madras and request them to grant further licence for this drug. A plant with a capacity of two tons per month would be an ideal plant and would meet with the requirement of the entire state.

The opening of a new plant for the manufacture of isonicotinic acid hydrazide apart from the foreign exchange saving involved, would play a substantial role in the country's economy by contributing to more adequate supplies of this life saving drug.

PROCESS OF MANUFACTURE: V-Picoline is oxidised with potassium permanganate to yield iso-nicotinic acid. This is esterified with ethyl alcohol in presence of HCl. The ester is

reacted with hydrazine hydrate to yield crude isonicotinic acid hydrazide. The crude isonicotinic acid hydrazide is purified by vacuum sublimation and recrystallisation.

AVAILABILITY OF RAW MATERIALS: The chief raw material required for the production of isonicotinic acid hydrazide is V-Picoline. This is not at present produced in the country. It is imported from abroad. Hydrazine hydrate is another raw material which is not produced in the State. It is also imported. The process chemicals required are potassium permanganate and ethyl alcohol. Potassium permanganate is now produced in the country to a small extent and most of the demand is met through imports. Recently a few companies have been issued the licence for the manufacture of potassium permanganate and with these units coming into production, the position with regard to potassium permanganate ($KMnO_4$) can be considered to be satisfactory. Industrial alcohol is now produced in the State by M/s. East India Distilleries Ltd., Nellikuppam. But there are proposals to increase the production of industrial alcohol to nearly three million gallons by the end of the Third Five Year Plan period. Hence availability of industrial alcohol will not be a problem.

PLANT AND MACHINERY: The equipment required for the manufacture of isonicotinic acid hydrazide are of the general type ordinarily used for the manufacture of chemicals. They include reaction kettle; neutraliser; centrifuges; distillation columns; purifier; filterpresses; evaporators; etc., etc. All the equipments can be designed, fabricated and erected indigenously. The technical know-how, if required can be had from the companies in the north who are already in the line of manufacturing this drug.

LOCATION OF THE PLANT: The plant can be located near Madras City where there

would not be any difficulty in procuring the imported raw materials. Railway siding and other facilities would also be available if the factory is located around Madras City.

ECONOMICS: Schedule (1) Gives details about the capital investment required for producing two tons per month of isonicotinic acid hydrazide. About 2.5 lakhs of rupees are required for the plant and machinery while the working capital works out to 1.90 lakhs of rupees. Schedule (2) shows the quantity of raw

materials required per month. Schedule (3) indicates the cost of production of 1 kg. of the finished product viz. isonicotinic acid hydrazide. The net profit as shown in the Schedule is Rs. 14.14 per kg. This results in an annual net profit of Rs. 3,39,860 on a capital investment of Rs. 6,25,000. This works out to 54% profit. Allowing for fluctuation in the price of raw materials and the finished product and other factors, the profit may safely be assumed to be around 45%.

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SCHEDULE 1
MANUFACTURE OF
ISONICOTONIC ACID HYDRAZIDE

Basis: 2 tons per month
 Capital Investment

Land and building ...	60,000
Plant and machinery ...	2,50,000
Boiler ...	25,000
Erection charges @ 2% ...	50,000
Service lines and miscellaneous @ 20% ...	50,000
Working capital ...	1,90,000

Total ... 6,25,000

SCHEDULE 2
MANUFACTURE OF
ISONICOTONIC ACID HYDRAZIDE

Basis: 2 tons per month
 Raw Material Requirement

Raw material required	Quantity
	kgs.
V-Picoline ...	1,535
Potassium permanganate ...	5,520
Hydrochloric acid ...	610
Ethyl alcohol ...	773
Hydrazine ...	535

SCHEDULE 3
MANUFACTURE OF
ISONICOTONIC ACID HYDRAZIDE

Basis: 2 tons per month
 Cost of Production

1. Raw Material Cost:	Rs.
(a) V-Picoline 1,535 kgs. @ Rs. 20 per kg. ...	30,700
(b) Potassium permanganate 5,520 kgs. @ Rs. 2.50 per kg. ...	13,800
(c) Hydrochloric acid 610 kgs. @ Re. 1 per kg. ...	610
(d) Ethyl alcohol 773 kgs. @ Rs. 1.25 per gallon ...	275
(e) Hydrazine 535 kgs. @ Rs. 13 per kg. ...	6,995
2. Power ...	250
3. Steam ...	500
4. Labour and staff ...	2,500
5. Depreciation on building @ 5% ...	210
6. Depreciation on machinery @ 10% ...	2,300
7. Repair and maintenance @ 5% ...	1,150
8. Interest on capital @ 6% ...	3,125
9. Miscellaneous ...	585

63,000

Cost of production of 2,000 kgs. 63,000-00

Cost of production of 1 kg. of Isonicotonic acid hydrazide ... 31-05

Cost of production of 1 kg. of Isonicotonic acid hydrazide ... 31-50

Selling price 1 kg. of Isonicotonic acid hydrazide ... 54-00

Gross profit per kg. ... 22-50

LESS: Administrative packing and selling expenses @ 15% ... 8-10

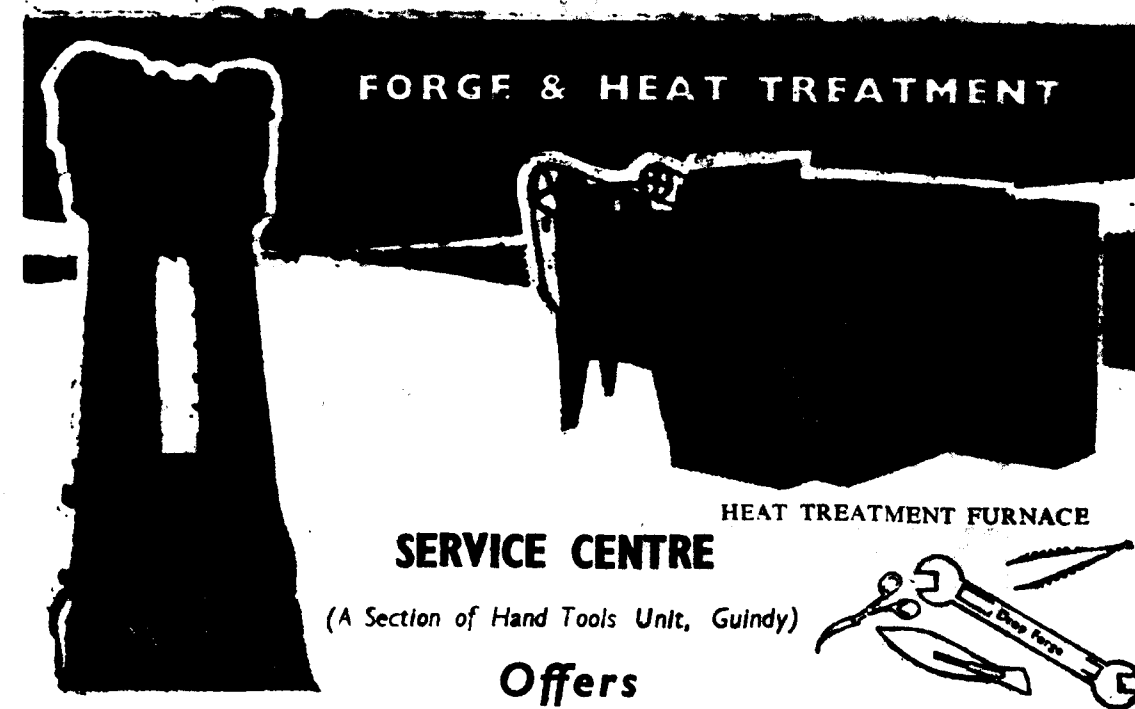
Insurance @ 1% ... 0-54

8-64

Net profit per kg. Rs. 13-83

Net profit for the year—Rs. 13-83x2000x12
 = Rs. 3,32,640

on a capital investment of Rs. 6,25,000



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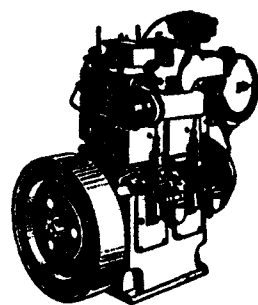
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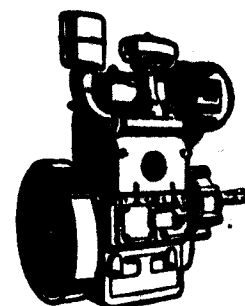
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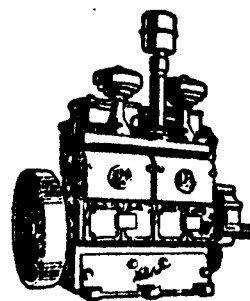
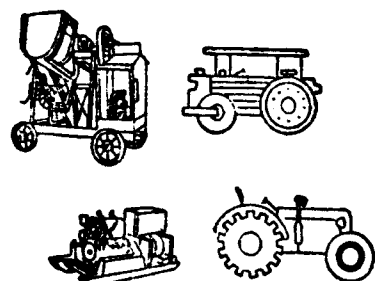
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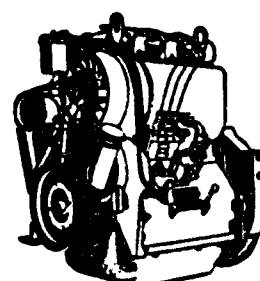
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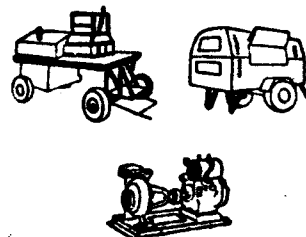
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Manufacture of Nicotinic Acid

INTRODUCTION

Nicotinic acid or niacin, is one of the most important vitamin drugs with extensive application as a curative agent for the disease "Pellagra". The daily requirements of niacin on an average is 5 mg./1000 calories and the usual prophylactic dose is 25 mg. There has been an appreciable lessening of mortality and alleviation of the symptoms of pellagra since niacin therapy has been introduced. Niacin also finds use in toxic reaction following the administration of sulfa drugs. Niacin which has a vasodilator action has been used in peripheral vascular disease, angina and disseminated sclerosis. Nicotinic acid also finds use as the basic raw material for the manufacture of 'Nikethamide', another important drug. It is also used in the preparation of nicotinyl alcohol.

POSITION IN INDIA: Production of nicotinic acid in India is very low during 1960 as only two units were manufacturing niacin. The total production of nicotinic acid and amide was only 219 Kg. During 1961 one more unit was set up to manufacture this drug and the total production was stepped upto 7,247 Kgs. This quantity is absolutely insufficient to meet the growing demand for this drug and large quantities are imported from abroad. During 1958-1959, 25,034 kgs. of nicotinic acid and amide to the value of Rs. 6,88,602 were imported. During 1959-60, the import went up substantially to 86,860 Kgs. of nicotinic acid and amide to the value of Rs. 16,54,203 were imported. The above figures reveal that almost the entire demand is met through import and the production of this drug in the country is far below the demand.

Taking into consideration, the rising demand for the drug in the country, as well as the huge amount of foreign exchange involved in importing this valuable drug, the Government

of India have granted licences to a few more industrialists for the manufacture of niacin and nicotinamide. The total capacity licensed including existing capacity is 63 tons while the actual installed capacity as on 1-10-61 is 48 tons. The break up figures for capacities licensed so far as follows:—

			tons
Maharashtra	...	...	28
Gujarat	...	...	15
Andhra (U.S.S.R. collaboration)	...	...	20

The drug project in Andhra with U.S.S.R. collaboration is under implementation and the capacity has not actually been installed. The target fixed for Third Plan period ending 1966 for niacin and niacin amide is 75 tons leaving 12 tons of the drugs unlicensed.

It may be seen from the above that Madras State does not have a unit for the manufacture

of niacin. The local demands are met mostly through imports. It has been reported that the daily use of niacin for treatment of pellagra and other diseases is going up steadily in hospitals and other medical institutions. Considering the fact that there is still a spare capacity of 12 tons for the manufacture of niacin and its amide and that there is demand for these drugs, there is ample scope for starting a factory for the manufacture of these drugs in Madras State. A unit producing about 12,000 Kgs. per year of nicotinic acid and 6,000 Kgs. of nicotinamide utilising part of the nicotinic acid as the starting material for the latter drug would be an ideal one and would go a long way in meeting the demands of the State.

PROCESS OF MANUFACTURE OF NICOTINIC ACID: Niacin can be manufactured with different raw materials. One such raw material is tobacco waste. Nicotine is extracted from the tobacco waste and oxidised to produce nicotinic acid. This process tobacco waste is rich in nicotine content. Tobacco waste available in the State is very poor in nicotine content and cannot, therefore, be used economically to manufacture Niacin. Pyridine is another raw material which can be used for the manufacture of niacin. Conversion of pyridine to 3 cyanopyridine followed by hydrolysis yields niacin. But the relatively high cost of the raw material and the non-availability of the same indigenously prevent it from being used economically for the manufacture of nicotinic acid. Recently a commercially profitable process has been developed for the manufacture of this drug. The raw material used is 2 methyl-5 ethyl pyridine (MEP. aldehydine). The process consists in oxidizing MEP with nitric acid and heating the resulting product to yield niacin. The raw material is not at present produced in India but can be imported from U.S.A. at a much cheaper rate than pyridine. (This product has been placed in large amounts in the U.S.A. markets). The

factories in Gujarat and Maharashtra who have been licensed to produce this drug intend producing it with MEP as the raw material.

But the most common method adopted widely is the oxidation of B-Picoline. Oxidation of N-Picoline with potassium permanganate yields niacin. Though other oxidizing agents such as Nitric acid and potassium dichromate are used, it has been found that potassium permanganate can be used economically to yield good results. This process has been taken into consideration while working out the economics in this report.

AVAILABILITY OF RAW MATERIALS: The chief raw material required for the manufacture of Nicotinic acid is B-Picoline. This material is not at present manufactured in India and has to be imported. The other raw material required is potassium permanganate. This is at present produced in the country in small quantities and most of the consumption is met through import. The production of this raw material would be increased during the Third Five Year Plan period. Hence there would not be any difficulty in procuring potassium permanganate indigenously.

LOCATION OF THE PLANT: The Plant can be located in Madras City where port facilities are available for importing the raw material.

PLANT AND MACHINERY: The equipments required for the manufacture of nicotinic acid consist of storage tank, reaction kettles; filter (stainless steel) crystallisers; centrifuges; drier; and pulveriser. All the equipment can be designed, fabricated and erected by indigenous manufacturers.

ECONOMICS: Schedule (1) gives details about the capital investment required for producing one ton per month of nicotinic acid. About 1,50,000 rupees are required for plant and machinery while the working capital

required, is about 90,000 rupees. Schedule (2) shows the quantity of raw materials required per month. Schedule (3) indicates the cost of production of 1 Kg. of the finished product. The cost of production of 1 Kg. of Nicotinic acid works out to Rs. 30 while the selling price is Rs. 56 the gross profit is Rs. 26 excluding insurance packing; selling and other expenses. The net profit is Rs. 17.64 per Kg. This results in an annual net profit of about Rs. 2,04,480 on a capital investment of Rs. 3,85,000.

SCHEDULE 1

CAPITAL INVESTMENT FOR THE MANUFACTURE OF NICOTINIC ACID

Basis: 1 ton per month

	Rs.
1. Land and buildings ...	50,000
2. Plant and machinery ...	1,50,000
3. Erection charges @ 20% ...	30,000
4. Service lines and miscellaneous @ 20% ...	30,000
5. Boiler ...	35,000
6. Working capital ...	90,000
	<u>3,85,000</u>

SCHEDULE 2

RAW MATERIALS REQUIRED PER MONTH FOR THE MANUFACTURE OF NICOTINIC ACID

Basis: 1 ton per month

	Kgs.
1. B-Picoline ...	768.5
2. Potassium permanganate ...	2,618.0
3. Hydrochloric acid ...	300.0

SCHEDULE 3

COST OF PRODUCTION FOR THE MANUFACTURE OF NICOTINIC ACID

Basis: 1 ton per month

	Rs.
1. Cost of Raw Materials:	
(a) B-Picoline 768.5 kgs. @ Rs. 20 per kg. ...	15,379
(b) Potassium permanganate 2618 kgs. @ Rs. 2.50 per kg. ...	6,545
(c) Hydrochloric acid 300 kgs. @ Re. 1 per kg. ...	318
2. Power ...	200
3. Steam ...	400
4. Labour and staff ...	2,500
5. Repair and maintenance @ 5% cost of machinery ...	800
6. Depreciation on building @ 5% ...	210
7. Depreciation on machinery @ 10% ...	1,600
8. Interest on capital investment @ 6% ...	1,860
9. Miscellaneous ...	225
Cost of production of 1 ton of nicotinic acid ...	30,000.00
Cost of production of 1 kg. of nicotinic acid ...	30.00
Selling price of 1 kg. of nicotinic acid ...	56.00
Gross profit per kg. ...	26.00

Less:

Administrative, packing and selling expenses @ 5% ...	8.40
Insurance @ 1% ...	0.56
	<u>8.96</u>

Net profit per kg. of Nicotinic acid ... 17.04

Net profit per year — $17.04 \times 1000 \times 12$ — Rs. 2,04,480

on a capital investment of Rs. 3,85,000

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Manufacture of Nikethamide

INTRODUCTION:

No single drug in medicine is so widely used in a large variety of diseases as nikethamide which is an ideal stimulant. It increases the rate and depth of respiration and produces slight peripheral vaso constriction. Nikethamide acts as analeptic and it has, therefore, been used to counteract the action of central nervous system depressants, such as morophine, barbiturates and anaesthetics. Because of its action on the peripheral vessels it is now used in circulatory failure occurring, for example, during acute infection and in surgical or transmatio shock.

POSITION IN INDIA: Nikethamide is produced in India by a few firms in Gujarat and West Bengal. The firms engaged in the manufacture of this drug are Messrs. Atul Products Ltd., and Chemical Industrial and Pharmaceutical Laboratories Ltd., The following table shows the actual production of nikethamide in recent years in India.

Year	No. of Units.	Actual Production in Kgs.
1960	3	3,108
1961	4	5,897

It may be seen from the above table that the production of this drug in the country is very little. Most of the demand is met through imports from abroad. Import figures for nikethamide in recent years are not available. From a review on the progress made by the Development Wing, it is seen that the demand for this drug is on the increase and expansion of the present capacity which is 7.1 tons is essential. Keeping this in view, the Govern-

ment of India have fixed the target for the Third Five Year Plan at 13 tons. This results in a spare capacity of nearly 6 tons unlicenced.

There is no unit in Madras State manufacturing nikethamide. The entire demand is met by import from North India and abroad. From a study made on the consumption of this drug in the State, it is found that this basic drug is in great demand in all the Government and other private hospitals and it is expected that the demand would go up in the coming years as more and more patients receive nikethamide treatment. The need for having a unit for the manufacture of this drug is therefore keenly felt. The spare capacity still left over unlicenced can be utilised in establishing a unit for the manufacture of 0.5 ton per month of nikethamide (6 tons per year). This unit would be able to cater to the needs of the entire State.

The conventional method of obtaining nikethamide is to first convert nicotinic acid into nicotinyi chloride by boiling the free acid with

thionyl chloride and then treating the resultant product with diethylamine hydrochloride. It is reported that the yield is very poor by this method and operations involved are too many. A slight modification of the above process using phosphorous pentoxide and diethylamine with nicotinic acid has yielded very good results and the B. C. P. W. Laboratories have successfully worked out the modified process for commercial exploitation. This method is given below and the economics for the manufacture of nikethamide in this report is based on this method.

PROCESS OF MANUFACTURE: Nicotinic acid is introduced into a reaction kettle fitted with a reflux condenser and dry oxlene is added to it. A little excess of the theoretical amount of diethylamine is then poured into it very carefully when a complete solution is obtained. The kettle is cooled and a little excess of the theoretical quantity of phosphorous pentoxide (P_2O_5) is added with shaking and cooling. The reaction mixture coagulates into a hard cake. The kettle is then heated to $120^\circ C$ for about an hour. The temperature is raised to $140^\circ C$ to $150^\circ C$ and maintained until the hard coagulum of the phosphorous compound melts into a thick liquid. After about four hours, the kettle is cooled and the xylene solution is decanted off. The hard cake left in the reaction kettle after decantation of xylene is dissolved in hot water and the solution boiled with decolourising charcoal and filtered. The clear filtrate was cooled and made alkaline with soda ash and extracted with benzene. The residual oil from the benzene extract is distilled under-reduced pressure when practically a colourless and almost odourless oil is obtained. This conforms strictly to B. P. Nikethamide.

AVAILABILITY OF RAW MATERIALS: The chief raw material required for the manufacture of nikethamide is nicotinic acid. This is produced by the oxidation of picoline with

Potassium permanganate. B-Picoline is not produced in the country and is imported. Thus it is essential that the unit which envisages the production of nikethamide should produce its own nicotinic acid. Hence it would be ideal if the production of nicotinic acid, nicotinamide and nikethamide is taken up as an integrated unit. The other raw materials required are diethyl amine, phosphorous pentoxide and xylene. Diethyl amine is produced in the country by M/s Lakshmi Chemical Industries, Bombay. Phosphorous pentoxide is produced indigenously by firms such as M/s Excel Industries Bombay and would, therefore, be available. Xylene would be produced by processing the tar obtained in the briquatting and carbonisation of lignite at Neyveli. The three Hindustan Steel Companies in the public sector also produce xylene which would be available. Thus it may be seen that almost all the raw materials are available indigenously and it would be most economical to manufacture nikethamide along with nicotinic acid and amide.

PLANT AND MACHINERY: The plant and machinery required are all of a general nature and can easily be designed and fabricated indigenously. The important equipment required are a stainless steel reaction kettle fitted with reflux condensing and stirrer arrangement; an autoclave for heating; distillation equipment; etc., etc.,.

LOCATION OF THE PLANT: The plant can be set up in Madras City where port and railway siding facilities would be available.

ECONOMICS OF MANUFACTURE: Schedule (1) shows the capital investment required for the manufacture of $\frac{1}{2}$ ton per month Nikethamide. The cost of plant and machinery is about Rs. 1,50,000 while the working capital required is about Rs. 90,000. Schedule (2) shows the monthly requirement of the raw materials for the production of $\frac{1}{2}$ ton per month of nikethamide. Schedule (3) gives the cost of

production of nikethamide which is Rs. 65.15 per kilogram. The current selling price in the market is Rs. 110 per kilogram. This results in a gross profit of Rs. 44.85 per kilogram. Allowing for packing, selling, administrative and insurance charges, the net profit works out to Rs. 27.25 per kilogram. The annual net profit is Rs. 1,63,500 on a capital investment of Rs. 3,50,000. If however, the plant for the production of nikethamide is set up in the factory producing nicotinic acid, some saving can be effected in the capital investment.

SCHEDULE 1 MANUFACTURE OF NIKETHAMIDE

Basis: $\frac{1}{2}$ ton per month

Capital Investment

	Rs.
1. Land and building ...	50,000
2. Plant and machinery (including boiler) ...	1,50,000
3. Erection charges @ 20% ...	30,000
4. Service lines and miscellaneous @ 20% ...	30,000
5. Working capital ...	90,000
Total capital required ...	3,50,000

SCHEDULE 2 MANUFACTURE OF NIKETHAMIDE

Basis: $\frac{1}{2}$ ton per month

Raw Material Requirement

Raw material required	Quantity
Nicotinic acid ...	511 kgs.
Xylene ...	65 litres
Diethylamine ...	333 kgs.
Phosphorous pentoxide ...	799 "
Soda ash ...	182 "
Benzene ...	168 "

SCHEDULE 3 MANUFACTURE OF NIKETHAMIDE

Basis: $\frac{1}{2}$ ton per month

Cost of Production

1. Cost of Raw Materials:	Rs.
(a) Nicotinic acid 511 kgs. @ Rs. 30 per kg. ...	15,330
(b) Xylene 65 litres @ Rs. 4.70 per litre ...	300
(c) Diethylamine 333 kgs. @ Rs. 6.50 per kg. ...	2,170
(d) Phosphorous pentoxide 799 kgs. @ Rs. 10.75 per kg. ...	8,500
(e) Soda ash 182 kgs. @ Rs. 400 per ton ...	70
(f) Benzene 168 kgs. @ Rs. 2.2 per kg. ...	370
2. Steam ...	300
3. Power ...	150
4. Labour and staff ...	1,500
5. Repair and maintenance ...	625
6. Depreciation on machinery @ 10% ...	1,250
7. Depreciation on building @ 5% ...	210
8. Interest on capital investment @ 6% ...	1,800
	<u>32,575</u>

	Rs. nP.
Cost of production 500 kgs. ...	32,575.00
Cost of production per kg. ...	65.15
Selling price per ks. ...	110.00
Gross profit per kg. ...	44.85

Less:

Administrative, Packing and Selling expenses @ 15% ...	16.50
Insurance at 1% ...	1.10
Net profit per kg. ...	27.25
Net profit per year — Rs. 27.25 x 500 x 12 — Rs. 1,63,500	
on a capital investment of Rs. 3,50,000.	

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Manufacture of Nicotinamide

INTRODUCTION

NICOTINAMIDE IS ANOTHER IMPORTANT DRUG WHICH HAS AN ACTION SIMILAR TO THAT OF NICOTINIC ACID EXCEPT THAT IT HAS NO VASODILATOR ACTION. IT IS USED IN PLACE OF NICOTINIC ACID FOR THE TREATMENT AND PREVENTION OF PELLAGRA.

PROCESS OF MANUFACTURE OF NICOTINAMIDE: Nicotinic acid is dissolved in equal quantity, of liquor ammonia in a reaction kettle made of stainless steel with inlet and outlet tubes for passing ammonia gas, the inlet tube reaching the bottom of the kettle. Small quantity of ammonium molybdate is added and the kettle is heated up to 140°C. Water is driven off and the whole solidifies. After a time, as the temperature is raised the mass remelts. Dry ammonia gas is then passed in slowly for about six hours maintaining the temperature. The reaction mass is then allowed to cool and dissolved in hot water, treated with decolourising charcoal and filtered. The filtrate is then evaporated on the steam bath dryness. The mass is finely powdered and thoroughly dried. The dried mass is dissolved in water, stirred and neutralised to p.h. 6.5 to 7 by careful addition of calcium oxide. The precipitate of calcium nicotinate, if any, and the excess of calcium hydroxide are filtered off from the neutralised solution which is evaporated to dryness on the steam bath. The dried mass is recrystallised from ethanol when pure nicotinamide is obtained. The yield is about 85%.

AVAILABILITY OF RAW MATERIALS: The basic raw material for the manufacture of nicotinamide is nicotinic acid which in turn is produced by the oxidation of P-Picoline. It, would, therefore, be economical to produce nicotinamide in the same factory, in which nicotinic acid is produced. The other important chemical, required is ammonia (Liquor and Gas). Ammonia is produced from fertiliser and Chemicals Ltd., Travancore and can easily be procured. Animal charcoal and ammonium molybdate are required in small quantities and can be obtained without much difficulty. Ethanol required for recrystallisation can be obtained from M/s East India Distilleries & Sugar Factories Ltd., Nellikuppam who are the sole manufacturers of alcohol in Madras State.

LOCATION OF THE PLANT: As stated above, the plant should be located along with the nicotinic acid plant. Madras City which has got railway siding and port facilities would be an ideal location for setting up the Plant.

ECONOMICS: Schedule (1) gives details about the capital investment required for producing half ton per month of nicotinamide.

The recovery of various bye-products from brines:

Further concentration of bittern results in crystallisation of salts at various stages of concentration as indicated below:

Concentration of bittern		Salts crystallising out
30°—32° Be ¹	...	Crude salt separates, which when washed with 24° Be ¹ liquor yield good quality salt.
32°—34° Be ¹	...	Crude second grade salt containing impurities like CaSO ₄ , MgSO ₄ , MgCl ₂ , etc. At this stage bromine can be recovered by treatment with chlorine.
34° Be ¹ on refrigeration	...	Epsom salt crystallises.
Evaporation to 30° Be ¹ and hot settling	...	Kieserite separates out. On cooling the overflow, caranallite crystallises out, from which KCl can be recovered.

Further concentration yield MgCl₂.

The process for the recovery of bye-products from bitterns in different salt works are not similar, since they do not proceed with the object of recovering all the chemicals but to obtain a maximum crop yield of a particular bye-product only.

Magnesium sulphate interferes with the precipitation of the individual salts at all concentrations. Hence in the recovery of the salts from sea water bitterns, magnesium sulphate must be removed before the other salts are crystallised out.

For the removal of MgSO₄ apart from the usual refrigeration method, the following processes are also adopted sometimes.

(i) By the addition of slaked lime to 32° Be¹ bitterns the magnesium sulphate is converted to magnesium hydroxide and is removed along

with the co-precipitate of calcium sulphate. The tail liquor from this stage contains the chlorides of magnesium and potassium from which carnallite is recovered. The difficulty with this process is the tedious nature of the separation and recovery of magnesium hydroxide and calcium sulphate from the co-precipitates.

(ii) In another method, the magnesium sulphate is precipitated as chloride by reacting with calcium chloride. Calcium sulphate is obtained as a fine powder and sold as gypsum. Since the magnesium sulphate is converted to its chloride, the yield of MgCl₂ is increased. In this process, the use of costlier chemical viz. calcium chloride in order to obtain less costly chemicals, offsets the utility of this process for economical running unless calcium chloride is available as a bye-product in the nearby soda ash plant. It is suggested that

calcium chloride can be obtained in the works itself by reacting slaked lime with MgCl₂ solution, but the difficulty of settling magnesium hydroxide precipitate offers a disadvantage. Depending on the stress to obtain a larger yield of a particular bye-product chemical, the course of the process is varied by different salt works in utilising these bitterns.

Tata Chemicals, Mithapur recover most of the bye-products as pure salts (originally present) from these bitterns by following the method of fractional crystallisation with chilling. The stages of concentration and recovery of salts at these stages are similar to the general method mentioned earlier. Pioneer Magnesia Works, Kharaghoda utilises only about 25% of their bitterns production. Here the process chosen yields as maximum output of commercial grade MgCl₂ and KCl alone. The maximum concentration to which the bitterns are taken up is 36° Be¹ before MgCl₂ is recovered. The method developed by Salt Research Institute, Bhavnagar, recovers most of the NaCl at 36° Be¹. At 36° Be¹ a crystalline mass containing 20% KCl, 15% NaCl, 35% MgSO₄, 8% MgCl₂ is obtained. The mother liquor contains mainly MgCl₂ and KCl. Further separation of these to obtain individual chemicals effected by employing precipitation with lime slurry and fractional crystallisation. The method is tedious, but gives a larger yield of KCl. The National Chemical Laboratory, Poona has proposed a process for the manufacture of mixed fertilisers containing NH₄Cl, (NH₄)₂SO₄, and KCl by treating with 34.5° Be¹ bittern devoid of NaCl with ammonia and carbon dioxide at 50°C. The magnesium and calcium are recovered as carbonates at various stages. The available nitrogen in the fertiliser would be 21.4%. The California Chemical Corporation follows a process in which the sulphates of magnesium and potassium are precipitated as CaSO₄ by reacting CaCl₂ with rawbittern. Carnallite is crystallised at

36° Be¹ from which both MgCl₂ and KCl are recovered in the usual manner. The required CaCl₂ for the process is obtained by treating a part of the sulphate free bittern with calcium hydroxide. From the precipitated Mg(OH)₂, light magnesia (MgO) or periclase is obtained by calcination in rotary kilns.

PROPOSED METHOD

It is proposed to follow a process where low initial capital investment and better returns with maximum recovery of the bye-products from bitterns are possible. A general survey of the various processing methods favours the choice of the one where all the bye-products are recoverable as pure salts as present originally in bitterns at various stages of concentration. Thus, for the economic recovery of all the bye-products from bitterns, the process of fractional crystallisation with refrigeration appears to be suitable. The pre-construction cost estimation figures by this process for a 100,000 gallons bitterns per day plant is indicated in table I. The production cost/day for 100,000 Gals. bitterns per day plant is given in Table II. The flow-sheet of the process is shown in fig. 1. The method is as follows:

By solar evaporation of the raw bittern, the crude salt recovered between 30° — 32° Be¹ is washed with 24° Be¹ brine to yield good quality common salt. The remaining bittern is further concentrated to 34° Be¹ in solar evaporators. The crude-second grade salt recovered during this stage is either sold as hide salt or allowed to go waste since this contains impurities like MgSO₄, CaSO₄, MgCl₂, KCl, etc. The remaining liquid is sprayed from the top of granite chlorinating towers kept at 60°C. Steam is sent up the tower from the bottom to meet the descending bittern stream and chlorine is injected part of the way up to the tower. The bromine thus released due to displacement by chlorine is condensed and taken to the purification system. The bitterns from this stage

chilled to 10°C by cooling coils of large capacity refrigeration units. Here most of the magnesium sulphate present in the bittern comes out as crude Epsom Salt ($\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$) which is purified by re-crystallisation with hot water. The liquor is then concentrated to 40°Be in triple effect evaporators. On hot settling of this 40°Be thick liquor, Kieserite remains in solution and a part of the still remaining sulphate settles as Kieserite ($\text{MgSO}_4 \cdot \text{H}_2\text{O}$). The overflow from the hot settler is taken to continuous crystallisers for the separation of carnallite ($\text{MgCl}_2 \cdot \text{KCl} \cdot 6 \text{H}_2\text{O}$). From the crude carnallite crop, KCl is obtained by using a predetermined amount of water in the leacher. The leached magnesium chloride solution is added on to the mother liquor from the carnallite crystalliser and is treated with a calculated amount of calcium chloride to remove the final traces of magnesium sulphate in an agitated tank where the (CaSO_4) sludge is removed by filtration. Now, the liquor containing MgCl_2 is taken through storage to fusion pots for further concentration. When all the excess water has evaporated off, at a temperature of 182° the molten mass of $\text{MgCl}_2 \cdot 6 \text{H}_2\text{O}$ is poured hot into drums and sealed after cooling.

RECOMMENDATIONS

1. The flow-sheet on the next page gives full details of the process to be employed for manufacture of the various chemicals. Hence manufacturer can choose any process to suit the chemicals he desires to recover.

2. The cost of production is based on 150 working days being the number of working days practicable allowing for rain and other weather conditions in certain areas of Madras State. Hence in working of cost each factory has to take into account its location and weather condition to decide on number of working days and calculate accordingly.

3. It is strongly recommended that the factory must be attached to a salt works. It is uneconomical to run a factory with less than 100,000 gallons of bitterns per day. To get 100,000 gallons of bitterns per day in Madras State, salt pans to the extent of 2,000 acres will be required.

4. To run a factory on a co-operative basis, combining the bitterns from various small holders, may be impractical and difficult on account of distance between the holdings and difficulty of co-operation from all holders.

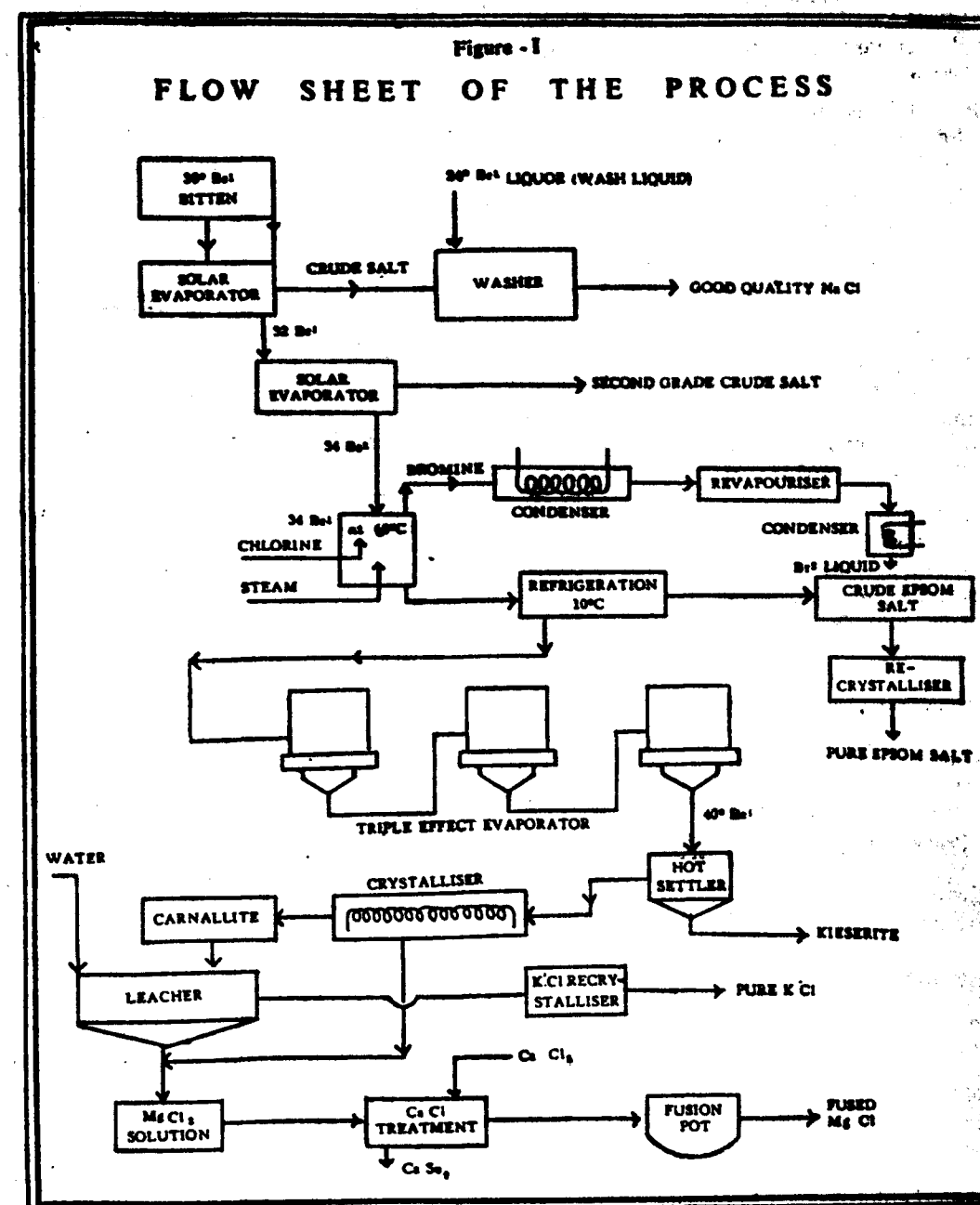


TABLE I
Rough cost estimate for 1,00,000 gals. bitterns/day
capacity plant

Costs		Rs.	
1. Buildings, land and other civil works ...	5,00,000	Maintenance @ 5% of building and plant..	1,10,000
2. Plant and equipment:			
(i) Refrigeration units			2,45,000 per year
2 sets ...	8,00,000	Per day ...	2,45,000 ÷ 180 = 1,694 (or) 1,600
(ii) Evaporators 2 sets ...	5,00,000	3. Labour and supervision	1,500
(iii) Centrifuging and other filtration equipments...	6,00,000	4. Indirect costs:	
(iv) Pumps, storage tanks and material transport equipment ...	2,00,000	Depreciation on plant and equipment @ 15% ...	8,40,000
(v) Absorption towers and crystalliser equipments	2,50,000	Depreciation on building @ 5% ...	25,000
(vi) Instrumentation and other miscellaneous types of equipment ...	50,000	Insurance and tax @ 3% on plant and buildings...	81,000
	22,00,000	Interest on total working capital @ 6% based on 3 months ...	25,000
3. Installation charges for erection of plant etc., at 10% on equipment cost...	2,00,000		4,61,000
4. Contingencies and miscellaneous at 5% ...	1,00,000		150
			8,074
			or
Total ...	80,00,000		1,100
Production cost/day (See Table I)	9,500		1,500
Estimated returns from bye-products sales/days.	22,500	5. Packing cost	9,250
			(or) 9,500



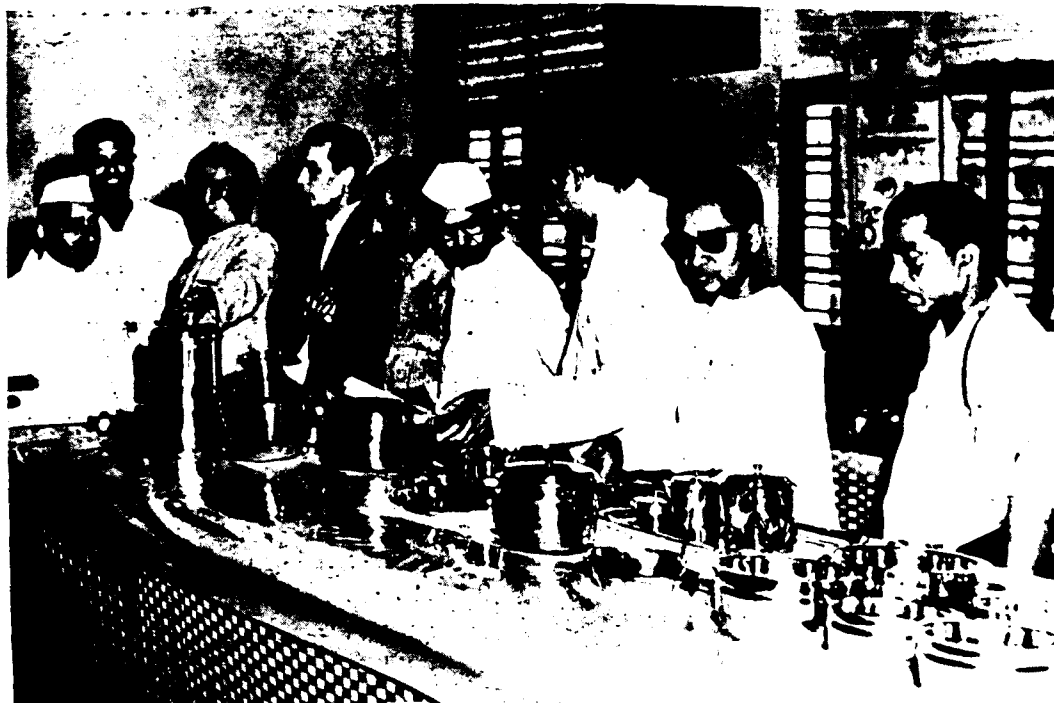
Members of the European Parliamentary Delegation, who visited the Guindy Industrial Estate, being received by Sri T. A. S. Balakrishnan, Director of Industries and Commerce.



Dr. (Kumari) A. B. Marikar, Director of Medical Services, Madras, inspecting a new type of labour board (UNCEF Model) during her visit to the Government General Purpose



Hon'ble Alhaji Sir Ahmadu Bello, Prime Minister of Northern Nigeria visited the Industrial Estate, Guindy. Picture shows the Nigerian Minister (centre) with Sri T. A. S. Balakrishnan, Director of Industries and Commerce, and others.



A delegation of Members of Parliament led by Sri P. R. Chakravartty, visited the Industrial Estate, Guindy on 30-12-63. Picture shows the Members evincing keen interest in the products

SCIENCE NEWSLETTER

CHEAP R. C. C. FRAMES FOR DOORS AND WINDOWS EVOLVED

TRIALS OF THE USE OF REINFORCED CEMENT CONCRETE (R. C. C.) FRAMES INSTEAD OF HARDWOOD FRAMES FOR DOORS AND WINDOWS HAVE NOT GIVEN DEFINITE SUCCESS IN THE PAST PRIMARILY BECAUSE OF LACK OF PROPER ARRANGEMENT IN THE FRAMES FOR FIXING THE SHUTTERS AND SECONDLY FOR WANT OF KNOW-HOW FOR GIVING GOOD FINISH.

In view of the present scarcity of good quality timber and its increasing cost, interest in R. C. C. frames has been revived and extensive trials for remedying the defects were undertaken by the Central Building Research Institute, Roorkee.

As a result, two simple and economic types of fixing arrangements have been evolved. One of them consists of 3/16 inch diameter aluminium tubes which can be embedded in the frame while casting; the other consists of wire helixes (formed by winding 20 gauges wire on wood screws) which can also be embedded in the frame while casting.

It has been found that a good finish to the R. C. C. frames can be imparted by rubbing

the frames with carborundum stone and supplying a final coat of cement paint. A superior finish, such as a terrazzo finish, can also be applied while casting the frames.

Besides, simulated tests on various designs have led to adoption of simpler design in which only three reinforcing bars, instead of the conventional six are employed.

The R. C. C. frames thus evolved are about 50 per cent cheaper than first class hardwood frames. Even with terrazzo finish, the cost compares favourably with that of timber. The main advantages are greater dimensional stability and durability. ★

NEW INSTRUMENT FOR TESTING VOLTAGE BREAKDOWN

An instrument for measuring breakdown voltage of electrical and electronic components and insulating materials has been designed at the Bharat Electronics Ltd., Bangalore.

The instrument can operate under continuously variable voltage A. C. or D. C. from 0 to 5,000 V. Another notable feature of the instrument is that a current limiting device

prevents current from exceeding 6 ma. on external short circuit so that the test is as far as possible non-destructive.

The circuit diagram of the unit comprises three transformers in series, the first together with a potentiometer in the primary winding to step up voltage continuously, from 200 to 5,000 V (A.C.); the second, a step-down transformer to heat the filament of a

silver, and the third with twin secondaries to operate the magic eye. The current limiting device consisting of a register and capacitor in series is also in the primary circuit of the step-up transformer.

To ensure safety, there is a spring loaded

switch in the earthing prod so that the high voltage appears on the H. T. only when the switch is pressed. Also the prods are insulated with 'plexiglass' rounds and the cables leading to the cabinet are insulated with special PVC sleeving tested up to 20 kv. ★

PREPARATION OF AGAR-AGAR FROM INDIAN SEaweEDS

Investigations at the Central Salt and Marine Chemicals Research Institute, Bhavnagar, have led to the standardisation of a method for the preparation of good quality agar-agar from seaweeds *Gelidium micropterum* and *Gracilaria lichenoides*.

The product satisfies the USP specifications and is much whiter than imported samples. The yield obtained is 80-40 per cent on the weight of dry seaweed.

Seaweeds for the investigation were obtained from Ramnad District (Madras State). The

effect of different treatments of the raw material on the quality of agar produced was studied. The results indicate: (i) Soaking the material 24 hours or longer does not improve the quality of agar much, (ii) extraction under pressure results in a product with decreased gel strength, and (iii) freezing and thawing are essential for obtaining a product with higher gel strengths and better appearance (besides improving the gel strength, freezing reduces the mineral constituents and nitrogen to an appreciable extent). ★

NEW TYPE OF CELLULAR ROOFING UNITS

A new type of precast cement concrete unit with trapezoidal cells has been developed for flat roofs at the Central Building Research Institute, Roorkee.

The optimum size of the unit has been established at 2 ft. x 4 ft. and weight about 200 lbs. They are placed on precast R. C. beams and covered with 1 inch thick lean concrete (1:3:16).

These units can be readily cast with the help of a simple timber framework and require only a nominal reinforcement of 10 SWG wire at

4 inch centre both ways in the bottom flange. The units withstand a static load of 450 lbs./sq. ft. and an impact load of a 60 lbs. sand bag dropped from 5 ft. height.

The complete assembly has been tested and found to be capable of taking a load of 400 lbs./sq. ft.

This roof results in a saving of about 46 per cent in steel and is about 20 per cent cheaper than conventional slab and T-beam construction. This type of roofing unit has been used in an experimental school building at Roorkee. ★

RECLAMATION OF RUBBER

A method for reclaiming rubber which does not give rise to a useless residual sludge and has the further advantage of not requiring digestion chemicals has been developed by a U. S. A. firm.

Known as the dry method, it permits recovery of the reinforcing fibres and is based on the fact that it is possible, owing to the difference in density, to separate the rubber and fibre particles by means of an air separator.

Used tyres are fed into cracker rolls that tear and cut the material to a size less than 1 inch. The material is then carried to vibrating screens by a belt conveyor from which operators take out bead wires that have been stripped of rubber. At the vibrating screen, smaller sizes of material are passed and are air-blown into further processing. Oversize material is recycled to the cracker rolls. Continuous weighing belts carry the material along the route and magnetic pulleys at regular intervals remove any residual wire or other ferrous metal that may still be present.

After passing through a second vibrating screen, the fibres are further crushed by a disintegrator and are then blown into the air separator. There, the material is carried to the centre of a revolving distribution plate which shoots material off its outer edge in a uniform horizontal circular spray. A fan sucks the finer material upwards through a large top

opening. A lower fan whirls the upcoming material forcing the coarser sizes away from this opening.

By exact regulation and control of centrifugal force and air currents, coarse and fine material are expelled through different outlets. Thus, the fibrous material is separated from the rubber particles, the former going to beater and the latter to a classification table where it is further defibred to remove the residual fibre. This unit is fitted with a porous, inclined deck which moves with a jerky reciprocating motion.

A controlled air current is directed through the porous surface of the deck such that heavy rubber particles which remain in contact with it are carried to the higher edge. The lighter particles (residual fibre) are carried to the lower edge, suspended in the air stream. A portion of intermediate weight material (rubber mixed with fibre) still remaining is discharged at an intermediate point on the classification table, to be recycled through the disintegrator and air separator.

The recovered rubber is finely ground and depolymerisation agents are added before treatment in a horizontal autoclave. The resulting rubber is then milled on smooth face rolls and the initially produced thin sheet is allowed to build up on a wind-up roll into slabs 1 inch thick. This slab rubber is sold to tyre and other manufacturers as a compounding material in their processes. ★

INSECTICIDAL AND RODENT REPELLING FORMULATION

Several chemicals which deter the attack of rodents on food commodities stored in bags have been screened at the Central Food Technological Research Institute, Mysore.

Of the chemicals screened, quinine hydrochloride has been found to be a good attractant

for rats. Baiting plates treated with quinine hydrochloride (10 mg./sq. ft.) can be used for attracting the rats to the baiting points where they can be trapped or poisoned under warehouse conditions.

Some essential oils and thiophosphate compounds have been found to act as rodent

rectifying repellents. The high viscosity insecticidal formulation of Durobase, developed earlier in the institute, has been improved by incorporation of rodent repellent factors. This formulation sprayed externally on the bag stack at the rate of 2-3 ml./sq. ft. can repel rats for a period of 60-80 days. ★

READY-MIX FLOUR FOR INDIAN SWEETS

Preparation of many of the Indian sweets like jilebi, jamun and jangiree is often laborious and time-consuming. Besides, some of them need special constituents (the khova in the case of jamun) which are not always readily available. To simplify the process for house-

hold use, dry ready-mix flours based on easily available components have been standardised at the Central Food Technological Research Institute in Mysore.

Consumer acceptability trials of the flours have given satisfactory results. ★

SECONDARY SPECIES OF TIMBER USE WILL EFFECT ECONOMY IN CONSTRUCTION COST

The Secondary species of timber, of short length and small dimensions, can be profitably utilised in building construction work, provided such timber, is seasoned and treated before use.

This is the outcome of the investigations carried out recently at the Forest Research Institute, Dehra Dun. These were sponsored by the National Buildings Organisation of the Union Ministry of Works, Housing and Rehabilitation.

The use of secondary species will help to relieve the shortage of primary species of timber and effect economy in construction cost.

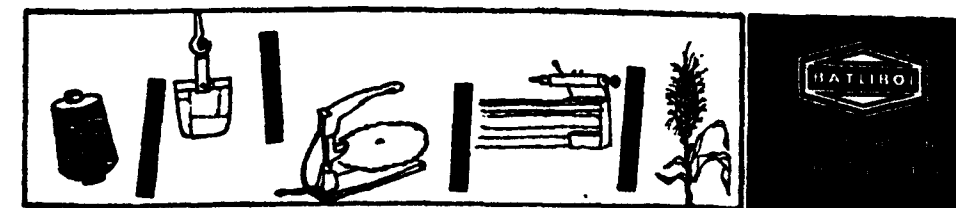
Designs of trusses of 8 to 8 metre (10 to 11 ft.) span made of secondary species of timber have been evolved and a few demonstration structures have been built at the Forest Research Institute, Dehra Dun.

It has also been investigated that joints with common wire nail can replace first-class carpentry joints and heavy steel gusset plates thereby effect further economy.

Based on these investigations, a report on 'nail joints in timber structures' has been brought out by the N. B. O. Copies of the report are available free of cost from the National Buildings Organisation, Exhibition Grounds, Mathura Road, New Delhi.



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INDUSTRIAL NOTES

PROTECTION TO INDUSTRIES:

DYE STUFF INDUSTRY

The Government of India have accepted the Tariff Commission's recommendation that protection granted to the industry should be continued for the remaining period of protection, that is, till December 31, 1964, at the existing rates of duty. Government have also accepted the Commission's recommendation to continue the concession duties at present leviable on certain intermediates upto December 31, 1964, when the position will be reviewed in regard to the need for further protection. Government's resolution on

the Tariff Commission's report has already been published.

In the resolution, Government have also taken note of certain ancillary recommendations of the Commission for assistance to the industry and will take suitable steps to implement them as far as possible.

The attention of the producers of organic and inorganic chemicals/intermediates and the manufacturers of sodium sulphide/dye-stuffs is also drawn to some of the recommendations in the resolution. ★

INDUSTRY MANUFACTURING A. C. S. R. (ALUMINIUM CONDUCTOR STEEL REINFORCED)

AND

A. A. C.

(ALL ALUMINIUM CONDUCTORS)

The Government of India's resolution on the Tariff Commission's report on the industry manufacturing A.C.S.R. (Aluminium Conductor Steel Reinforced) and A.A.C. (All Aluminium Conductors) has been published in the Gazette of India, Extraordinary. The Government of India have accepted the recommendation of the Tariff Commission to continue protection to the industry manufacturing A.C.S.R. and A.A.C. for a further period of three years

ending December 31, 1966, at a reduced rate of protective duty of 25 per cent ad valorem plus the usual surcharge. The reduced rate of duty viz. 25 per cent ad valorem is being brought into force with effect from 10-11-66 by a notification under section 4 (1) of the Indian Tariff Act, 1934.

In the resolution, Government have also accepted the recommendation of the

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Commission for continuing the existing policy of allowing imports of E. C. grade aluminium ingots/bars/ rods for A.C.S.R. and A.A.C. at the concessional duty of 15 per cent ad valorem plus Rs. 360 per tonne.

In the resolution, Government have taken note of certain other ancillary recommenda-

tions of the Tariff Commission for suitable action.

The attention of manufacturers of E.C. grade aluminium and the A.C.S.R. and A.A.C. and also consumers of A.C.S.R. and A.A.C. has also been drawn to some of the recommendations in the Government resolution. ★

SERICULTURE INDUSTRY

The Government of India have accepted the recommendation of the Tariff Commission that protection to the sericulture industry should be continued for a further period of three years up to the 31st December, 1966 at the existing rate of protective duty. Government's resolution on the Tariff Commission's report has been published.

In the resolution Government have taken note of certain other ancillary recommendations of the Tariff Commission for suitable action to the extent possible.

The attention of the Mysore State Government has also been drawn to one of the recommendations in the Government resolution. ★

AUTOMOBILE SPARK PLUG INDUSTRY

The Government of India have accepted the recommendation of the Tariff Commission that protection to the automobile spark plug industry should be continued for a further period of two years upto December 31, 1965, at a reduced rate of protective duty. Government's resolution on the Tariff Commission's report has been published already.

In the resolution, Government have taken note of certain other ancillary recommendations of the Tariff Commission for suitable action to the extent possible.

The attention of the spark plug and aluminium manufacturers has also been drawn to some of the recommendations in the Government resolution. ★

PISTON ASSEMBLY INDUSTRY

The Government of India have accepted the recommendation of the Tariff Commission that protection to the piston assembly industry should be continued for a further period of three years upto 31st December, 1966, at the existing rate of protective duty. Government's Resolution on the Tariff Commission's report has been published already.

In the resolution, Government have taken note of certain ancillary recommendations of the Tariff Commission for suitable action to the extent possible.

The attention of the piston assembly manufacturers has also been drawn to some of the recommendations in the Government resolution. ★

PROTECTION WITHDRAWN

ENGINEERS' STEEL FILES INDUSTRY

The Government of India have accepted the Tariff Commission's recommendation that protection to the engineers' steel files industry need not be continued beyond December 31, 1963.

The Government's resolution on the Commission's report has been published already.

Government have also taken note of certain other ancillary recommendations of the Commission for suitable action to the extent possible.

Attention of Messrs. Harbanslal Malhotra and Sons, steel file manufacturers and producers of grinding wheels, has also been drawn to some of the recommendations in the Government's resolution. ★

DIESEL FUEL INJECTION EQUIPMENT INDUSTRY

PROTECTION TO SINGLE CYLINDER FUEL INJECTION PUMPS, NOZZLE-HOLDERS AND COMPONENTS TO DISCONTINUE

The Government of India's resolution on the Tariff Commission's Report on diesel fuel injection equipment industry has been published in the Gazette of India, Extraordinary, dated 26-11-63. Government have accepted the Commission's recommendation to discontinue protection to single cylinder fuel injection pumps, nozzle-holders and components after the expiry of the present period of protection ending December 31, 1963.

this date will be reviewed along with automobile industry, protection to which is due to expire on 31-12-1967.

In the resolution, Government have taken note of the Commission's ancillary recommendation that, in view of the importance of providing indigenous raw material to light engineering industries, diesel fuel injection equipment industry might be given priority of supplies from the new alloy steel plants.

In the resolution, Government have taken note of the recommendation to continue protection to multi-cylinder pumps up to 31-12-1967. The question of protection beyond

Attention of the diesel fuel injection equipment industry has been drawn to some of the recommendations in the Government resolution. ★

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"INTRACO" CALLING

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OFFER OF YUGOSLAV COLLABORATION

'Intraco' a Yugoslav firm functioning at No. 9, Kothari Road, Madras-84, has reported that it can arrange for Yugoslav collaboration in setting up projects undertaken both by the Government as well as by private sector in our Country.

Mr. A. Pucnik, who is associated with this firm, it has been reported, had discussion with the officials of the Madras Government about the possibility and availability of Yugoslav collaboration with Indian industrialists and in pursuance of the conversation, Intraco had addressed the State Government expressing its offer of assistance in this regard.

The following are the industries for which this firm in Madras is prepared to arrange with the Yugoslav producers for supply of complete plant and machinery, and entrepreneurs interested in these items and parties who have obtained licences may contact them directly.

1. Cement plant (either for ordinary cement or high alumina cement).
2. Brick plant.
3. Chipboards.

4. China clay.
5. Steel rolling mills.
6. Pig iron.
7. Welding electrodes.
8. Machine tools.
9. Fish meal.
10. Fruit processing, canning, & preservation.
11. Photographic paper & X-ray film.
12. Trucks & trailers.
13. Dairy and pasteurisation.
14. Opening of mines for various ores and coal.
15. Modernisation of old mines.
16. Machinery for tanning hides and skins.
17. Tipping equipment plant for wagon trailers and trucks.
18. Automobile tyre plant.
19. Printing ink factory etc.,

Besides, the firm has also asked for details for more industries from their principals and any information about the collaboration and import of machinery for the lines not mentioned here may also be obtained from Intraco.

NEWS REVIEW

PLACING ORDERS FOR BOILERS

Under the provisions of the Indian Boilers Act, 1923 (Central Act V of 1923), all boilers for use in India should comply with the standard conditions laid down in the Indian Boiler Regulations, 1950, in respect of material, design and construction, before they can be registered and permitted to be used in India. According to these regulations, all boilers during construction should be inspected under the supervision of an inspection authority recognised for the purpose by the Central Boilers Board, who should certify on the completion of a boiler that the material and other details were tested and the boiler built under their supervision. The Steel Makers should also be certified as "Well Known" by the Central Boiler Board and the manufacturer should submit the details of construction and hydraulic test in the prescribed form before supplying the boiler. As per section 7 of the Indian Boilers Act, the owner of a boiler should submit an application for registration accompanied by the prescribed fee and forward the detailed drawing from the maker and other test certificates giving description of the boiler, its principal dimension, particulars of the material used in the construction and other certificates laid down in the Indian Boiler Regulations.

2. Instances have been brought to the notice of the Government in which orders for boilers had been placed with the manufacturers of foreign countries without consulting the Chief Inspector of Steam Boilers, Madras, with regard to the requirements of the Indian Boiler Regulations, 1950, in respect of material, specifications, inspection during construction, and the production of plans and certificate for the manufacture and inspection tests of boilers etc. Failure to consult the Chief Inspector of Boilers before ordering the boilers has been the cause of considerable delay in the registration of new boilers and has some times resulted in total rejection of some parts or reduction of working pressure of the boiler.

3. Persons who wish to place orders for boilers from abroad are, therefore, advised to consult the Chief Inspector of Steam Boilers, Madras, before they place such orders with the manufacturer, giving the Chief Inspector of Steam Boilers, as much information as possible, regarding the design, material and the mode of manufacture, etc., so that boilers can be accepted for registration without delay. ★

EXPORT OF IRON ORE

The responsibility in respect of export of iron ore of Indian origin had been taken over, with effect from 1st October, 1963, by the newly formed Minerals & Metals Trading Corporation of India Ltd. Hitherto it was

handled by the State Trading Corporation of India Ltd. It was further mentioned that all other instructions relating to export of iron ore mentioned in Export Instruction No. 107/57 dated 1st July 1957 remain unchanged. ★

MADRAS STATE INDUSTRIAL CO-OPERATIVE BANK LTD.

NEW BOARD OF DIRECTORS CONSTITUTED

Under By law 25 (a) of the By laws of the Madras State Industrial Co-operative Bank Limited No. 594, the Director of Industries and Commerce and the Registrar of Industrial Co-operatives is pleased to nominate the following gentlemen as members of the Board of Directors of the Bank for a further period of one year from 15th Jan. '64.

1. Sri K. Ramunni Menon, I.C.S., (Retd.)
2. " K. A. Ramachar,
B.A., (Hons.) B.Sc., Engg., A.M.I.E.,
Director, the Reid Co-operative
Timber Works Ltd.
3. Srimathi Sarojini Varadappan.
4. Sri K. Palaniswamy Gounder,
President, Annupparpalam Brassware
Workers Co-operative Society Ltd.
5. " K. A. Wahab,
Vice-President, Wandiwash Central
Mat Weavers Co-operative Society.
6. " Paramanandasamy Nadar,
President, Nagercoil Central Coir
Marketing Co-operative Society Ltd.
7. " V. M. Ghatikachalam,
Vice-President, The Madras State
Handicrafts Co-operative
Society Ltd.
8. " G. P. Mahadevappa,
President, Talavvadi Sericultural
Workers Co-operative Society Ltd.
9. " A. M. M. Arunachalam,
T. I. Cycles of India Ltd.

10. " R. Ganesan,
President, Small Scale Industries
Association.
11. " A. P. C. Veerabhahu, B.A., M. L. A.
President, the Tuticorin Co-operative,
Industrial Estate Ltd.
12. " T. S. Santhanam,
T. V. S. Ltd.
13. The Joint Secretary to Government,
Finance Department, Madras-9.
14. The Joint Director of Industries and
Commerce, (Industrial Co-operatives).
15. The Joint Director of Industries and
Commerce, (Small Scale Industries).

Under the same By law, Sri K. Ramunni Menon, I.C.S., (Retd.) and Sri K. A. Ramachar, B.A., (Hons.) B.Sc., (Engg.) A.M.I.E., are nominated as the President and the Vice-President respectively of the Bank for the said period.

Under By law 27 (8) of the Bank, the Registrar of Industrial Co-operatives is also pleased to nominate the following gentlemen as members of the Executive Committee for the said period.

1. Sri K. Ramunni Menon, I.C.S., (Retd.)
2. " K. A. Ramachar,
B.A., (Hons.) B.Sc., Engg. A.M.I.E.
3. " R. Ganesan.
4. " A. P. C. Veerabhahu.
5. " T. S. Santhanam,
T. V. S. Ltd.
6. Joint Secretary to Government,
Finance Department.
7. Joint Director of Industries & Commerce,
Industrial Co-operatives, Madras.

INDIAN STANDARDS

Over Three Hundred Indian Standards

Published in 1962-63

New and revised Indian Standards on different subjects of interest to industry and trade totalling 304 were published during the period April 1962 to March 1963. This was 45 more than the number of Standards published in the previous year. The total number of Standards printed and under print on March 31, 1963 was 2214. This is stated in the Sixteenth Annual Report on the working of the Indian Standards Institution published recently. The report shows considerable progress towards furthering India's industrial and economic development through standardization work done in co-operation with the industry, trade and technologists.

To facilitate and expedite the preparation of Emergency Indian Standards, a simplified procedure was evolved with the approval of the Government of India, and three Emergency Standards were prepared and published under this procedure. For dealing with matters relating to consumer products a new division—the Consumer Products division—was created.

The ISI Certification Mark, which provides a third party guarantee to the consumer, continued to gain popularity with different sectors of economy. The number of licences issued for the use of Standard Mark rose to 526 at the end of the year under report. The annual value of the goods covered under the

Scheme amounted to Rs. 60 Crores. The Scheme continued to receive greater recognition from different authorities and organizations. The Chief Director of Purchases, Army Purchase Organisation, Ministry of Food and Agriculture, made it obligatory upon suppliers of vanaspati for defence purposes to supply the product in 18-litre square tins carrying ISI Certification Mark. The Central Public Works Department decided to purchase, with effect from October 1, 1963, paints bearing ISI Certification Mark. The MES. (Southern Command) also took a similar decision in respect of paints. The All-India Sports Congress recommended that sports goods should be certified under the Scheme.

OCTOBER—DECEMBER 1963

The implementation of Indian Standards touched a new record of 1812 (representing 84 per cent of the total standards in force on March 31, 1962) as against 1804 during the previous year. During the period under review, 145 non-metric Standards were revised or amended to conform to the metric system.

The subscribing membership increased from 2810 to 2706.

A project to promote and develop Company Standardization activities in Indian industries was started by the Institution. For this purpose, the services of an expert were secured for a period of one year under the United Nations Technical Assistance Programme. Survey and training programmes and factory visits were conducted with a view to promoting and developing company Standardization practices in industries.

The Institution continued to make concerted efforts, through various measures, for creating

standard-consciousness among the industrial and commercial concerns and the people. It also continued to play its part in the work pertaining to Standardization at the international level.

The Institution actively participated in the work of 71 Technical Committees of the International Organization for Standardization and all the 54 Technical Committees of the International Commission besides holding Secretariat of six ISO and IEC Technical Committees.

The ISO Council has already accepted India's invitation to hold the next Triennial Session of ISO General Assembly in India. Accordingly, meetings of ISO General Assembly, Council and some important technical committees and special committees will be held in New Delhi from November 9 to 21, 1964. This will be the first time in the history of ISO that it will be holding such meetings in the East.

Specifications by Indian Standards Institution

It is the policy of the Government of Madras to progressively adopt specifications issued by the Indian Standards Institution and to give preference to goods bearing ISI Certification Mark for purchase of State Government. The manufacturers and users of goods are, therefore, advised to guide their production and procurement operations on the basis of Indian Standard Specifications to be in line with the State Government policy. It has been decided to include a regular feature in this journal giving the latest information about the Indian Standards published, draft Indian Standards circulated and the licences granted by the Institution during each month. Further information regarding these, if any, may be obtained direct from the Indian Standards Institution, Manak Bhavan, 9, Mathura Road, New Delhi-1 and from its Branch Offices located at Bombay, Calcutta, Kanpur and Madras.

(A) INDIAN STANDARDS PUBLISHED

The following new and revised Indian Standard Specifications have been issued by the Indian Standards Institution during the month of September 1963 :

DIRECTORY OF SMALL SCALE INDUSTRIAL UNITS IN MADRAS STATE

PUBLISHED BY THE DIRECTOR OF INDUSTRIES AND COMMERCE,
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THE MANAGER-cum-EDITOR,
Technical Information Section,
Industrial Estate, Guindy, Madras-32.

(Copies are not sent by V. P. P.)

OCTOBER—DECEMBER 1963

IND-CON JOURNAL

No.	Article	Specification	Coverage	Price Rs.
4.	Code of Practice for Design, Fabrication and Erection of Vertical Mild Steel Cylindrical Welded Oil Storage Tanks	IS: 803—1962	Materials, design, fabrication, erection and testing requirements for mild steel cylindrical welded tanks for oil storage in various sizes and capacities.	10.00
5.	Specification for Engineers' Pattern Tee Squares	IS: 1360—1963	Requirements for four sizes of engineers' pattern tee squares, designated as TO, T1, T2 and T3.	1.50
6.	Specification for Engineers' Pattern Drawing Boards	IS: 1444—1963	Requirements for four sizes of engineers' pattern drawing boards designated as DO, D1, D2 and D3.	1.50
7.	Methods of Testing Small Clear Specimens Timber Part II	IS: 1708 (Part II) —1963	Methods of testing small clear specimens of timber for tension perpendicular to grain, tension parallel to grain, nail and screw pulling tests, brittleness test (Izod and Charpy tests), and torsion test.	3.50
8.	Specification for Milling Arbors	IS: 2169—1963	Requirements of arbors and stub arbors for use in milling machines provided with morse or self-release (7/24) tapers.	5.50
9.	Specification for Starters Fluorescent Lamps	IS: 2215—1963	Requirements and methods of tests for two-pin, canister-type glow starters for preheat types of fluorescent lamps of ratings 15 to 80 watts.	3.50
10.	Recommendation for Providing First-Aid Fire Fighting Arrangements in Public Buildings	IS: 2217—1963	Requirements regarding first aid fire fighting arrangements including the scale of equipment to be provided in public buildings.	2.00
11.	Specification for Stainless Steel Milk Vats	IS: 233C—1963	Constructional details and dimensional requirements for stainless steel milk vats of capacities of 500, 1,500 and 2,000 litres, designed to collect or store milk prior to its processing or despatch.	2.00

No.	Article	Specification	Coverage	Price Rs.
12.	Specification for Aluminium Milk Vats	IS: 2357—1963	Constructional details and dimensional requirements for aluminium milk vats of 300, 500 and 1,000 litres capacity, designed to collect or store milk prior to its processing or despatch.	2.00
13.	Code of Practice for External Rendered Finishes	IS: 2402—1963	Application of external rendered finishes for all normal types of backgrounds. It also specifies the materials to be used for rendering and the minimum preparation of background for application of finish.	6.00
14.	Methods of Static Tests of Timbers in Structural Sizes	IS: 2408—1963	Methods of testing and collection data on timber sections of structural sizes, and does not include sampling of specimens or methods of analysis for making use of the data for different purposes.	4.00
15.	Methods of Chemical Analysis of Fluorspar	IS: 2411—1963	Methods for determination of calcium fluoride, calcium carbonate, silica, mixed oxides, barium, lead, zinc and sulphur in fluorspar of metallurgical and acid grades within the various ranges prescribed in the standard.	4.00
16.	Specification for Cotton Twine	IS: 2413—1963	Requirements for cotton twine Nos. 720 and 560.	2.50
17.	Methods of sampling and Presentation of Data for Timber Testing	IS: 2455—1963	Selection of timber for testing from logs from natural and plantation grown trees inside a forest, and the presentation of data so collected.	4.50
18.	Specification for Boiler and Superheater Tubes for Marine & Naval Purposes	IS: 2416—1963	Requirements of the boiler and superheater tubes for marine and naval purposes.	3.50
19.	Glossary of Terms Relating to Ultrasonic Testing	IS: 2417—1963	Terms relating to ultrasonic testing.	5.00

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INDUSTRIES
GOVERNMENT OF MADRAS

Please Contact:

**The Superintendent,
GENERAL PURPOSE ENGINEERING WORKSHOP
RAJAPALAYAM.**

(B) DRAFT INDIAN STANDARDS CIRCULATED

The Institution has put into wide circulation the following draft standards for eliciting technical comments during the month of September 1963. Copies of these draft standards could be obtained, free on request, from the Office of the Indian Standards Institution, Manak Bhavan, 9 Mathura Road, New Delhi-1, and from its Branch Offices located at Bombay, Calcutta, Kanpur and Madras, for your technical comments which will be taken into consideration before the drafts are finalised as Indian Standards.

No.	Article	Coverage
1.	Code of Practice for Roofing with Wooden Shingles	Laying of wooden shingles for roof covering and includes specification for wooden shingles.
2.	Specification for Packages for Use of Lending Libraries	Guidance regarding the manufacture and use of packages.
3.	Brushes, Paints and Varnishes, Flat (Revision of IS: 384—1961)	Incorporates several improvements concerning tests for bristles, optimum weight of bristles to be used for each size of brush, timbers to be used for handles and other details of workmanship and finish.
4.	Specification for Lighting Arresters for Alternating Current System Pt. I	Applies to lightning arresters consisting of single or multiple spark gaps in series with one or more non-linear resistors.
5.	Performance Requirements for Taxi-meters	Performance requirements for taximeters to ensure that the taximeters register the exact fare.
6.	Specification for Shunt Capacitors for Power Systems	Safety and performance requirements, methods of tests and rating.
7.	Specification for Steel Sheets for Magnetic Circuits of Power Electrical Apparatus (Oriented Steel)	Requirements for oriented magnetic steel sheets and strips primarily intended for machines and transformers operating at power frequencies and applies to material which shall be supplied in one nominal thickness only and in four grades.

No.	Article	Coverage
8.	Liquid & Plastic Limits for Soils Shrinkage Factors of Soils Moisture Content of Soils Specific Gravity of Soils Field Moisture Equivalent of Soils	Method of test for the determination of liquid and plastic limits of soils, shrinkage factors of soils, moisture content of soils, specific gravity of soils and field moisture equivalent of soils respectively.
9.	Specification for Motor Capacitors	Applies to motor capacitors of metal foil paper design and of metallized paper design with rated voltages upto and including 650 V and to motor capacitors of electrolytic design with rated voltages upto and including 320 V for capacitor motors connected to single phase systems having a frequency upto and including 100 c/s.
10.	Specification for Steel Scaffolding	Steel scaffoldings suitable for use in normal building construction work.
11.	Specification for Vaccine Phials	Requirements for vaccine phials.
12.	Specification for Polycrystalline Semi-Conductor Rectifier Equipment	General requirements, performance criteria and tests for the rectifier equipment using polycrystalline semi-conductor rectifier stacks and used for applying DC power from AC sources at frequencies up to 2,000 c/s.
13.	Direction of Operation of Controls for Machine Tools	Direction of operation of controls for setting in motion corresponding machine tool parts when the controls are hand operated.
14.	Specification for Carbon Steel Castings Suitable for High Temperature Service (Fusion Welding Quality)	Carbon Steel casting, for valves, flanges, fittings or other pressure containing parts for high temperature service and of quality suitable for assembly with other castings or wrought steel parts by fusion welding.
15.	Specification for Industrial Safety Helmets	Guidance both in the manufacture and purchase of industrial helmets capable of providing adequate protection from falling objects and other hazards commonly met with in many industries.
16.	(i) Mild Steel Sliding Door Bolts for Use with Padlocks (Revision of IS: 281-1951) (ii) Non-Ferrous Metal Sliding Door Bolts for Use with Padlocks	Requirements regarding materials, dimensions manufacture, finish and marking and packing of sliding door bolts commonly used in general building construction for locking doors, windows, etc, with padlocks.

No.	Article	Coverage
17.	Specification for Galvanized Steel Buckets for General Use	Mild steel buckets only for general use as the requirements applicable to buckets intended for fire fighting are quite different from those applicable to buckets for general use.
18.	Specification for Brush, Shoe Blacking	Requirements of materials as well as the shape and dimensions, and workmanship and finish of these brushes.
19.	Specification for Brush, Scrubbing	Requirements for raw materials used, dimensions and workmanship, and finish of brushes.
20.	Specification for Safety Matches in Boxes	Hand-made and machine-made safety matches in which the sticks shall be made of wood or bamboo and boxes of wood bamboo or cardboard.

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Physical testing of metals and alloys for tests such as tensile strength, compressive strength, etc. are also undertaken. Work on beneficiation of low grade minerals and ores is also carried on at the laboratory.



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 Industrial Estate — Guindy, Madras-32.**

Nine Licences Granted for the use of

ISI Certification Mark During August 1963

Under the authority vested in it by the ISI (Certification Marks) Act, 1952, as amended in 1961, the Indian Standards Institution has granted, during the month of August 1963, nine licences to the following manufacturers, for the use of ISI Certification Mark in respect of the products noted against each :

Sl. No.	Name and Address of the Licensee	Article / Process Covered by the Licence	Relevant Indian Standard
1.	M/s Tata-Fison Ltd., Pandit Motilal Nehru Road, Jumna Kinara, Agra (having their office at Union Bank Building, Dalal Street, Fort, Bombay-1.)	Copper oxychloride water dispersible powder concentrates	IS: 1507—1959 Specifica- tion for copper oxychlo- ride water dispersible powder concentrates.
2.	do.	Endrin emulsifiable concentrates	IS: 1810—1958 Specifica- tion for endrin emulsi- fiable concentrates.
3.	M/s Radio & Electrical Manufacturing Co. Ltd., Post Bag No. 18, Mysore Road, Bangalore-18.	(i) PVC Insulated flexi- ble cords, 250 Volts grade (ii) PVC Insulated cables, 650 Volts grade	IS: 694—1960 Specifica- tion PVC Cables and cords for electric power and lighting for working voltages up to and including 650 volts to earth (Tentative, amen- ded).
*4.	M/s Multiple Core Solders Private Ltd., 69, Main Road, Whitefield, Bangalore.	Rosin cored solder wire activated (Non-corro- sive), grade 40/60	IS: 1921—1961 Specifica- tion for rosin cored solder wire activated and non-activated (non- corrosive).

* Manufacturers with asterisk mark are the first licensees for the products licensed.

Sl. No.	Name and Address of the Licensee	Article / Process Covered by the License	Relevant Indian Standard
5.	M/s Flintrock Products Private Ltd., Belvedere Road, Mazagaon, Bombay-10.	Endrin emulsifiable concentrates	IS: 1810—1958 Specification for endrin emulsifiable concentrates.
*6.	M/s Nestle's Products (India) Ltd., Link House, 3 Mathura Road., New Delhi-1 (Factory at Ludhiana-Ferozepur Link Road, Near Kingway Canal Moga [Punjab] under the style of M/s Food Specialities Ltd.).	Condensed milk, full-cream, sweetened	IS: 1168—1957 Specification for condensed milk.
7.	M/s Padma Ltd., P. O. Oliviacherra, Dist. Cachar, Assam.	Tea-chest plywood panels	IS: 10—1953 Specification for plywood Tea-chests (Revised).
8.	M/s Hindustan Steel Ltd., Bhilai Steel Plant, Bhilai-1, Dist. Durg (Madhya Pradesh) (having their office at P. O. Hinoo, Ranchi.)	Structural steel (Fusion welding quality)	IS: 2062—1962 Specification for structural steel (fusion welding quality).
9.	M/s Hindustan Steel Ltd., Durgapur Steel Product, Durgapur-3, Burdwan, West Bengal (having their office at P. O. Hinoo, Ranchi.)	do.	do.

The presence of the ISI Certification Mark on these products conveys the assurance that they have been produced to comply with the requirements of the relevant Indian Standards under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed, are continuously checked by ISI for conformity to standards.

Complaints, if any, about the quality of such certified products may be brought to the notice of this Institution as well as to the licensees concerned.

* Manufacturers with asterisk mark are the first licensees for the products licensed.

INVENTIONS ABROAD

NEW PROCESS PUMP IS COMPARATIVELY MUCH CHEAPER

A NEW PROCESS PUMP-GLANDLESS, SELF-PRIMING, IN-LINE, WITH POSITIVE DISPLACEMENT-HAS BEEN DEVELOPED BY A BRITISH FIRM. TWO VERSIONS OF PUMP WERE DEMONSTRATED RECENTLY TO ENGINEERS FROM SEVERAL OIL COMPANIES.

The makers claim that the cost is one-third that of a conventional pump capable of a similar performance. The pump, which has positive displacement, can handle Newtonian liquids, slurries, pastes, suspensions and medium-viscosity liquids. The drive mechanism is immersed in twin oil baths isolated completely from the process line. At low manometric heads-up to 25 ft. water gauge, it has a

volumetric efficiency of up to 140 per cent. It is self-priming and will draw from vacua of up to 10 ft. hg. absolute (dry chamber) and 4 ft. hg. absolute (flooded chamber) whilst discharging against pressure.

Manufacturers:

Kelston Pumps Ltd.,
Eastern Avenue,
Gloucester, England.

TIMBER SHREDDER FOR PRODUCTION OF WOOD SHAVINGS AND CHIPPINGS

An inexpensive, portable waste timber shredder for the production of wood shavings and chippings has been developed by a British firm.

Designed for use "on the-spot" where the waste material is to hand, it will fit any form of tractor, using the tractor's power-take-off shaft for drive. The chippings, it produces are used for bedding cattle and poultry and are said to have several advantages over straw, or the sawdust and fine shavings which are frequently used.

The shredder accepts hardwoods and softwoods, both green and dry, to a maximum of 6 in. in width or diameter and, in spite of its

small size, has an output of from one to three tons of chippings per hour, dependent on the size and type of wood and the adjusted cutting depth of the blades. The chip size is similarly variable, but with the cutting blades set to 0.082 in. projection, the average chip will be approximately 1/16 in. x 3/16 in. x 1/4 in. and this chip size will be constant. The chips are ejected in a blown stream and by this method a lorry or trailer can be completely filled by the machine without hand labour.

Manufacturers:

"Cundeys Ltd.,
Alfroton,
Derbyshire, England.

NEW LOOK IN VENEERS

Two British firms have co-operated in the production of a new decorative material, combining real wood veneers with a plastics preparation claimed to be resistant to abrasion, heat and stains.

The new product is a conventional wood veneer, reconstituted to produce consistent

designs in straight line patterns of flowery grains. It can be used with the same ease as printed paper laminates for plastics finishes.

Manufacturers:

John Wright & Sons (Veneers) Ltd.,
Avon Wharf, Mile End Road,
London, E. E. 3.

OCTOBER—DECEMBER 1963

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Use Always **"ANIL"** Products

"ANIL" MATCHES

**"ANIL" FIREWORKS & PAPERCAPS
IN DOTS AND ROLLS**

"ANIL" METAL INDUSTRIES PRODUCTS

METAL PRODUCTS AND HOUSEHOLD THINGS



Enquiries Solicited to:

Matches —The National Match Works, Sivakasi (S. India)

Fireworks—Anil Fireworks Industries, Sivakasi (S. India)

Metal Products & Household Things } Anil Metal Industries, Works at Sulakkarai;
Industrial Estate, Virudhunagar
and Office Sivakasi, S. India.

BOOKS

TECHNICAL INFORMATION SECTION LIBRARY

INDUSTRIAL ESTATE, GUINDY

List of Books Added

1. An Introduction to the Design and Manufacture of Moulds for the Plastics Industry *L. J. Shehan.*
2. Theory of Metal Cutting *Paul H. Black.*
3. Die Casting *Doehler.*
4. Machine Design Problems *Donald J. Myatt.*
5. How to run a Small Business *J. K. Lasser.*
6. Management, Planning and Control *Billy E. Goetz.*
7. Techniques of Value Analysis and Engineering *Lawrence D. Miles.*
8. Engineered Castings: How to use, make, design and buy them *Glenn J. Cook.*
9. Practical Manual of Industrial Finishes on Wood, Metal and other Surfaces *B. M. Letsky.*
10. Management Development: A Survey of Practices in Calcutta *Mary Cushing Niles.*
11. Developing a Personnel Policy *Calcutta Management Association.*
12. Industrial Ceramics *Singer and Singer.*
13. Advances in Glass Technology *American Ceramic Society.*
14. Heat Treatment of Metals *Institution of metallurgists.*
15. Metalwork in Theory and Practice *G. Blackford.*
16. Modern Wood Working Machine Projects *J. Raymond Foyster.*
17. Commissioning of Electrical Plant and Associated Problems *R. C. H. Richardson.*
18. Transistor Engineering and Introduction to Integrated Semi-conductor Circuits *Alvin B. Phillips.*
19. Lead and Lead Alloys for Cable Sheathing *S. A. Hiscock.*
20. Lubrication and Friction *Peter Freeman.*
21. Physical and Engineering Properties of Cast Iron a Data Book for Engineers and Designers *Harold T. Augus.*
22. Engineering Manufacturing Methods *Gilbert S. Schaller.*
23. Cast Metals Handbook *American Foundrymen's Society.*
24. Pattern Makers Manual *American Foundrymen's Society.*
25. Manual on Industrial Water and Industrial Waste Water *ASTM Committee on Industrial Water.*
26. Social Foundations of Industrial Psychology *W. T. V. Adiseshiah.*
27. Madras State Aid to Industries act, 1922 and the rules made thereunder *Law Department.*
28. Fundamentals of Wire drawing *C. P. Bernhoeft.*
29. Physical Theory of transistors *Leopold B. Valdes.*
30. High Strength Steels *British Iron and Steel Research Association.*
31. Gear Design *W. A. Tuplin.*



NON-FERROUS FORGINGS

IN COPPER BRASS BRONZES

Proper Hot-Stamping leads to high dimensional accuracy, elimination of costly machining, superior surface finish and freedom from porosity.

Manufacturers :

NATIONAL FASTENERS PRIVATE LTD.
INDUSTRIAL ESTATE, GUINDY, MADRAS-32

Contact Sole Selling Agents
SOUTHERN ENTERPRISES
35, General Patters Road, Madras-2

LICENCES

LICENCES UNDER THE INDUSTRIES (DEVELOPMENT AND REGULATION) ACT, 1951

LIST OF INDUSTRIES IN RESPECT OF WHICH APPLICATIONS FOR LICENCES UNDER THE INDUSTRIES (DEVELOPMENT AND REGULATION) ACT, 1951, MAY ORDINARILY BE REJECTED WITHOUT REFERENCE TO THE LICENSING COMMITTEE TILL 30TH JUNE, 1964.

(A) ENGINEERING INDUSTRIES

1. Agricultural implements (excluding tractor drawn).
2. Air compressors (expansion of the existing units for compressors upto 700 cfm. will be permitted).
3. Aluminium strips/sheets/circles / sections/ foils/rods (extruded).
4. Antimony.
5. Automobile ancillaries: (only expansion or diversification in the range of the same products of the existing units will be considered).
 - i. Cylinder liners.
 - ii. Dynamos.
 - iii. Electric horns.
 - iv. Fuel injection equipment.
 - v. Gaskets
 - vi. Head/Tail and side lamp fittings.
 - vii. Inlet and exhaust valves.
 - viii. Jacks (hydraulic, mechanical and manually operated) upto 100 tons capacity.
 - ix. King pins.
 - x. Leaf springs.
 - xi. Oil seals.
 - xii. Panel instruments.
 - xiii. Piston assembly including piston rings and piston pins.
 - xiv. Push rods.
 - xv. Radiators.
 - xvi. Rocker arms.
 - xvii. Shackle pins.
 - xviii. Spark plugs.
 - xix. Starter motors.
 - xx. Tappets.
 - xxi. Thin walled bearings.
 - xxii. Valves for tyres and tubes.
 - xxiii. Valve springs.
6. Ball and roller bearings (except expansion schemes).
7. Barbed wire.
8. Bare copper conductors.
9. Bare copper strips.
10. Bicycles and bicycle parts (except expansion of bicycle tube valves by existing units).
11. Bifurcated rivets.
12. Bolts, nuts and rivets and H. T. bolts and nuts.
13. Brass/copper extruded pipes/tubes/rods/ sections and sheets circles/strips.
14. Calculating machines.

23-11-61

16. C. I. spun pipes.
17. Chaff cutter blades.
18. Cinema arc carbons.
19. Circles, sheets, rods & utensils of stainless steel.
20. Collapsible tubes and rigid containers.
21. Commercial vehicles (except expansion schemes).
22. Conductors (A.C.S.R./A.A.).
23. Conduit pipes.
24. Conveyor belting.
25. Copper-*virgin* & wire for non-electrical purposes.
26. Cotton and hair belting.
27. Crawler tractors.
28. Domestic utensils.
29. Domestic refrigerators.
30. Drawing of wire—mild as well as special steel.
31. Drop forged tools.
32. Drums and barrels and tin containers excepting those for manufacturers' own requirements.
33. Electric fans.
34. Expanded metal.
35. Ferro-manganese.
36. Ferro-silicon.
37. Flash light & torch containers.
38. Fork lift trucks and the like.
39. Heavy earth moving equipment (only shovels).
40. Household appliances such as electric irons, heaters and the like.
41. Hurricane lanterns.
42. H. T. switch-gears 33 K.V. and above.
43. Jeep type vehicles and station wagons.
44. Kerbside petrol pumps.
45. Lead-*virgin*.
46. Meters—single and polyphase.
47. Miniature lamps (except automobile head-light lamps).
48. Motor vehicles and scooters, autocycles, mopeds and three wheelers.

49. Non-ferrous alloys.
50. Non-ferrous castings (including pressure die castings).
51. Pulp and paper making plants—large and small scale, including wire-cloth for paper machinery).
52. Passenger cars.
53. Photoflash lamps.
54. Plates and sheets (M. S.) (except for main producers).
55. Railway wagons (except expansion schemes).
56. Razor blades.
57. Refrigeration plant for industrial use.*
58. Road rollers (expansion and diversification of the existing units will be considered).
59. Rolling shutters.
60. Room air-conditioners.
61. Rubber ply transmission belting.
62. Solvent extraction plant.
63. Saws of all types.
64. Stationary diesel engines below 50 HP excluding marine diesel engines (except expansion schemes).
65. Steel pipes and tubes (welded).
66. Steel doors & windows.
67. Steel sheets (black)—galvanising and corrugation of (except for main producers).
68. Steel measuring tapes.
69. Strips cold rolled (M.S. alloy steel and box strappings).
70. Steel-re-rolled products including wire rods.
71. Stranded wire.
72. Sugar machinery (except milling plant and centri-fugals).
73. Tea processing machinery.

* (Except in cases where manufacture of refrigerator compressor is envisaged in the very first stage and investment in plant and equipment is fully covered by foreign exchange participation on terms acceptable to Government).

74. Trailers (except expansion of existing units).
75. Tungsten carbide tips and intermediates there of.
76. Twist drills.
77. Vacuum cleaners.
78. V. I. R. and P. V. C. cables (except power cables).
79. Washing Machines (except industrial washing and dry cleaning machines).
80. Water coolers.
81. Water meters.
82. Welding electrodes.
83. Welded wire mesh.
84. Wire-M.S. Med/H. C. and special wire.
85. Wire nails.
86. Wire ropes (except expansion schemes).
87. Wood screws.
88. Zinc *virgin*.
89. Zinc sheets/strips.

(B) NON-ENGINEERING INDUSTRIES

1. Abrasive grains including silicon carbide.
2. Acetic acid.
3. Activated bleaching earth.
4. Alcohol—power and industrial.
5. Art silk weaving, hosiery, twisting, doubling and synthetic yarn crimping/stretching.
6. Asbestos cement sheets and pipes.
7. Azo dyes.
8. Barium carbonate.
9. Barium chloroxide.
10. Barium nitrate.
11. Barium sulphate.
12. Basic dyes.
13. Beer.
14. Beta naphthylamine.
15. B. H. C.
16. Bichromates.
17. Blanc fixe.
18. Borax and boric acid.
19. Bottles and vials (excluding penicillin vials).
20. Calcined petroleum coke.
21. Calcium carbide.
22. Calcium carbonate (precipitated and activated).
23. Camel back.
24. Camphor.
25. Carbon black.
26. Carbon dioxide gas (other than by-product carbon dioxide).
27. Carboxy methyl cellulose.
28. Cashew kernels (applications from new areas to be considered on merits).
29. Cellulose acetate flakes for moulding powder.
30. Cellulose film (cellophane).
31. Chip board (particle board).
32. Copper sulphate.
33. Cosmetics and toileteries.
34. Cotton mesh fabrics.
35. D. D. T.
36. Dissolved acetylene gas.
37. Drugs and Pharmaceuticals:
 - i. Antibiotics—penicillin, streptomycin and tetracycline.
 - ii. Anti—dysentery drugs which are quinoline derivatives).
 - iii. Bismuth salts.
 - iv. Chloral hydrate.
 - v. Cough syrup.
 - vi. Empty hard gelatine capsules.
 - vii. P. A. S. acid and salts.
 - viii. Salicylic acid—sodium salicylate, acetyl salicylic acid.
 - ix. Sulpha drugs.
 - x. Surgical adhesive tapes.
 - xi. Synthetic hormones and intermediates.
 - xii. Vitamin 'A'.
 - xiii. Vitamin 'C'.
38. East Indian Tanned (semi-tanned) kips and skins.
39. Fast colour bases.
40. Fibre board/hard board (including insulation board).

41. Fire works and paper caps.
42. Gelatine (edible, photographic and technical).
43. Glass, mineral wool and allied products.
44. Glass fibre and products thereof.
45. Glass-hollow-ware (semi-automatic).
46. Glass-table and pressed-ware.
47. Glass tubes and rods (hand-made), sheet glass, glass-bottles wired/figured and rolled glass.
48. Glazed tiles.
49. Graphite electrodes.
50. H. T./L.T. Insulators.
51. Hoses (vacuum brake).
52. Hoses (other types).
53. Hydrogen peroxide.
54. Laminates (industrial and decorative including malamine laminates).
55. Lead oxides.
56. Manganese metal and manganese dioxide.
57. Match.
58. Menthol.
59. Methanol.
60. Myrobalan extract.
61. Naphthols.
62. Newsprint.*
63. Nitric acid.
64. Organic pigments.
65. Oxygen gas (as applied for cutting and welding of steel only).
66. Paper and paper board.*
67. Pesticidal formulations (except formulations based on B. H. C., malathion, zineb and D. D. T.)
68. P. F. Moulding powder.
69. Phenol.
70. Photographic raw film and paper.
71. Phthalic anhydride.
72. Plasticisers.
73. Polystyrene.
74. Polyethylene.
75. Polyvinyl acetate.
76. Potassium chlorate.
77. Potassium permanganate.
78. Processing (excluding printing) of cotton textiles.
79. P. V. C. Resins/composition.
80. Pulp (paper and rayon grade).*
81. Rayon tyre cord yarn.
82. Reclaimed rubber.
83. Refractories.
84. Refrigeration gases.
85. Sanitaryware.
86. Soap.
87. Sodium Bicarbonate.
88. Sodium Hydrosulphite and derivatives.
89. Sodium Sulphite, bi-sulphite and sulphide.
90. Sodium Thio sulphate.
91. Sulphuric acid.
92. Sulphur black.
93. Sulphur dioxide.
94. Sulphur dyes—others.
95. Superphosphate (single and triple).
96. Synthetic detergents.
97. Synthetic rubber (S B R Type).
98. Synthetic tops.
99. Textiles made of art silk.
100. Tyres—automobile.
101. Vacuum flasks.
102. Vanaspati (except expansions of small and medium size units to achieve economic capacity).
103. Vat dyes.
104. Vegetable oil other than cotton seed oil.
105. Viscose filament yarn.
106. Wool Tops.
107. Woollen and shoddy yarn (except expansion schemes).
108. Wollen / Worsted cloth.
109. Worsted / yarn.
110. Zinc oxide.

*Applications for substantial expansion from existing units as well as applications for setting up of new units in areas, where raw material resources have remained untapped, would be considered on merits.



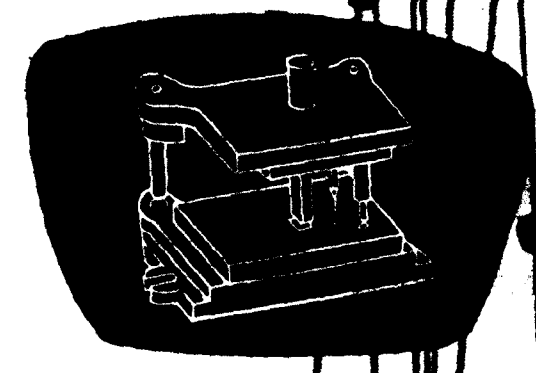
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WITH LATEST AND UPTODATE MACHINERY,
UNDERTAKES ALL TYPES OF
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HEAT TREATMENT
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FITTING

for
details
please
contact
The
Superintendent



GOVT. TOOL ROOM SERVING SHOP
INDUSTRIAL COLONY, ARIAMANGALAM, TRICHY-2.



For tooling
and Precision Work
with the help of
excellent
Equipment like

TO SERVE

Hydro-Copying

Die-Sinking

Turret Milling

Surface Grinder

Jig Boring

Cylindrical Grinder

Tool & Cutter Grinder etc.,

and for your
requirements of

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FIXTURES, GAUGES
ETC.,**



Please Contact :

The General Superintendent,

GOVERNMENT TOOL ROOM SHOP,
Industrial Estate, Guindy, Madras-32.

IMPORT TRADE CONTROL

IMPORT OF RAW MATERIALS, ACCESSORIES AND COMPONENTS

NOTIFICATION

In accordance with the Import Trade Control Policy announced for April, 1964 / March, 1965 by the Chief Controller of Imports and Exports, New Delhi, the last date for receipt of import applications complete in all respects by the Licensing Authorities is 15th August, 1964 for raw materials.

Intending actual users who have to obtain Essentiality Certificates from Madras State Directorate of Industries for import of raw materials, accessories and components should submit their applications in the prescribed form to the concerned Assistant Director of Industries and Commerce of their Districts or to the Additional Assistant Director of Industries and Commerce (North) and (South) in respect of Madras City and Administrative Officers, Guindy, Ambathur, Erode, Madurai in respect of Industrial Estates and Colonies in the State on or before 31-5-1964.

No application from Actual Users will be accepted by any of the Departmental Officers for issue of Essentiality Certificates after 5 p. m. on 31-5-1964.

Normally no representation to reconsider the orders already passed on applications will be entertained except in cases of mistake of facts. Such representations in writing for reconsideration should be submitted to the Director of Industries and Commerce, Mount Road, Madras-2 within twenty one days from the date of receipt of the orders of the Director of Industries and Commerce on the original applications.

No representation made after the time mentioned above will be considered.

(— Issued by the Director of Industries and Commerce, Mount Road, Madras-2).

OCTOBER—DECEMBER 1963

INDUSTRIAL LICENSING

ITEMS RESERVED FOR PURCHASE EXCLUSIVELY FROM SMALL SCALE SECTOR

BY THE D. G. S. & D. AS ON 17TH SEPTEMBER '63

- | | |
|---|---|
| 1. Brass padlocks. | 37. Kodali. |
| 2. G. I. padlocks. | 38. Basket cane. |
| 3. Brass dampers. | 39. Lathies. |
| 4. Boxes made of metal* | 40. Caps woollen. |
| 5. Sign board painted. | 41. Belts leather and strips. |
| 6. Button metal. | 42. Wheel barrows. |
| 7. Postal weighing scales. | 43. Tarpauline.* |
| 8. All badges, cloth embroidered and metals.* | 44. Brushes. |
| 9. Belt leather (apparel). | 45. Brooms. |
| 10. Cash bags. | 46. Steel trunks.* |
| 11. Dust shield leather. | 47. Hides and country leather of all types.* |
| 12. Chappals and sandals. | 48. Railway platform drinking water trolleys.* |
| 13. Leather boxes (not army type). | 49. Umbrellas.* |
| 14. Laces leather. | 50. Animal driven vehicles.* |
| 15. Leather bags. | 51. Skin sheep all types.* |
| 16. Boots and shoes of all types.* | 52. Hand drawn carts of all types.* |
| 17. Glass ampoules. | 53. Sole leather.* |
| 18. Handles wooden and bamboo. | 54. Leather harness.* |
| 19. Soap washing or laundry soap.* | 55. Ghamellas.* |
| 20. Metal polish. | 56. Dust bins.* |
| 21. Scissors cutting (ordinary scissors). | 57. Utensils cooking (except stainless steel
utensils and vessel pressure cookers).* |
| 22. Coir fibre and coir yarn. | 58. Bags ice head.* |
| 23. Postal lead seals. | 59. Wooden packing cases of all sizes. |
| 24. Cotton hosiery.* | 60. Lamps signal.* |
| 25. Woollen hosiery.* | 61. Gauge surgical all types.* |
| 26. Keys wooden. | 62. Patient coat and pyjamas.* |
| 27. Stone curry and stone curry roller. | 63. Dusters cotton all types (except the items
required in khadi).* |
| 28. Caps cotton.* | 64. Hair passam wool.* |
| 29. Curtain mosquito.* | 65. Nail tip heel rustless.* |
| 30. Tape cotton.* | 66. Cumblies.* |
| 31. Bandage cloth.* | 67. Leather washers.* |
| 32. Garments.* | 68. Metric weights.* |
| 33. Wicks cotton.* | 69. Tin trays.* |
| 34. Stockinette.* | 70. Teak fabricated round blocks.* |
| 35. Rags cotton.* | |
| 36. Blacksmith hearth. | |

* Civil requirements only.

LIST OF LICENCES ISSUED UNDER THE INDUSTRIES (DEVELOPMENT & REGULATION) ACT, 1951 DURING APRIL — SEPTEMBER 1963

APRIL 1963

Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Sched. Ind. No. 2 (1)—Coal, Lignite, Coke and their Derivatives		
The Raneejung Coal Association 8, Lyons Range, [Ltd., Coal Calcutta-1, Kustore, P.O. Kusunda Dist., Dhanbad, Bihar	[N U] ... Tons p.a. 2,40,000	L/2 (1) N-168/63 29-3-63
The Ondal Coal Co. Ltd., Chartered Bank Building, 4, Netaji Subhas Road, Calcutta-1 Proposed name: Sonepur Colliery (Dist. Burdwan, West Bengal)	do do ... 3,00,000	L/2 (1) N-173/63 29-3-63
Shri D. Mondal, Proprietor of D. Mondal & Co., East Badjna Colliery, P.O. Nirsachati Dist. Dhanbad (Bihar)	do [S E] ... 96,000	L/2 (1) N-169/63 29-3-63
South Parasea Collieries Private Ltd. do 25, Netaji Subhas Road, Calcutta-1 (Mouza Parasea, Talook, Jamgram Pargana Shergarh Dist. Burdwan, West Bengal)	do do ... 30,000	L/2 (1) N-170/63 29-3-63
Raj Bahadur Seth Shreeram Durgprasad, Shreeram Bhawan, Tumsar P.O. Dist. Bhandara (Maharashtra)	do do ... 1,38,000	L/2 (1) N-171/63 29-3-63
Shri Sailendra Nath Chandra Owner of East Badjna Colliery P.O., Nirshachatti, Dist. Dhanbad (Village Marma, Police Station Nirsha, Bihar)	do [C O B] ... 40,000	L/2 (1) N-172/63 29-3-63
Sched. Ind. No. 2 (2)—Mineral Oil, Motor and Aviation Sprit etc.		
Indian Oil Co. Ltd., Rashmi Carmichael Road, Bombay-26 (Calcutta, West Bengal)	Lubricating oils—[N U] ... K.L. p.a. 32,000	L/2 (2) N-11/63 3-4-63
Indian Oil Co. Ltd., Rashmi Carmichael Road, Bombay-26 (Bombay, Maharashtra)	do do ... 64,000	L/2 (2) N-12/63 3-4-63

(Contd.)

OCTOBER — DECEMBER 1963

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(Contd.)

Name and full address of the undertaking and location	Articles of manufacture ; capacity and type of licence	Licence number and date
Schd. Ind. No. 5 (1)—Equipment for Generation, Transmission etc.		
Mahindra & Mahindra Ltd., Gateway Building, Apollo Bunder, Bombay Proposed name : Mahindra Van Wijik & Visser Ltd. (Pimpri, Near Ponna, Maharashtra)	Type S.B.K. current limiting devices and cutout switches Type K.E. Automatic current and voltage regulators ... [N U]	Nos p.a. L/5 (1) 78 EEI 63 22-3-63 30,000 20,000
Schd. Ind. No. 8 (A-1)—Textile Machinery		
Marsden Spinning & Mfg Co. Ltd., Rukhial Road, Ahmedabad-10 (Ahmedabad, Gujarat)	Evercleaners for carding engines 1,000 units on the full utilisation of the plant capacity—[N A]	L/8 A-1/43 MEI 63 15-3-63
Schd. Ind. No. 8 (B-2)—Conveying Equipment		
Modi Spinning & Weaving Mills Ltd., Modinagar (Chandigarh, Punjab)	E.O.T. Cranes—[N U]	Nos. p.a. L/8 B-3/45 MEI 63 120 3-4-63
Schd. Ind. No. 19 (1)—Inorganic Heavy Chemicals		
Phillips Carbon Black Ltd., 31, Netaji Subhas Road, Calcutta (Durgapur, West Bengal)	Carbon black (Furnace type) [S E]	lbs. p.a. L/19 (1) 2 Ch. IV 63 10,000,000 30-3-63
The Western India Match Co. Ltd., Indian Mercantile Chamber, Nicol Road, P. B. No. 254, Bombay (Vedaranyam Dist, Tanjore, Madras)	Pottasium chloride Bromine and bromide ... [N A]	tons p.a. L/19 (1) NA 73/63 10,800 1,080 25-3-63
Schd. Ind. No. 19 (2)—Organic Heavy Chemicals		
Indian Organic Chemicals Ltd., 28, Apollo Street, Fort, Bombay-1 (Khopoli, Bombay, Maharashtra)	Acetic acid—[C O B]	tons p.a. L/19 (2) 15 Ch. V 63 3,000 23-3-63
Schd. Ind. No. 19 (5)—Paints, Varnishes and Enamels		
Blundell Eomite Paints Ltd., Ruston Building, Veer Nariman Rd., Fort, Bombay-1 (Bombay Maharashtra)	Paints and enamels Varnishes—[S E]	M. tons p.a. L/19 (5) 3 Ch. II 63 4,000 K litres p.a. 1,300 28-3-63
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals		
The Malwa Vanaspati & Chemical Indore City [Co Ltd., (Indore City, Madhya Pradesh)	Oxygen gas—[N A]	million cft. p.a. L/19 (14) 9 Ch. II 63 6 20-3-63
Schd. Ind. No. 22—Drugs and Pharmaceuticals		
Smith Stanistreet & Co. Ltd., 18, Convent Road, Calcutta-14 (Calcutta, West Bengal)	Diaminodiphenyl sulphone B.P.C.—[S E]	tons p.a. L/22-157 Ch. III 63 12 25-3-63
May & Baker Ltd., Bhandup, Bombay-78 (Bombay, Maharashtra)	Chloroquin sulphate—[S E]	kgs. p.a. L/22-158 Ch. III 63 12,000 28-3-63

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Name and full address of the undertaking and location	Articles of manufacture ; capacity and type of licence	Licence number and date
Smith Stanistreet & Co. Ltd., 18, Convent Road, Calcutta-14 (Calcutta, West Bengal)	Sulphostrep ... Tetraquin ... Orapen (1) ... do (2) ... do (3) —[S E]	litres p.a. L/22 159 Ch. III 63 2,400 tablets p.a. 20,40,000 5,00,000 5,00,000 10,00,000 28-3-63
Schd. Ind. No. 23 (1)—Cotton Textiles		
Aryodaya Ginning & Mfg. Co. Ltd., Asarva Road, Ahmedabad-11 (Ahmedabad, Gujarat)	Spindles for the manufacture of cotton yarn—[S E]	5,360 L/23 (1) 530 Tex B 63 28-3-63
Crown Spinning & Mfg. Co. Ltd., Sir Vithaldas Chambers, Apollo Street, Fort, Bombay (Bombay, Maharashtra)	Spindles—[S E]	3,000 L/23 (1) 531 Tex B 63 28-3-63
Phoenix Mills Ltd., State Bank Buildings, Bank Street, Fort, Bombay (Bombay, Maharashtra)	do do	19,680 L/23 (1) 532 Tex B 63 28-3-63
Bengal Luxmi Cotton Mills Ltd., Serampore, (Serampore, West Bengal)	do do	6,160 L/23 (1) 534 Tex B 63 28-3-63
Broach Textiles Mills Private Ltd., Mahatma Gandhi Road, Broach (Broach, Gujarat)	do do	6,552 L/23 (1) 536 Tex B 63 28-3-63
Kharar Textile Mills, Kharar (Near Chandigarh), (Kharar, Punjab)	Spindles for the manufacture of cotton waste yarn—[S E]	1,200 L/23 (1) 561 Tex B 63 30-3-63
Ram Krishan Kulwant Rai, National Insurance Buildings, Parliament Street, New Delhi Proposed Name : Usha Spinning & Weaving Mills, (Faridabad, Punjab)	do do	1,200 L/23 (1) 560 Tex B 63 30-3-63
Schd. Ind. No. 23 (3)—Textiles made wholly or in part of Wool, including Wool Tops, Woollen Yarns, Hosiery, Carpets and Druggets		
Oswal Cotton Spinning & Weaving Mills Ltd., Ludhiana (Ludhiana, Punjab)	Woollen worsted fabrics [S E]	power looms L/23 (3) 23 Tex D 63 21 6-4-63
Schd. Ind. No. 34 (6)—Insulators		
Shri Vasant J. Varde, C/o Charannes & Co. Private Ltd., Mercantile Chambers, Graham Road, Ballard Estate, Bombay-1 (Bombay Maharashtra)	Porcelain rods of various sizes, tubular or tubes of porcelain, rods and rectangular flats for wire-wound resistors and feed through insulators etc.—[N U]	tons p.a. L/23 (6) 90 Ch. IV 63 4,060 4-4-63
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
J. K. Commercial Corporation Ltd., Kamla Tower, P. B. No. 25, Kanpur (Uttar Pradesh)	Paper insulated power cables [N A]	miles p.a. L/5 (6) 53 LEI 63 300 28-3-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Schd. Ind. No. 9—Machine Tools		
Banerjee Chakrabarty & Co. (P) Ltd., 135, Canning Street, Calcutta-1 (West Bengal)	Sand blasting machines—[N A] Nos. p.a. 74	L/9-104 MEI 63 23-3-63
Schd. Ind. No. 11—Earth Moving Machinery		
Bhai Sunder Das Sardarsingh (P) Ltd., "Bhai House," 4/23-B, Asaf Ali Road, New Delhi-1 (Ballabgarh, Punjab)	Concrete mixers one cubic yard capacity—[N A] ... 60	Nos. p.a. L/11 (3) LEI (A) 63 1-4-63
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals		
Indian Wood Products Co. Ltd., C/o M/s. Gillanders Arbuthnot & Co. Ltd., Gillanders House, Netaji Subhas Road, Calcutta-1 (Izatnagar, Bareilly, Uttar Pradesh)	Katha extracts ... 600 Cutch extracts—[C O B] ... 1,200	tons p.a. L/19 (14) 10 Chem. II 63 27-3-63
Schd. Ind. No. 23 (3)—Textiles made wholly or in part of Wool, including Wool Tops etc.		
New Era Hindustan Woollen Mills, Industrial Area 'A', Ludhiana (Punjab)	Woollen fabrics—[S E] ... 15	power looms L/23 (3) 25 Tex (D) 63 11-4-63
Schd. Ind. No. 23 (5)—Textiles made wholly or in part of Synthetic, Artificial (man-made) Fibres, including Yarn and Hosiery of such Fibres		
Bharat Commerce & Industries Ltd., P. O. Birlagram, Nagda (Madhya Pradesh)	Staple fibre waste yarn—[S E] ... 3,500	spindles L/23 (5) 43 Tex (D) 63 11-4-63
Schd. Ind. No. 33 (6)—Miscellaneous Ware (Glass)		
Shree Durga Glass Works, P. O. Barang, Dist. Cuttack (Barang, Orissa)	Domestic glassware including pressedware, bottles, tumblers, chimneys etc.—[S E]... 10,800	tons p.a. L/33 (6) 2 Ch. II 63 26-3-63
Schd. Ind. No. 35 (2)—Asbestos Cement		
Asbestos Magnesia & Friction Materials Ltd., Ghatkopar, Bombay-77, (Ghatkopar, Bombay Maharashtra)	Asbestos textiles (yarns, packings, cloth proofed goods and lagging) ... 175 Other Misc. textiles ... 164 Jointing/Limpet sheet ... 700 Locomotive mattresses (New article) ... 145 'Ferobestos' flooring sheets (new articles) ... 100 Asbestos millboard (new article) [C.O.B., S.E., & N.A.] 500	tons p.a. L/35 (2) 1 LEI (B) 63 5-4-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date																																																																																													
Schd. Ind. No. 1-A (i)—Iron and Steel (Metals)																																																																																															
Hindustan Steel Ltd., Bhilai Steel Plant, Bhilai-1, (Madhya Pradesh)	<table> <tr> <th></th><th>thousand tons</th><th>capacity p.a. after expansion thousand tons</th></tr> <tr> <td>Pig iron (total) including cast iron to be marked</td><td>300</td><td>2,300</td></tr> <tr> <td>Steel ingots</td><td>...</td><td>2,500</td></tr> <tr> <td>Rolled products (total) including:</td><td></td><td></td></tr> <tr> <td>(i) Rail and structural mill products:</td><td></td><td></td></tr> <tr> <td>(a) Railway rails</td><td>500</td><td></td></tr> <tr> <td>(b) Heavy construction sections</td><td>250</td><td>1,950</td></tr> <tr> <td>(ii) Billets</td><td>400</td><td></td></tr> <tr> <td>(iii) 350 Merchant mill products assorted</td><td>500</td><td></td></tr> <tr> <td>(iv) Wire rods</td><td>300</td><td></td></tr> <tr> <td>Slag processing</td><td>...</td><td>250</td></tr> <tr> <td>Granulated slag</td><td>...</td><td></td></tr> <tr> <td>Slag wool</td><td>...</td><td>38</td></tr> <tr> <td>Cast slag gravel</td><td>...</td><td>412</td></tr> <tr> <td>By-Products</td><td></td><td>tons</td></tr> <tr> <td>A. Ammonium sulphate</td><td>...</td><td>32,600</td></tr> <tr> <td>B. Benzol rectification products</td><td>...</td><td>52,160</td></tr> <tr> <td>C. Tar Distillation Products</td><td></td><td></td></tr> <tr> <td></td><td>at production of oil and pitch (in tons)</td><td>at production of combustible mixture road tar, varnish etc. (in tons)</td></tr> <tr> <td>Phenolic oil</td><td>1,680</td><td>1,680</td></tr> <tr> <td>Naphthalene oil</td><td>5,950</td><td>1,200</td></tr> <tr> <td>Absorbent oil</td><td>7,000</td><td>2,400 (for needs of benzol plant)</td></tr> <tr> <td>Pressed naphthalene</td><td>3,400</td><td>3,400</td></tr> <tr> <td>Anthracene oil</td><td>18,000</td><td>—</td></tr> <tr> <td>Crude anthracene</td><td>1,670</td><td>1,670</td></tr> <tr> <td>Pitch</td><td>48,000</td><td>—</td></tr> <tr> <td>Crude phenols</td><td>1,900</td><td>1,900</td></tr> <tr> <td>Coaltar for mould coating and for preparation of refractory masses</td><td>300</td><td>300</td></tr> <tr> <td>Varnish for mould coating</td><td>200</td><td>200</td></tr> <tr> <td>Combustible mixture</td><td>—</td><td>32,500</td></tr> <tr> <td>Road tar—[S E]</td><td>—</td><td>42,850</td></tr> </table>		thousand tons	capacity p.a. after expansion thousand tons	Pig iron (total) including cast iron to be marked	300	2,300	Steel ingots	...	2,500	Rolled products (total) including:			(i) Rail and structural mill products:			(a) Railway rails	500		(b) Heavy construction sections	250	1,950	(ii) Billets	400		(iii) 350 Merchant mill products assorted	500		(iv) Wire rods	300		Slag processing	...	250	Granulated slag	...		Slag wool	...	38	Cast slag gravel	...	412	By-Products		tons	A. Ammonium sulphate	...	32,600	B. Benzol rectification products	...	52,160	C. Tar Distillation Products				at production of oil and pitch (in tons)	at production of combustible mixture road tar, varnish etc. (in tons)	Phenolic oil	1,680	1,680	Naphthalene oil	5,950	1,200	Absorbent oil	7,000	2,400 (for needs of benzol plant)	Pressed naphthalene	3,400	3,400	Anthracene oil	18,000	—	Crude anthracene	1,670	1,670	Pitch	48,000	—	Crude phenols	1,900	1,900	Coaltar for mould coating and for preparation of refractory masses	300	300	Varnish for mould coating	200	200	Combustible mixture	—	32,500	Road tar—[S E]	—	42,850	L/1A (1) N-41/63 15-4-63
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Schd. Ind. No. 7 (5)—Automobiles																																																																																															
Teksons Private Ltd., Modi Chambers, Bombay-4 (Maharashtra)	<table> <tr> <th></th><th>Nos. p.a.</th><th></th></tr> <tr> <td>Oil/Air coolers</td><td>6,000</td><td></td></tr> <tr> <td>Oil/Water coolers</td><td>1,800</td><td></td></tr> <tr> <td>Refrigerator gores</td><td>6,000</td><td></td></tr> <tr> <td>Heat converters, temperature controllers</td><td>Against specific requirements.</td><td></td></tr> </table>		Nos. p.a.		Oil/Air coolers	6,000		Oil/Water coolers	1,800		Refrigerator gores	6,000		Heat converters, temperature controllers	Against specific requirements.		L/7 (5) 38 AEI 63 17-4-63																																																																														
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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 8 (A-1)—Textile Machinery		
Indian Card Clothing Co. Private Ltd., 151, Tandep Road, Tardeo, Bombay-7 (Pimpri, Poona, Maharashtra)	Woollen, worsted, cotton waste and asbestos card clothing and raising fillets and sheets—[N A] ... 2,50,000 metres p.a.	L/8 A-1/44 MEI 62 22-3-63
Schd. Ind. No. 8 (B-2)—Conveying Equipment		
Garlic & Co. Private Ltd., Baines Road, Jacob Circle, Bombay-11, (Maharashtra)	100 cranes of all types Hand operated cranes 1 to 25 tons—span upto 70 ft. Hand operated cranes with electric hoist—5 tons with vertical lift and cross travers Electric overhead travelling cranes—10 tons span 70 ft.—[N A]	L/8 (B-2) 46 MEI 63 25-3-63
Schd. Ind. No. 9—Machine Tools		
Killick Nixon & Co. Ltd., 10-A, Indra Place Annexe, H. Block, Connaught Circus, P. O. Box 607, New Delhi (Bombay, Maharashtra)	Electric and fuel fired furnaces [N A] 20	Rs. lakhs worth p.a. L/9-106 MEI 63 4-4-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Indian Tool Manufacturers Ltd., 101, Sion Road, Sion, Bombay-22, (Bombay, Maharashtra)	Ground thread taps—[S E]... 60,000	Nos. p.a. L/12 (2) 82 MEI 63 22-3-63
Tata Engineering & Locomotive Bombay House, [Co. Ltd., 24, Bruce Street, Fort, Bombay-1, (Pimpri, Waghera, Poona Dist. (Maharashtra)	Jigs, fixtures, press tools, dies, gauges and inspection equipments worth—[N U] ... 60	Rs. lakhs p.a. L/12 (2) 83 MEI 63 23-3-63
Warrior (India) Ltd., Forces Building, Home Street, Bombay-1 (Chandiwali Estate, Kurla, Bombay, Maharashtra)	Threading taps ... 3,50,000 Threading dies—[S E] ... 1,20,000	sets p.a. Nos. p.a. L/12 (2) 85 MEI 63 5-4-63
Schd. Ind. No. 19 (4)—Synthetic Resins and Plastics		
Praga Industries (P) Ltd., P. B. No. 844, Avanashi Road, Coimbatore-4 (Madras)	Urea formaldehyde moulding powder (after substantial expansion)—[S E] ... 300	tons p.a. L/19 (4) 3 Ch. V 63 10-4-63
Schd. Ind. No. 22—Drugs and Pharmaceuticals		
Hindustan Antibiotics Ltd., Pimpri (Near Poona) (Maharashtra)	Hamycin ... 50	kg. p.a. L/22-160 Ch. III 63 11-4-63
Pfizer Private Ltd., 163, Backbay Reclamation, P. O. Box No. 10104, Bombay-1 (Maharashtra)	Protein hydrolysate—[S E] ... 74,000	L/22-161 Ch. III 63 15-4-63
Schd. Ind. No. 23 (1)—Cotton Textiles		
Shri Venkatesa Mills Ltd., Venkatesa Mills Post, Udumalpet R. S. Dist. Coimbatore (Udumalpet, Madras)	12 Automatic looms for the manufacture of cotton textiles—[S E]	L/23 (1) 140 Tex B 61 6-10-61

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Sarvaraya Textiles Ltd., Beach Road, Kakinada (Andhra Pradesh)	372 Spindles for the manufacture of cotton waste yarn—[S E]	L/23 (1) 562 Tex B 63 19-4-63
Schd. Ind. No. 23 (5)—Textiles made wholly or in part of Synthetic, Artificial (man-made) Fibres, including Yarn and Hosiery of such Fibres.		
Dhanamall Silk Mills, Dadi Mansion, 1st Floor, Behind Cinema Dhobi Talao, Bombay-1 (Gujarat)	Art silk fabrics—[S E] ... power looms 2	L/23 (5) 42 Tex D 63 17-4-63
Schd. Ind. No. 34 (6)—Insulators		
Managing Director, Bihar State Industrial Development Corporation, Sikandar Manzil, Fraser Road, Patna (Ranchi, Bihar)	High tension insulators ... 1,951 Low tension insulators—[S E] 487	tons p.a. L/34 (6) 91 Ch. IV 63 4-4-63
W. S. Insulators of India Ltd., 33, Errabalu Chetti Street, P. B. No. 300, Madras-1, (Madras, Madras)	High tension insulators of large voltage (above 22 KV) including transformer, condenser and circuit breaker bushings and ceramic condensers—[S E] ... 2,438	tons p.a. L/34 (6) 92 Ch. IV 63 17-4-63
Schd. Ind. No. 35 (1)—Portland Cement		
Sourashtra Cement & Chemical Industries Ltd., Ranavav (Gujarat)	Portland cement—[S E] ... 2,00,000	tons p.a. L/35 (1) 21 Cement 63 11-4-63
Schd. Ind. No. 2 (1)—Coal		
Indo Coal Company Ltd., P. O. Labpur, Dist. Birbhum Proposed name : Khas Kasta, Colliery (West Bengal)	Coal—[N U] ... 1,20,000	tons p.a. L/2 (1) N-174/63 20-4-63
Schd. Ind. No. 7 (4)—Railway Rolling Stock		
Escorts Ltd., Partap Buildings, Connaught Circus, New Delhi (Ferozabad Punjab)	Centre buffer couplers—[N A] 1,200	Nos. p.a. L/7 (4) 8 MEI 63 19-4-63
Schd. Ind. No. 8 (A-11)—Paper Machinery		
Indian Patent Stone Co. Ltd., Chartered Bank Building, Calcutta (Calcutta, West Bengal)	Complete water treatment plant comprising clarification, rapid gravity, pressures Rs. 60 lakhs p.a. Filtration plants, base exchange softeners, dealkalizers, deionizers dearators, iron removal filters, hot and cold lime soda plants, alum manufacturing plants, chemical equipment, paper mill and other rollers etc.—[N U]	L/9-A (11) 14 MEI 63 4-4-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	License number and date
Schd. Ind. No. 8 (C-3)—Grinding Wheels and Abrasives		
Hindustan Abrasives, Omelur, 1/754, Chabiganj, Kashmere Gate, Delhi-6 Proposed name: M/s. John Oakley & Mohan Ltd., (Omelur, Dist. Salem, Madras)	Coated abrasives such as sand paper, garnet paper, silicon carbide and aluminium oxide paper and cloth ... [C O B]	Reams p.a. L/8 (C-3) 1 LEI B 63 22-4-63
Schd. Ind. No. 9 Machine Tools		
Voltas Ltd., 19, Graham Road, Ballard Estate, Post Box H98, Bombay-1 (Thana, Maharashtra)	Guillotine shear ... Plate bending roll ... Single ended punching machines ... Punchingshear and bar cropping machine ... Power presses press brakes guillotine shear and beam bending machines of heavier types—[N U] ...	Nos. p.a. L/9-105 MEI 63 27-3-63 30 10 13 31 16
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Repetition Parts Private Ltd., Opp. Naval Dockyard Colony, Agra Road, Bhandup, Bombay-78 (Bhandup, Maharashtra)	Specific items and capacity will be determined one year after the firm goes into production Center drills (assorted sizes); Mouse taper drills sleeves (assorted sizes); angle plates; Surface plates; St. edges; Blocks; tool makers clamps; dial gauges; comparater and Depth gauges with imported dials; standard cap gauges; Standard plug gauges; standard ring gauges; End mills (assorted sizes); side and face milling cutters (assorted); Involute gear cutters (assorted); Universal machine vices; rotary files—[N A]	L/12 (2) 84 MEI 63 1-4-63
Schd. Ind. No. 15 (1)—Water Meters, Steam Meters, Electricity Meters and the like		
W. H. Brady & Co., Ltd., Brady House, 12-14, Veer Nariman Road, Post Box 26, Bombay-1 Proposed name: Brady Kent Private Ltd., (Maharashtra)	Water meters of various sizes [S E]	Nos. p.a. L/15 (1) 1/63 19-4-63 40,000
Schd. Ind. No. 15 (2)—Indicating, Recording and Regulating Devices for Pressure Temperature etc.		
Bajaj Electricals Ltd., 15/17, Victoria Road, Mazgaon, Bombay-10, Maharashtra	Electrical measuring instruments—[Shifting] ... (Shifting from Bombay to Poona, Maharashtra)	Nos. p.a. L/15 (2) 5 LFEI 63 23-4-63 18,000
Schd. Ind. No. 19 (5)—Paints, Varnishes and Enamels		
Asian Oil & Paints & Co. India Private Ltd., 25, Dalal Street, Fort, Bombay-1 (Bombay, Maharashtra)	Paints and Enamels ... Varnishes/Black—[S E] ...	M. tons p.a. L/19 (5) 4 Ch. II 60 19-4-63 7,320 litres p.a. 24,55,000

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	License number and date
Schd. Ind. No. 23 (1)—Cotton Textiles		
Tata Mills Ltd., Bombay House, Bruce Street, Fort, Bombay (Dadar, Bombay, Maharashtra)	4035 spindles for manufacture of cotton yarn (by transfer of capacity from Empress Mills, Nagpur)—[S E]	L/23 (1) 563 Tex B 63 22-4-63
Schd. Ind. No. 23 (3)—Textiles made wholly or in part of Wool, including Wool Tops, Woollen Yarn, Hosiery, Carpets and Druggets		
Supreme Woollen Mills, 424, Industrial Area, 'A' Ludhiana (Punjab)	Worsted cloth woollen ... power looms ... 6	L/23 (3) 24 Tex D 63 23-4-63
Star Woollen Mills, 424, Industrial Area 'A' Ludhiana (Punjab)	Worsted cloth—[S E] ... 9	L/23 (3) 27 Tex D 63 23-4-63
MAY 1963		
Schd. Ind. No. 2 (1)—Coal		
Katesaria Coal Co., Shree Godhore Colliery, P. O. Jharria Dist. Dhanbad (Mouza Kharkabad, P. O. Jheria, Dist. Dhanabad, Bihar)	Coal—[C O B] ...	tons p.a. L/2 (1) N-171/63 30-4-63 6,800
South Busra Coal Co., Pure Kujama Colliery, P. O. Jharria, Dist. Dhanbad (Bihar)	do do ...	48,000 L/2 (1) N-177/63 29-4-63
West Laidih Coal Co. Ltd., 3, Synagogus Street, Calcutta-1 (West Laikdih Colliery, P. O. Nirsha, Dist. Dhanbad (Bihar)	do do ...	43,000 L/2 (1) N-175/63 29-4-63
Ramjibanpur Coal Co. Private Ltd., 4, Mandeville Gardens, Calcutta-19 (Nag's Rajibanpur, Dist. Burdwan, West Bengal)	do do ...	41,000 L/2 (1) N-176/63 29-4-63
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
The Indian Aluminium Cables Ltd., Post Box No. 3019, New Delhi-3 (Punjab)	A.C.S.R. and all aluminium conductors—[S E] ...	tons p.a. L/5 (6) 64 LEEI 63 27-4-63 4,000
Schd. Ind. No. 8 (A-6)—Mining Machinery		
Garlick & Co. Private Ltd., Haines Road, Jacob Circle, Bombay-11 (Madras, Madras State)	Rotary type calyx core drilling machines—[S E] ...	Nos. p.a. L/8 A (6) 15 MEI 63 4-4-63 12
Schd. Ind. No. 8 (A-9)—Chemical Machinery		
T. Maneklal Manufacturing Co. Ltd., Vaswani Mansions, Dinshaw Vachha Road, Bombay-1 (Bombay, Maharashtra)	Vessels and plants with rubber lining only for chemical rayon and pharmaceutical industries—[N A]	Rs. lakhs worth p.a. L/8 A (9) 36 MEI 63 23-4-63 14

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OCTOBER—DECEMBER 1963

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IND-COM JOURNAL

(Contd.)

Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No 8 (B-2)—Conveying Equipment		
Shri R. T. Kirplani 40, Okhla Industrial Estate, Okhla, New Delhi Proposed name: Industrial Cranes and Fabricators Ltd (Delhi)	capacity p.a. Nos. Portable cranes ... 180 Tower cranes ... 72 Pillar jib cranes ... 360 Electric overhead cranes, gantry and goliath cranes ... 240 Winches to be fixed Structurals ... 300	L/8 (B-2) 47 MEI 63 23-4-63
Schd. Ind. No. 9—Machine Tools		
Amit Shankerlal Daxini, C/o M/s. A. Wills Rowat India) Private Ltd., P. O. Box No. 375, Kaiser-I-Hind Buildings Ballard Estate, Bombay-1 (Poona, Maharashtra)	Nos. p.a. Furnaces ... 64 Moulding machines ... 20 Oil burners ... 200 Blowers—[N U] ... 100	L/9-102 MEI 63 22-3-63
Acme Manufacturing Co. Ltd., Antop Hill, Wadala, Post Box No 7102, Bombay-31 (Maharashtra)	Shaping machines—[N A] ... 250	L/9-103 MEI 63 26-4-63
Shri P. G. Desai, C/o M/s. V.A.P. Corporation (P) Ltd., P. B. No. 6, Udhana Dist. Surat Proposed name: M/s. Hydraulic Grinders (P) Ltd., (Udhana Dist. Surat, Gujarat)	Surface grinding machines ... [N U] ... 120	L/9-101 MEI 63 1-5-63
Sen and Pandit Industries Ltd., Mercantile Building, Lal Bazaar, Calcutta-1 (Kalyani, Dist. Nadia, West Bengal)	Centre lathes—[N U] ... Nos. p.a. 288	L/9-108 MEI 63 23-4-63
Schd. Ind. No. 15 (1)—Water Meters, Steam Meters, Electricity Meters and the like		
The Indo-Swiss Synthetic General Manufacturing Co. Ltd., 11/326, Main Road, Mettupalayam, Dist. Coimbatore (Mettupalayam, Madras)	lakhs Nos. p.a. Jewel bearing for electrical meters ... 24 Jewel bearings for water meters ... 6 Jewel bearings for watches... [N U] ... 24	L/15 (1) 35 LEEI 63 1-5-63
The Motwane Manufacturing Co. Private Ltd., 127, Mahatma Gandhi Road, Fort, Bombay (Nasik Road, Maharashtra)	Avo instruments etc. (capacity as fixed in earlier licence) (for change of location from Bombay to Nasik Road, in Maharashtra State)	L/15 (1) 34 LEEI 63 23-4-63
Schd. Ind. No. 19 (1) Chemicals (other than fertilizers)		
E. I. D. Parry Ltd., Dare House, Madras-1 (Ennore, Madras)	Cryolite—[N A] ... tons p.a. 780	L/19 (1) 88 NA Ch. I 63 1-5-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
E. I. D. Parry Ltd., Dare House, Madras-1 (Tadepalli, Andhra Pradesh)	Cryolite—[N A] ... 360	L/19 (1) 88 NA Ch. I 63 1-5-63
Adarsh Chemicals & Fertilizers Ltd., Udhna Dist. Surat (Udhna, Gujarat)	Ferric alum do ... 8,250	L/19 (1) 87 NA Ch. I 63 1-5-63
Schd. Ind. No. 23 (1)—Textile (cotton)		
Shree Bhawani Cotton Mills Ltd., 3, Brabourne Road, Calcutta-1 Proposed name: Calcutta Spinning Mills Ltd. (Village Unsani, West Bengal)	1,200 spindles for manufacture of cotton waste yarn—[N U]	L/23 (1) 565 Tex B 63 26-4-63
Schd. Ind. No. 27 (1)—Canned Fruits and Fruit Products		
Khemka & Co. (Agencies) P Ltd., Speed bird House, Connaught Circus, New Delhi Proposed name: M/s. Kashmir Foods Ltd., (Jammu and Kashmir)	Jams, jellies, marmalades, fruit preserves, fruit juices, ketchup, and canned vegetable—[N U] ... 10	tons per an day L/27 (1) N-9/63 1-5-63
Schd. Ind. No. 36 (2)—Hard Board, including Fibre-Board, Chip Board and the like		
The Indian Plywood Manufacturing Co. Ltd., 9, Wallace Street, Fort, Bombay (Bhopal, Madhya Pradesh)	Particle board, like chip- boards, shaving boards, saw dust boards and other building boards ... (Shifting of part of indust- rial undertaking from Dandeli, Mysore State to Bhopal Madhya Pradesh) [Shifting]	million sq. ft. p.a. L/36 (2) 39 Ch. IV 63 11-4-63
Schd. Ind. No. 1-B (2)—Semi Manufactures and Manufactures		
Power Cables (P) Ltd., P. B. No. 4, Kalyan, Bombay, (Kalyan, Maharashtra)	Aluminium rods suitable for further manufacture of ACSR/AAC—on the basis of maximum plant utilisa- tion—[N A] ... 3,000	M. tons p.a. L/1B (2) 26/63 Met 10-5-63
The Indian Aluminium Cables Ltd., 6, Ratendore Road, New Delhi, (Ballabhgarh, Punjab)	do do ... 3,000	L/1 B (2) 27/63 Met 10-5-63
Schd. Ind. No. 8 (A-6)—Mining Machinery		
Shri Shyam Sundar Jalan, 8, Dalhousie Square East, Calcutta Proposed Name: Argent Engineers Ltd., (Howrah, Dist. West Bengal)	Coal washing plant of capacity one plant per annum—[N U] ... 500	tons per hour L/8 A-6/16/63 M E I 30-4-3

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 23 (10)—Cotton Textiles		
Arvind Mills Ltd., Railwaypura Post, Naroda Road, Ahmedabad-2, (Gujarat)	Spindles for manufacture of cotton yarn ... [S E] 3,360	L/23 (1) 567 Tex (B) 63
Abbhi Textile Mills, Fatehgarh Road, Amritsar (Poona, Himachal Pradesh)	do [N U] ... 12,000	L/23 (1) 568 Tex (B) 63 29-4-63
Schd. Ind. No. 25 (5)—Synthetic, Artificial Fibres including Yarn and Hosiery of such Fibres		
Aziz Silk & Cotton Factory, Gulam Baba Mill Compound, Station Road, Surat, (Gujarat)	Art silk fabrics—[S E] power looms 18	L/23 (5) 39 Tex (D) 63 10-5-63
Schd. Ind. No. 24 (1)—Paper, Writing, Printing and Wrapping		
Shri R. S. Rathore, Managing Director, M/s. Maharaja Shri Abhya Paper Mills Ltd., C/o Municipal Board, Sikar Proposed Name : Maharaja Shri Abhay Paper Mills Ltd. (Abu Road, Rajasthan)	Paper ... 3,000 Pulp—[N U] ... 3,000	L/24 (1) N U 78/63 Ch (1) 6-5-63
Schd. Ind. No. 1-B (2)—Semi Manufactures and Manufactures		
The Aluminium Industries Ltd., Kundara, (Kerala)	3/8" dia E. C. grade aluminium rods—[S E] ... 3,000	L/1 B (2) 25/63 Met 10-5-63
Universal Cables Ltd., U. Co Bank Building, Parliament Street, New Delhi (Satna, Madhya Pradesh)	Aluminium rods for manufacture of cables—[N A] ... 3,000	L/1 B (2) 28/63 Met 10-5-63
National Screw & Wire Products 51, Stephen House, [Ltd., 4, Dalhousie Square East Calcutta, (Belur-West Bengal)	Aluminium rods for manufacture of ACSR/AAC—[N A] 3,000	L/1 B (2) 29/63 Met 10-5-63
Schd. Ind. No. 2 (1)—Coal		
Banerji Santan's Jote Janaki Khas Colliery, P.O. Toposi, Dist. Burdwan, (Tehsil Jote Janaki, Dist. Burdwan, West Bengal)	Coal—[N U] ... 24,000	L/2 (1) N 179/63 10-5-63
Schd. Ind. No. 5 (4)—Electrical Lamps		
Union Carbide India Ltd., 1 & 3, Brabourne Road, Calcutta-1 (West Bengal)	Cinema ark carbons—[S E] ... million pairs p.a. 6	L/5 (4) 44 LEEI 63 10-5-63
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
Hindustan Transmission Products Chandivali, Kurla, Vihar Rd., [Ltd., Bombay-70 (Maharashtra)	Paper covered strips—[N A] 200	L/5 (6) 55 LEEI 63 9-5-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 7 (5)—Automobiles		
Anand Automobiles, Bombay Agra Rd., Muland, Bombay-80 Proposed Name : Victor Gaskets India Ltd., Bombay (Maharashtra)	Oil seals for automobiles... [N A] 10 lakhs	L/7 (5) 39/63 AEI 6-5-63
Usha Automobiles & Engineering Private Ltd., 14, Princes Street, Calcutta-13 (Calcutta, West Bengal)	Window channelling and weather strips for automobiles—[N A] ... 72,00,000	L/7 (5) 40/63 AEI 6-5-63
Schd. Ind. No. 19 (2)—Organic Heavy Chemicals		
Kolhapur Sugar Mills Ltd., Kasaba Bavada, P. B. No. 13, Kolhapur-3, (Kolhapur, Maharashtra)	Ethyl acetate—[N A] ... 900	L/19 (2) 16 Chem V 63 7-5-63
Schd. Ind. No. 23 (1)—Cotton Textiles		
New Shorrock Spinning & Manufacturing Co. Ltd., Asarwa Road, Ahmedabad-11, (Naidad, Gujarat)	Spindles for the manufacture of cotton yarn—[S E] ... 16,280	L/23 (1) 570/63 Tex (B) 9-5-63
Schd. Ind. No. 23 (2)—Jute, including Jute, Twine and Rope		
National Co. Ltd., P. N. B. House, 18-A, Brabourne Road, Calcutta-1 (West Bengal)	Wide hessian (carpet bucking cloth) 100 broad looms for producing—[S E] ... 10,500	L/23 (2) 53 J & C 63 17-5-63
Schd. Ind. No. 1 A (6)—Special Steel		
Shri Vithaldas H. Shah, C/o. Lallubhai Aminchand Private Ltd., 225/27, Tardeo Road, Bombay-7 (Vatva, Gujarat)	Stainless steel—[N U] ... 10,000	L/1 A (6) N 36/63 22-5-63
Schd. Ind. No. 2 (1)—Coal		
Sinidih Colliery Concerns Private Ltd., 14, Bowbazar Street, Calcutta-12 (P.O. Katrasgarh, Dist. Dhanbad, Bihar)	Coal—[COB] ... 32,233	L/2 (1) N 180/63 20-5-63
Raj Kumari Sarju Dai Devi, Nayadanga Colliery, P.O. Nirshachati, Dist. Dhanbad (P.O. Nirshachati, Dist. Dhanbad, Bihar)	do do ... 31,350	L/2 (1) N 181/63 20-5-63
Pure Selected Goluckdih Colliery Co., P.O. Jharra, Dist. Dhanbad (Bihar)	do do ... 10,800	L/2 (1) N 182/63 20-2-63
Schd. Ind. No. 5 (11)—Dry Cells		
Union Carbide India Ltd., 173, Brabourne Road, P.O. Box 2170, Calcutta-1 (West Bengal)	Carbon Electrodes for dry cells and batteries—[N A] 250	L/5 (11) 2 LEEI 63 15-5-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Graphite India Ltd., 14, Netaji Subhas Road, Calcutta-1 (Durgapur, West Bengal)	million pieces p.a. Midget electrodes for dry battery cell—[N U] ... 72	L/5 (11) 3 LEEI 63 15-5-63
B. M. Singh & Son, 1, Crooked Lane, Post Box No. 2152, Calcutta-1 (Patiala, Punjab)	do do ... 20	L/5 (11) 4 LEEI 63 16-5-63
Schd. Ind. No. 6 (4)—Radio Receivers		
Motwane Manufacturing Co. Private Ltd., 127, Mahatma Gandhi Road, Fort, Bombay-1 (Maharashtra)	Annual capacity 1. Fixed resistors (I R C) (i) Carbon composition resistors ... 10 17* (ii) Precision metal film resistors ... 0.1 0.5* (iii) Precision wire wound resistors ... 0.5 1.0* * phased programme for 4 years 2. Variable Resistors (C T S) (i) Carbon composition variable resistors 2 million (ii) Wire wound variable resistors 2,00,000 (iii) On-off switches for above—[N A] ... 1 million	L/6 (4) 50 LEEI 63 18-5-63
Schd. Ind. No. 7 (5)—Automobiles		
Wheels India Ltd., 37, Mount Road, Madras-6 (Madras)	Nos. p.a. Commercial vehicles wheels 1,20,000 Tractors wheels—[S E] ... 20,000	L/7 (5) 41/63 AEI 21-5-63
Schd. Ind. No. 10 (1)—Tractors, Harvesters and the like		
Krishi Engines Private Ltd., A-7, Unit, Industrial Estate, Sanatnagar, Hyderabad-18 (Andhra Pradesh)	Nos. p.a. Power tillers ... 3,000 Power sprayers—[N A] ... 500	L/10 (1) 12/63 AEI 21-5-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Nava Bharat Enterprises Private Ltd., Mani Minar, Dinbad Estate Off Tilk Road, Hyderabad-1 (Hyderabad, Andhra Pradesh)	Rs of lakhs worth p.a. Jigs & fixtures pressing tools moulds & dies—[N U] ... 15	L/12/2/86 MEI 63 4-5-63
Schd. Ind. No. 19 (3)—Fine Chemicals		
Tata Chemicals Ltd., Bombay House, Bruce Street, Fort, Bombay-1 (Mithapur, Gujarat)	tons p.a. Ethyl bromide—[N A] ... 36	L/19 (3) 1/63 Ch. II 13-5-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 23 (1)—Cotton Textiles		
Shree Bansidhar Private Ltd., Kankaria Road, Ahmedabad-1 (Gujarat)	yards per month Processing (bleaching, dyeing and finishing) ... 66 lakhs Printing of cotton textiles ... 5,70,333 [C O B]	L/23 (1) 571/63 Tex (B) 14-5-63
The Palar Mills Ltd., Walajabad, Chingleput, Chingleput Dist. (Madras)	Spindles for manufacture of cotton yarn—[S E] ... 6,000	L/23 (1) 572/63 Tex (B) 22-5-63
The Ajudhia Textile Mills Ltd., G.T. Road, Azad Pur, Delhi (Delhi)	do do ... 5,000	L/23 (1) 573/63 Tex (B) 22-5-63
Schd. Ind. No. 23 (2)—Jute (Textiles)		
Anglo-India Jute Mills Co. Ltd., P.O. B. No. 189, 31, Netaji Subhas Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 80 broad looms for producing—[S E] ... 8,400	tons p.a. L/23 (2) 54 J & C 63 22-5-63
Fort Gloster Industries, P.B. No. 124, 21, Strand Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 160 broad looms for producing—[S E] ... 16,800	L/23 (2) 55 J & C 63 21-5-63
Schd. Ind. No. 23 (3)—Wool including Wool Tops, Woollen Yarn, Hosiery, Carpets and Druggets		
Common Wealth Spinning & Knitting Mills Private Ltd., Industrial Area (A) Ludhiana (Ludhiana, Punjab)	Broad machine felts—[N U] ... 90,800	hgs. p.a. L/23 (3) 28 Tex (D) 63 20-5-63
Schd. Ind. No. 27 (5)—Other Processed Foods		
Sarabhai Chemicals Karam Chand Prem Chand Private Ltd., P.B. No. 31, Baroda (Wadi Wadi Baroda, Gujarat)	'Limical' (a low calory dietary food powder)—[N A] ... 18,000	hgs. p.a. L/27 (5) 3/63 Ch. II 15-5-63
Geoffery Manners & Co. Ltd., Magnet House, Dougall Road, Ballard Estate, Bombay (Maharashtra)	Calcium caseinate and its formulations ... 60 To be increased to—[N A] ... 204	M. tons p.a. L/27 (5) 4/63 Ch. II 15-5-63
Schd. Ind. No. 28 (1)—Vegetable Oils including Solvent Extracted Oils		
Shree Kanti Oil Mills, Grain Market, P.O. Box No. 138, Jamnagar (Bideshwar, Jamnagar, Gujarat)	Vegetable oil from oil cakes by solvent extraction process of oil cakes—[S E] ... 15,000	tons p.a. L/28 (1) 2/63 Chem II 7-5-63
Schd. Ind. No. 30 (4)—Other Rubber Goods		
T. Maneklal Manufacturing Co. Ltd., Vaswani Mansions, Dinshaw Vachha Road, Bombay-1 (Kurla Andheri Road, Bombay, Maharashtra)	Rubber Blankets—[N A] ... 30,000	sq. metres p.a. L/30 (4) 21/63 Chem IV 21-5-63
National Rubber Manufacture Ltd., Leslie House, 19, Chowringhee, Calcutta-13 (Near Calcutta, West Bengal)	Reclaimed rubber—[N A] ... 1,200	tons p.a. L/30 (4) 22/63 Chem IV 23-5-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
JUNE 1963		
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
Protos Engineering Co. (Pvt.) Ltd., 173, Jamshedji Tata Road, Churchgate, Bombay-1 (Chinchwad, Maharashtra)	Grey iron castings (all types) [N U]	tons p.a. 4 800 L/1 A (3) 5 EEI 63 10-5-63
Schd. Ind. No. 1-A (6)—Special Steels		
Khemchand Rajkumar, 33, Netaji Subhas Road, Calcutta-1 (Punjab)	Alloy (constructional) steels other than stainless steel... [N U]	tons p.a. 20,000 L/1 A (6) N 7/63 30-5-63
Schd. Ind. No. 2 (1)—Coal		
Manaitand Colliery Co., 14, Bentinck Street, Calcutta (Manaitand, P.O. Dhansar, Dist. Dhanbad, Bihar)	Coal—[N U]	tons p.a. 73,800 L/2 (1) N 183/63 31-5-63
Shri Biahwanath Himmat Singhka, At and P.O. Dumka, Dist. Santal Parganas, Proposed name : Harisingha Coal Pit, (Bihar)	do do ...	1,800 L/2 (1) N 184/63 31-5-63
Schd. Ind. No. 5 (1)—Electrical Equipments		
J.B. Advani—Oerlikon Electrodes Private Ltd., Radio House, 6, Rampat Row, Bombay-1 (Akurdi Village, P.O. Chinchwad, Dist. Poona, Maharashtra)	Electric arc weldig generators—same capacity as fixed earlier (for change of location from Bhandup to Akurdi Maharashtra)—[Shifting]	L/5 (1) 80 EEI 63 18-5-63
J. Stone and Co. (India) Private Ltd., 16, Taratalla Road, Calcutta-27 (West Bengal)	Pantographs for electric loco- sand electrical multiple unit stock both for A.C. and D.C. application—[NA]	units p.a. 300 L/5 1) 82 EEI 63 22 5-63
Schd. Ind. No. 5 (4)—Electrical Lamps		
S. V. Subramaniam & Sons, Post Bag No. 2, 1, Murphy Road, Ulsoor, Bangalore-8 Proposed name : M/s. Lamp Caps (India) Private Ltd., (Mysore, Mysore State)	All types of lamp caps of all ranges—[N U]	pieces p.a. 25 million L/5 (4) 45 LEEI 63 24-5-63
Schd. Ind. No. 7 (5)—Automobiles		
Bajaj Auto Ltd., 134, Dr. Annie Besant Road, Worli, Bombay-18 (Bombay, Maharashtra)	Vespa Scooters including three wheelers—[S E]	Nos. p.a. 6,000 L/7 (5) 43/63 AEI 28-5-63
Globe Auto Electricals Ltd., Green's Mansions, Gate way of India, Bombay-1 (Bombay, Maharashtra)	Regulators—[S E]	25,000 L/7 (5) 44/63 AEI 28-5-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Schd. Ind. No. 8 (B-2)—Conveying Equipment		
Shri D. D. Shah, 8/10, Tamarind Lane, Fort, Bombay-1 Proposed name : Dhiren Heavy Structures Ltd. (Ahmedabad, Gujarat)	E.O.T. Cranes capacity upto 20 tons—[N U]	Nos. p.a. 120 L/8 (B-2) 48/63 MEI 16-5-63
Schd. Ind. No. 9—Machine Tools		
Kulkarni Foundries Private Ltd., Hadaspur Industrial Estate, Poona-1 (Poona, Maharashtra)	Oil fired rotary melting furnaces and ovens ... Electric direct arc melting furnaces—[N A]	Nos. p.a. 12 L/9/110 MEI 63 16-5-63
Addison & Co. Ltd., 16-B, Mathura Road, New Delhi-14 (Madras)	Tool and cutter grinders [N A]	100 L/9/111 MEI 63 16-5-63
Delhi Iron and Steel Co. Private Ltd., Post Box No. 7, Ghaziabad, (Ghaziabad, Uttar Pradesh)	Heavy duty laths ... Planning matches ... Shaping machines ... Gear generators—[N A]	12 6 6 6 L/9/112/63 MEI 16-5-63
Damodar Enterprises Ltd., 1-A, Vansittart Row, Calcutta-1, (Damodar Iron & Steel Works), (Sheva Nagar, Dist. Burdwan, West Bengal)	Sensitive drilling machine capacity upto 1½" ... Power hammer capacity upto 150 kg. ... Radial drilling machine 6 arm capacity upto 2" ... Dec filling machine—[N A]	36 36 24 24 L/9/113/63 MEI 16-5-63
Pioneer Plastic Works (Pvt) Ltd., 9, Erza Street, Calcutta-1, Proposed Name : Scubbe India Ltd., (Chandigarh, Punjab)	Plastics injections moulding machines ... Plastic extruding machines and auxiliary equipment... [N U]	100 25 L/9/114 MEI 63 16-5-63
Ashok Brothers, 35-A, Mount Road, Guindy, Madras, (Madras—Madras State)	Wire drawing machines ... Wire stranding machines ... [N U]	10 10 L/9/115 MEI 63 16-5-63
New Standard Engineering Co. Ltd., Carroll Road, Bombay-13, Proposed Name : Hydraulic Engineering Co. (India) Ltd. (Goregon, Bombay, Maharashtra)	Hydraulic presses—[N U]	24 L/9/117 MEI 63 18-5-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Burn and Co. Ltd., 12, Mission Row, Calcutta (Howrah, West Bengal)	Tool bits (upto 1" square) ... Butt welded tools (upto 1½")... [N A]	Nos. p.a. 50,000 50,000 L/12/2/87 MEI 63 18-5-63
Killick Industries Ltd., Killick House, Home Street, Bombay-1 (Bombay, Maharashtra)	Engineer's steel files—[S E]...	dozens p.a. 96,000 L/12 (2) 88/63 MEI 18-5-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Killick Industries Ltd., Killick House, Home Street, Bombay-1 (Bombay, Maharashtra)	Planning irons 12,000 dozens equivalent to [N A]	tons p.a. 20 L/12/2/69 MEI 63 18-5-63
Schd. Ind. No. 19 (1)—Inorganic Heavy Chemicals		
Jeevan Jyot Chemicals Private Ltd., Mustafa Building, Sir P.M. Road, Bombay-1 (Thana, Maharashtra)	Blank fixe Barium carbonate Barium chloride Barium nitrate Sodium sulphide—[C O B]	Capacity p.a. tons L/19 (1) 89 COB Ch. 1/63 20-5-63 2,400 1,200 1,200 600 3,600
Schd. Ind. No. 19 (3)—Fine Chemicals		
S. H. Kekar & Co Private Ltd., Bombay Agra Road, Mulund, Bombay-80 (Mulund, Maharashtra)	Lavendinal Vetasetone Isobornyl acetate—[N A]	M. tons p.a. L/19 (3) 2/63 Ch. II 27-5-63 60 24 24
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals		
The Asiatic Oxygen and Acetylene Co. Ltd., 8, Dalhousie Square East, Calcutta-1 (Shibpore, Howrah, West Bengal)	Nitrogen gas—[S E]	m. cu. ft. p.a. L/19 (14) 13/63 Chem II 18-5-63 155-52
Swaika Oil Mills, P.N.B. House, 18-B, Brabourne Road, Calcutta-1 (Liluah, Howrah, West Bengal)	Metallic stearates Sodium Sulphate—[N A]	tons p.a. L/19 (14) 14/63 Chem II 18-5-63 100 200
The Maharashtra Sugar Mills Ltd., Industrial Assurance Building, Churchgate, Bombay-1 (Tilaknagar, Maharashtra)	Carbon dioxide—[N A]	tons p.a. L/19 (14) 11/63 Chem II 20-5-63 1,008
K. T. Steel Industries Private Ltd., K. T. Building, Broach Street, Dana Bunder, Bombay-9 (Sewree, Bombay, Maharashtra)	Oxygen gas dissolved Acetylene gas—[S E]	cub. ft. p.a. L/19 (14) 12/63 Ch. II 17-5-63 30 million 6 do
Schd. Ind. No. 23 (1)—Cotton Textiles		
Delhi Cloth & General Mills Co. Ltd., Bara Hindu Rao, Delhi-6 Swatantra Bharat Mills) New Delhi	Spindles for the manufacture of cotton waste yarn (upto 4 counts)—[S E]	L/23 (1) 574/63 Tex (B) 29-5-63 1,176
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute (including Jute, Twine and Rope)		
The Gourepore Co. Ltd., 2, Fairlie Place, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 56 broad looms for producing—[S E]	tons p.a. L/23 (2) 58 J & C 63 24-5-63 5,880
Shree Gouri Shankar Jute Mills Private Ltd., 18, Clive Row, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 53 broad looms for producing—[S E]	L/23 (2) 59 J & C 63 24-5-63 5,565

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
The Megna Mills Co. Ltd., 16, Strand Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 100 broad looms for producing—[S E]	tons p.a. 10,500 L/23 (2) 60 J & C 63 28-5-63
Naffar Chandra Jute Mills Ltd., 26, Strand Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 25 broad looms for producing—[S E]	tons p.a. 2,625 L/23 (2) 57 J & C 63 28-5-63
Schd. Ind. No. 235 (1)—Portland Cement		
North Gujarat Cement Manufacturing Co-operative Society Ltd., Congress Bhavan, Mohsana (Shri Amirgarh tehsil, Banaskantha Dist. Gujarat)	Portland cement—[N U]	tons p.a. 2,00,000 L/35 (1) 22/63 Cement 31-5-63
Schd. Ind. No. 37—Arms and Ammunitions		
Director of Industries, Punjab Chandigarh, Proposed name : M/s. Punjab State Air Rifles Ltd., (Chandigarh, Punjab)	Air rifles and shots (Daisy 99 target special B.B. rifle with 50 shot automatic feed 236½" long shot point 177 calibre)—[N U]	Nos. p.a. L/37 (1) LEI (B) 63 27-5-63 1,80,000
Schd. Ind. No. 5 (1)—Electrical Equipment		
The Cochin Malleables (Pvt.) Ltd., Trichur-4 (Kerala)	Fittings of malleable iron and steel (Galvanised) for H.T. Insulators Discs (after effecting substantial expansion)—[S E]	sets p.a. L/5 (1) 2 LEEI 63 24-5-63 3,60,000
Beesee Corporation (Private) Ltd., 25, Factory Area, Patiala (Patiala, Punjab)	Distribution transformers up- to 750 KVA and 11 KVA [N U]	50,000 KVA L/5 (1) 81 EEI 63 21-5-63
Schd. Ind. No. 7 (5)—Automobiles		
Super Seals India Private Ltd., 5, Scindia House, New Delhi (Punjab)	Hydraulic rubber brake hose [N A]	metres p.a. L/7 (5) 42 AEI 63 21-5-63 2,92,610
Schd. Ind. No. 8 A (1)—Textile Machinery		
Industrial Machinery Manufacturers (Private) Ltd., Rohit Mills Compound, Khokhra Mohmedabad, Ahmedabad-8 (Ahmedabad, Gujarat)	Open air creel—[N A]	sets p.a. L/8 A-1 46 MEI 63 18-5-63 480
Schd. Ind. No. 8 (B-4)—Mixers and Reactors		
J. K. Iron & Steel Co. Ltd., Kamla Tower, Kanpur, (Kanpur, Uttar Pradesh)	Brick & Block making machinery Khandasari plant—[N A]	Nos. p.a. L/8 B-4/1 MEI 63 16-5-63 300 12

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Rs. lakhs p. a.	Licence number and date
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like			
Shri Ram Partap, 31, Rajpur Road, Civil Lines, Delhi-6 Proposed name: M/s. Aress Manufacturing Co. (Private) Ltd. (Bahadurgarh, Dist. Gurgaon, Punjab)	Jigs and fixtures, pressing tools, moulds and dies: worth—[N U] ...	26	L/12 (2) 90 MEI 63 28-5-63
Schd. Ind. No. 13 (3)—Air Conditioners and Refrigerators			
Pandit Kanahya Lal Punj, Punj House, M-13, Connaught Circus, New Delhi-1 Proposed name: M/s. Lloyd Industries Private Ltd., (Chandigarh, Punjab)	30,000 Nos. each p.a. Rotor & Stator of hermetic refrigeration compressors ... Thermostats and controls ... Expansion valves ... Switches ... Overloads and relays—[N U] ...	...	L/13 (3) 2 LEI (B) 63 29-5-63
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals			
Shri D. N. Dhandke, 1, Grosvenor House, Pedder Road, Bombay-26 Proposed name: Southern Gas Ltd., (Alwaye Tehsil, Dist. Ernakulam, Kerala)	Oxygen ... Dissolved acetylene—[N U] ...	M. cu. ft. p.a. 60 12	L/19 (14) 15 Chem. II 63 28-5-63
Schd. Ind. No. 22—Drugs and Pharmaceuticals			
Atul Products Ltd., Post Atul, Dist. Surat (Gujarat)	Acetomenaphthone—[S E] ...	kgs. p.a. 150	L/22/162 Ch. III 63 30-5-63
Ciba of India Ltd., Royal Insurance Building, 14, J. Tata Road, P.O. Box 1123, Bombay-1 (Maharashtra)	Crude quinone ... Antrenyl ... Ismelin ... Navidix—[S E] ...	1,200 156 252 5	L/22/163 Ch. III 63 31-5-63
Schd. Ind. No. 23 (1)—Cotton Textiles			
Associated Industries (Assam) Ltd., 18, Netaji Subhas Road, Calcutta-1 (Chandrapur, Dist. Kamrup, Assam)	Plain looms for the manufacture of cotton cloth—[S E] ...	250	L/23 (1) 575 Tex B 63 4-6-63
Digvijay Spinning & Weaving Co. Ltd., Lalbag, Parel, Bombay (Maharashtra)	Spindles for the manufacture of cotton yarn—[S E] ...	4,368	L/23 (1) 576 Tex B 63 1-6-63
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute, including Jute, Twine and Rope			
The General Industrial Society Ltd., Calcutta, (West Bengal)	Wide hessian (carpet backing cloth) 114 broad looms for producing—[S E] ...	tons p.a. 11,400	L/23 (2) 56 J & C 63 28-5-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	tons p.a.	Licence number and date
Schd. Ind. No. 28 (1)—Vegetable Oils including Solvent Extracted Oils			
Hilla Tea Estates & Industries Ltd., 23, Camac Street, Calcutta-16 (Khandwa, Madhya Pradesh)	Cotton seed oil in terms of cotton seed—[N U] ...	20,000	L/28 (1) 3 Chem. II 63 13-5-63
Schd. Ind. No. 30 (1)—Tyres and Tubes			
National Rubber Manufacturers Ltd., Lealie House, 19, Chowringhee, Calcutta-13 (Calcutta West Bengal)	Bicycle tyres—[S E] ...	Nos. p.a. 16,00,000	L/30 (1) 5 Chem. IV 63 29-5-63
Schd. Ind. No. 30 (2)—Surgical and Medical Products including Prophylactics			
L. D. Seymour & Co. (India) Private Ltd., 331-333, Thambu Chetty Street, Madras-1 Proposed name: M/s. London Rubber Co. (India) Private Ltd., (Chingleput, Madras)	Rubber contraceptives [N U] ...	Nos. p.a. 3,74,40,000	L/30 (2) 23 Chem. IV 63 31-5-63
Schd. Ind. No. 5 (1)—Electrical Equipment			
Airflow Transport (India) Private Ltd., 26/28 S T. Mark's Road, Post Box No. 92, Bangalore-1 (Bangalore, Mysore)	Coolant type sheet metal radiator for transformers 3.5 million KVA transformers approximately—[N U] ...	sections p.a. 1,40,000	L/5 (1) 83 ERI 63 17-6-63
Schd. Ind. No. 9—Machine Tools			
K. T. Steel Industries (Private) Ltd., Broach Street, Opposite Victoria Docks, P.B. No. 5052, Bombay (Maharashtra)	Capacity to be determined one year after the firm goes into production (i) Oxy-acetylene cutting and welding equipment and accessories (ii) Acetylene generators and accessories (iii) Porous mass for acetylene generators (iv) Pressure gauges—[S E]		L/9/109 MEI 63 6-5-63
Schd. Ind. No. 19 (1)—Inorganic Heavy Chemicals			
Golden Chemicals (Private) Ltd., 156, Ghodbunder Road, Vile Parle, Bombay-56 (Maharashtra)	Sodium bichromates and potassium bichromate [S E] ...	tons p.a. 2,200	L/19 (1) 90 S E Ch. I 63 1-6-63
Schd. Ind. No. 23 (1)—Cotton Textiles			
Sree Padma Mills, Kalappatti P.O., Coimbatore-6 (Madras)	Spindles for the manufacture of cotton yarn—[S E] ...	10,592	L/23 (1) 577 Tex B 63 31-5-63
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute, including Jute, Twine and Rope			
Juggilalkamlapat Jute Mills Co. Ltd., Kamla tower, Kanpur, (Uttar Pradesh)	Wide hessian carpet backing cloth, 30 broad looms for producing—[S E] ...	tons p.a. 3,150	L/23 (2) 61 J & C 63 13-6-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Schd. Ind. No. 1 A (7)—Iron, Steel Casting and Forgings		
The Vijay Engineering Co. Ltd., Das Chambers, Dalal Street, Bombay-1 (Howrah, West Bengal)	Shots and grates—[S E] ... 1,200 tons p.a.	L/1 A (3) 90 EI (M) 63 12-6-63
Schd. Ind. No. 1 A (7)—Other Products of Iron and Steel		
Abdul Aziz, Abdul Kadar, President, Fort, Taluka Congress Committee, (Mandal No. 1, Tulloch Road, Appollo Bunder, Bombay-1 Proposed name: M/s. Maharashtra ferrous Industries, Bombay (Thana, Bombay, Maharashtra)	Heavy structurals—[N U] ... 5,000 tons p.a.	L/1 A (7) 74 EI (M) 63 24-6-63
Schd. Ind. No. 2 (1)—Coal		
National Coal Development Corporation Ltd., Darbhanga House, Ranchi, Proposed name: Singrauli Colliery, (P.O. Waidan, Dist. Sidhi, Madhya Pradesh)	Coal [N U] ... 3.05 million tons p.a.	L/2 (1) N 186/63 25-6-63
National Coal Development Corporation Ltd., Darbhanga House, Ranchi, Proposed name: Bijuri Colliery, (Tehsil, Sohagpur, Dist. Sahdol, Madhya Pradesh)	do do ... 0.36	L/2 (1) N 187/63 25-6-63
Shri Gajadhar Lodha, Central Tentulia Coal Co., P.O. and T.O. Katrasgarh, Dist. Dhanbad (Katrasgarh Dist. Bihar)	do [C O B] ... 30,000	L/2 (1) N 188/63 25-6-63
P. Chanchani & Co. Private Ltd., P.O. Siduli, Dist. Dhanbad, (at East Sinidih Colliery, P.O. Tundu, Dist. Dhanbad) (Dhanbad, Bihar)	do do ... 16,000	L/2 (1) N 189/63 25-6-63
National Coal Development Corporation Ltd., Darbhanga House, Ranchi Proposed name: Sonawani Colliery, (Tehsil, Mahendragarh, Dist. Surguja, Madhya Pradesh)	do [N U] ... 0.56	L/2 (1) N 190/63 25-6-63
Schd. Ind. No. 5 (1)—Electrical Equipment		
Automatic Electric Private Ltd., Rectifier House, 570, Naigaum Cross Road, (East) P.O. Box 7103, Bombay-31 (Bombay, Maharashtra)	Silicon diodes and allied devices C-cores-torodial. The capacity would be assessed when the plant goes into production—[N A]	L/5 (1) 3 LEEI 63 24-6-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Schd. Ind. No. 5 (3)—Electrical Fans		
S. F. Products India Ltd., 2-A, St. George Terrace, Hastings, Calcutta-22 (Maheshtola, 24, Parganas, West Bengal)	Industrial propeller fans and blowers for low, medium and high pressure and accessories—[N U] ... 1,500 pieces p.a.	L/5 (3) 11 EEI 63 25-6-63
Schd. Ind. No. 5 (8)—Electronic Equipment		
Maharaja Kumar Pradeep Chandra Bhanj Deo, Mayurbhanj House, No. 3, Rainey Park, Calcutta-19 Proposed name: Molecular Electronics Private Ltd., (Durgapur, West Bengal)	Ferrite materials hard fer- rites and soft ferrites ... 180 [N U]	tons p.a. L/5 (8) 11 LEEI 63 19-6-63
Schd. Ind. No. 6 (1)—Telephones		
Delton Cable Co., 3455/3457, Delhi Gate Post Box No. 1179, Delhi-6 (Delhi)	4 way P V C insulated/sheath- ed coil cord ... 2 way P V C insulated/sheath- ed straight cord—[N A] ... 2.2	million core yards p.a. L/6 (1) 2 LEEI 63 25-6-63
Schd. Ind. No. 8 (A-1)—Textile Machinery		
Marsden Spinning & Manufacturing Co. Ltd., Rakhial Road, Ahmedabad-1 (Ahmedabad, Gujarat)	Fiber meter (fiber blending machinery, blow room machinery—[N A] ... 20	Nos. p.a. L/8 A 1 47 MEI 63 22-6-63
Schd. Ind. No. 8 (A-2)—Jute Machinery		
Reed & Comb Manufacturing Co. Private Ltd., 138, Canning Street, Calcutta-1 (Calcutta, West Bengal)	Broad looms (168" and 210" R. S. for jute industry) ... [N A]	Nos. p.a. L/8 A 2/7 MEI 63 22-6-63
Duncan Bros. & Co. Ltd., 31, Netaji Subhas Road, Calcutta-1 Proposed name: Giddings & Lewis-Fraser India Ltd., 24, Parganas (West Bengal)	Short fibre feeder ... 36 Sliver dispersal units ... 120 Softener feeder ... 24 Softener—[N U] ... 48	L/8 A 2/8 MEI 63 22-6-63
Schd. Ind. No. 8 (A-6)—Mining Machinery		
Voltas Ltd., 19, Graham Road, Bombay-1 (Maharashtra)	Diamond core drills 22 H D Diamond core drills model 45 Mines fans size 36" ... Spares of above items—[S E]	Nos. p.a. L/8 A 6/17 MEI 63 22-6-63 Rs. of lakhs worth p.a. 10
Schd. Ind. No. 8 (B-2)—Conveying Equipment		
Kamani Bros Private Ltd., Kamani Chambers, Nicol Road, Ballard Estate, Bombay-1 Proposed name: Eastern Engineering Corporation Ltd., (Bihar)	Ropeway structures, buckets, cranes, conveyors, medium heavy structures—[N U] ... 12,000	tons p.a. L/8 B 2/49 MEI 63 22-6-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Gujarat Industrial Trucks Private Ltd., India House, Fort, Bombay-1 (Udhana-Chauryasi, Dist. Surat, Gujarat)	Industrial trucks (land operated only) and industrial trolleys—[N U] ... 650	Nos. p.a. L/8 B 2/51 MEI 63 22-6-63
Schd. Ind. No. 8 (B-3)—Size Separation Units		
Deepak Industries Ltd., 62, Hazra Road, Calcutta-19 (Calcutta, West Bengal)	Mechanical lever or spring and electro magnetic operated clutches centrifugal clutches—[N A] ... 15	Rs. of lakhs L/8 B 3/4 MEI 63 19-6-63
Adarsha Engineering (Private) Ltd., Shrirampur, P.B. No. 44, Dist. Ahmednagar, Proposed name: Adarsha Engineers Private Ltd., (Chinchwad, Tehsil Naveli, Dist. Poona, Maharashtra)	Flexible couplings spindle, pin and cloud type shaft couplings, rigid, sleeves and compress type—[N U] 1,08,000	Nos. p.a. L/8 B 3/5 MEI 63 22-6-63
Schd. Ind. No. 8 (B-11)—Power Driven Pumps		
Johnston Pumps India Ltd., 2, Fairlie Place Calcutta-1 (Calcutta, West Bengal)	Johnston submersible pumps Johnston vertical propeller pumps Johnston vertical mixed flow pumps Johnston vertical pumps—[N U] 720	Nos. p.a. L/8 B 11/2 MEI 63 25-6-63
Schd. Ind. No. 9—Machine Tools		
Voltas Ltd., 19, Graham Road, Ballard Estate, P.B. No. 1198, Bombay-1 (Maharashtra)	Hydraulic equipment - [N A] 50	lakhs of Rs. L/9/107 MEI 63 21-6-63
New Bemco Engineering Products Private Ltd., Udyamgaon Industrial Estate, Khanapur Road, P.O. Udyamgaon, Belgaum (Mysore)	do do do 30	L/9/119 MEI 63 28-5-63
Precimax Machine Tool Corporation, 5, Stadium House, 81/83, Veer Nariman Road, Bombay-1 (Village Monji, Dattapara Road, Borvli, Bombay, Maharashtra)	Universal machine tools ... 150 Bench lathes ... 150 Variable speed drive units... 250 [N U]	Nos. p.a. L/9/121 MEI 63 15-6-63
Cooper Engineering Ltd., Chinchwad, Dist. Poona, (Maharashtra)	Shaping machines—[S E] ... 200	L/9/122 MEI 63 15-6-63
Wellman Incandescent India Ltd., 8, Harrington Street, Calcutta-16 (Calcutta, West Bengal)	Industrial furnaces worth ... 1 [N U]	crores of Rs. L/9/123 MEI 63 21-6-63
Pratap Steel Rolling Mills, Pratap Estates, Chheharta (Punjab)	Furnaces oil burners capacity will be determined after the unit commence production—[N A]	L/9/124 MEI 63 21-6-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Blue Star Engineering Co. (Bombay) Private Ltd., P.B. 10042, Sukhsagar, Sandhurst Bridge, Bombay-7 (Maharashtra)	Hardness tester ... 250 Impact tester ... 100 Universal testing machines [N U] 25	Nos. p.a. L/9/125 MEI 63 21-6-63
Schd. Ind. No. 12 (1)—Plastic Moulded Goods		
Swadeshi Mills Co. Ltd., Bombay House, Bruce Street, Fort, Bombay (Kurla, Greater Bombay, Maharashtra)	Laminated plastics (special water and acid proof packaging material for textile and other goods, with paper, cloth and metallic foils as base materials) ... 2,40,00,000 [N A]	metres p.a. L/12/1 Ch. V 63 22-6-63
Swastik Rubber Products Ltd., Swastik House, Behind Kirkee Railway Station, Poona-3 (Kirkee, Poona, Maharashtra)	Item Machine capacity aggregated capacity Plastic tubings and extrusions Injection moulding (one machine) 6 to 8 Extrusions (two machines) 150 mm [N A]	L/12/1/15 Ch. V 63 22-6-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Lekhraj Manoharlal Agrawal, 151, Asoka House, Narayan Dhuru Street, Bombay-3 (Bombay, Maharashtra)	Industrial machine knives (excluding wood working band saws) ... 400 Miscellaneous tools—[N U] 10,000	tons p.a. L/12/2/91 MEI 63 15-6-63
Hakimrai Jaichand, United Bank of India Building, 6th Floor, Sir P.M. Road, Fort, Bombay-1 (Bombay-Maharashtra)	Engineers' steel files including rasps and precision files—[S E] ... 60,000	Nos. p.a. L/12-2/92 MEI 63 20-6-63

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PHARMACEUTICALS

AMRUTANJAN

FOR ALL ACHES & PAINS

Messrs. AMRUTANJAN LTD.,

Nos. 14 & 15, Luz Church Road, MADRAS - 4

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 13 (3)—Air Conditioners and Refrigerators		
Voltas Ltd., 19, Graham Road, Ballard Estate, Post Box 1198, Bombay-1 (Bombay Maharashtra)	Basic Equipments: A. <i>Winds-type room air conditioners</i> 1 H.P., 1½ H.P. and 2 H.P. units 8,350 to 15,100 B. <i>Self contained packaged units</i> 3 H.P., 5 H.P. and 7.5 H.P. 350 to 500 C. <i>Hermetic compressors</i> High speed model for use with unitary equipment and commercial refrigeration 1 H.P. to 7½ H.P.—12,000 to 21,000 D. <i>Central plants</i> (1) Carrier high-line compressors 7½ to 60 H.P.—210 to 420 60 H.P. to 125 H.P.—40 to 80 (2) <i>Accessories to</i> Match the above compressors (water chiller plants, low side fan coil equipment, water and air cooled condensers, etc. To match the compressors manufactured as above)—[S. E. for the manufacture of N. A.]	L/13/3/1 LEI (B) 63 28-5-63
Schd. Ind. No. 19 (2)—Organic Heavy Chemicals		
Camphor & Allied Products Ltd., Jehangir Building, 133, Mahatma Gandhi Road, Bombay-1 (Bareilly, Uttar Pradesh)	Formic acid—capacity to be fixed later—[N A]	L/19/2/16 Chem II 63 26-6-63
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals		
The Fertilizers & Chemicals (Travancore) Ltd., Eloor, P.O. Udyogamandal, Kerala (Udyogamandal, Kerala)	Dry ice—[N A] ...	tons p.a. 1,800 L/19/14/17 Chem. II 63 14-6-63
Schd. Ind. No. 23 (1)—Cotton Textiles		
Lucknow Textiles, C/o M/s. Automobile Financing Corporation, Halwasiya Court, Hasrat Ganj, Lucknow (Lucknow, Uttar Pradesh)	Spindles for the manufacture of cotton waste yarn—[N U]	1,200 L/23 (1) 578 Tex B 63 19-6-63
V.M. Salgaocar Eirmao Ltd., Vascoda Gama, Goa, Proposed name : Salgaocar Industries Textiles Ltd., (Mormugao, Goa)	Spindles for the manufacture of cotton yarn—[N U] ...	25,000 L/23/1/584 Tex B 63 25-6-63
Schd. Ind. No. 28 (1)—Vegetable Oils including Solvent Extracted Oils		
Shri P. V. Devassy, Pokkath House, South Bazar Road, Irinjalakuda, (Irinjalakuda, Kerala)	Vegetable oil from oil cakes by solvent extraction process—[N U]	tons p.a. 7,500 L/28/1/4 Chem. II 63 14-6-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 28 (2)—Vanaspatti		
Delhi Cloth & General Mills Co. Ltd., Bara Hindu Rao, Delhi (Najafgarh Road, Delhi)	Vanaspatti—[S E] ... by shifting and existing plant from Kathiawar Industries Ltd., Junagarh (Gujarat) to Delhi. [S. E. by Shifting]	tons per day 180 L/28/2 N 20/63 26-6-63
Schd. Ind. No. 34 (6)—Insulators		
Gujarat Insulators & Ceramics Ltd., Hill View, Ridge Road, Malabar Hills, Bombay-6 (Ahmedabad, Gujarat)	High tension insulators ... Low tension insulators—[N U]	tons p.a. 1,950 490 L/34 (6) 93 Chem. IV 63 22-6-63
JULY 1963		
Schd. Ind. No. 2 (1)—Coal Lignite, Coke and their Derivatives		
National Coal Development Corporation Ltd., Dharbhanga House Ranchi, (Proposed name : Sudamdih Colliery) (Dhanbad, Bihar)	Coal—[N U] ...	million tons p.a. 2.16 L/2/1 N 191/63 29-6-63
Diamond Angarpathra Colliery Co., P.O. Katrasgarh, Dist. Dhanbad Bihar (Dhanbad, Bihar)	do —[C O B] ...	tons p.a. 13,000 L/2/1 N 192/63 29-6-63
Bhowra Kankanee Collieries Ltd., 25, Brabourne Road, Calcutta-1 (Amlabad Colliery, Dist. Dhanbad, Bihar)	do —[S E] ...	60,000 L/2/1 N 193/63 5-7-63
Shri Biswa Nath Agarwalla, M/s. Surindra East Loyabad Colliery Co., P.O. Kusunda, Dist. Dhanbad (P.O. Kusunda, Dist. Dhanbad, Bihar)	do [C O B] ...	28,000 L/2/1 N 194/63 5-7-63
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
Shamshir Sterling Cable Corporation Ltd., Vaswani Mansions, Dinsha Wacha Road, Bombay-1 (Maharashtra)	ACSR and AA conductors (on two shift)—[N A] ...	2,400 L/5/6/57 LEEI 63 26-6-63
Schd. Ind. No. 8-B (2)—Conveying Equipment		
National Engineering Works, 25, Dalal Street, Fort, Bombay-1 (Maharashtra)	Conveyors ... E. O. T. Cranes ... Chemical Vessels and Tanks [N A]	Rs. lakhs p.a. 12 Nos. p.a. 48 tons p.a. 600 L/8 B 2/50 MEI 63 22-6-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 16—Scientific Instruments		
Shri R.K. Singh, Engineer Manager, Government Precision Instruments, Factory, Lucknow (Lucknow, Uttar Pradesh)	Microscopes, pathological research and special varie- ties like binoculars etc. ... Stereo-corneal, workshop & tool maker's microscopes [N A]	Nos. p.a. L/16/1 LEI (A) 63 11-6-63 1,500 1,500
Schd. Ind. No. 23 (1)—Cotton Textiles		
Deccan Co-operative Spinning Mills Ltd., Ichalkaranji Dist. Kolhapur (Maharashtra)	Cotton yarn—[S E]	spindles L/23/1/583 Tex B 63 12,000 25-6-63
Vishnu Narayan Naik, Margoa—Goa Proposed name : "The Goa Textile Mills" (Margoa, Goa)	Cotton yarn—[N U]	12,000 L/23/1/585 Tex B 63 29-6-63
M. M. A. Rasiwalla & Co., 17, Janjirkar Street, Hussainbhai Building, Mandvi—Kaliwada, Bombay-3 (Gujarat)	Cotton ropes ... 1,80,000 Threads ... 60,000 Cotton and nylon fishing twines ... 3,60,000 Jute ropes ... 21,000 (on single shift)—[CO B]	kg. p.a. L/23/1/581 Tex B 63 25-6-63 Double shift
Bhalakia Mills Co. Ltd., Khokhra Mehmedabad Road, Ahmedabad-8 (Ahmedabad, Gujarat)	Spindles for the manufacture of cotton yarn—[S E]	1,760 L/23/1/579 Tex B 63 25-6-63
Mysore Spinning & Manufacturing Co Ltd., 70, Forbes Street, Fort, Bombay-1 (Maharashtra)	do do	6,400 L/23/1/580 Tex B 63 25-6-63
Modern Mills Ltd., Temple Bar Building, 70, Forbes Street, Fort, Bombay-1 (Maharashtra)	do do	6,160 L/23/1/582 Tex B 63 25-6-63
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute, including Jute, Twine and Rope		
Hooghly Mills Co. Ltd., Post Box No. 2280, 10, Clive Row, Calcutta-1 (West Bengal)	Wide hessian (carpet back- ing cloth)—102 broad looms for producing—[S E]	tons p.a. L/23/2/64 J & C 63 6-7-63 10,710
Schd. Ind. No. 23 (3)—Woollen Textiles		
Raymond Woollen Mills Ltd., Pokharan Road, P.O. Jekegram, Thana, Maharashtra Proposed name : "M/s. Baijnath Bankey Beharilal Woollen Mills." (Kanpur, Uttar Pradesh)	Woollen yarn—[C.O.B.]	lbs. L/23/3/29 Tex D 63 12,000 27-6-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 23 (5)—Synthetic Artificial and Man-Made Fibres		
The Delhi Cloth & General Mills - Co. Ltd., Bare Hindu Road, Delhi-6 P. B. No. 1039, (Delhi)	Pure silk fabrics per day per shift—[S E] ...	power looms L/23/5/53 Tex D 63 26-6-63 20
The Narasimha Mills (Private) Ltd., Kannampalayam, Sulur P.O., Coimbatore-1 (Coimbatore, Madras)	Staple fibre yarn spindles after effecting expansion—[S E]	12,000 L/23/5/52 Tex D 63 26-6-63
The Suguna Mills (Private) Ltd., Bashyakaralu Road, R. S. Puram P.O., Coimbatore-2 (Madras)	do do	do L/23/5/49 Tex D 63 26-6-63
Essorpe Mills Private Ltd., Periaswamy Road, R.S. Puram, Coimbatore (Madras)	do do	do L/23/5/46 Tex D 63 26-6-63
Rajalakshmi Mills Ltd., Singanallur Post, Coimbatore-5. (Coimbatore, Madras)	do do	do L/23/5/45 Tex D 63 26-6-63
Schd. Ind. No. 27 (2)—Milk Feed		
Glaxo Laboratories (India) Private Ltd., Worli, Bombay-18 (Maharashtra)	Complan (special type milk food)—[NA]	M. tons p.a. L/27/2/3 Ch. II 63 21-6-63 120
Schd. Ind. No. 1 A (7)—Other Products of Iron and Steel		
Miss Sarojini Nanavathy Sannidhi, Rajghat, New Delhi Proposed name : M. S. & Alloy Electrodes (Private) Ltd., (Punjab)	Mild steel and alloy welding electrodes—[N U]	Million R. Fr. L/1 A (7) 11 LEI (B) 63 p. a. 4-7-63 60
Schd. Ind. No. 1-B (2) - Semi Manufactures and Manufactures		
Shri R. Venkataswamy Naidu, The Madras Aluminium Co. Ltd., Race Course, Coimbatore (Mettur, Madras)	Aluminium rods for the manufacture of ACSR/AAC Aluminium rolled products (including about 1,500 M. tons of aluminium strips) Aluminium extrusions [N A]	M. tons p.a. L/1 B (2) 31 Met 63 10-7-63 3,000 3,500 1,000
Schd. Ind. No. 2 (1)—Coal, Lignite and their Derivatives		
East Jamuria Coal Co., 135, Canning Street, Calcutta (West Bengal)	Coal—[S E]	tons p.a. L/2 (1) N-185/63 21-6-63 60,000
Schd. Ind. No. 4 (2)—Internal Combustion Engines		
Merchantile & Industrial Development Co. Private Ltd., National House, 6, Tulloch Road, Appollo Bunder, Bombay-1 (Maharashtra)	Micro-filters ... Water separators/filters ... [N A]	Nos. p.a. L/4 (2) 3 EBI 63 21-6-63 470 250

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Schd. Ind. No. 5 (1)—Equipment for Generation Transmission etc.		
W. S. Insulators of India Ltd., 33, Errabalu Chetty Street, Madras-1 (Madras)	Porcelain fuse cutouts of all types, enclosed, open and distribution by pass switches and of all voltages [N A] 1,200	Nos. p.a. L/5 (1) 84 EEI 63 21-6-63
Schd. Ind. No. 5 (8)—Electronic Equipment		
Permanent Magnets Ltd., Jannabhoomi Bhavan Ghogha Street, Fort, Bombay-1 (Maharashtra)	Hard ferrite (ceramic magnets) [N A]	tons p.a. L/5 (8) 12 LEEI 63 2-7-63
Schd. Ind. No. 7 (5)—Automobiles		
Punj Sons (Private) Ltd., Punj House, M-13, Connaught Circus, New Delhi-1 (Delhi)	Bodies for trucks [N A]	Nos. p.a. L/7 (3) 45 AEI 63 6-7-63
Schd. Ind. No. 8-B (2)—Conveying Equipment		
Shri A.K. Sen, P-7, Belegatta Main Road, Calcutta-10	Different kinds of roller conveyors, overhead trolley conveyors for bulk and package handling—[N U] ...	Rs of lakhs p.a. L/8 B (2) 41 MEI 63 9-7-63
Schd. Ind. No. 8-B (11)—Power Driven Pumps		
S.L.M. Maneklal Industries Ltd., Bank of India Building, Baroda, Ahmedabad-1 (Vatwa, Ahmedabad, Gujarat)	Root blowers and watering pumps shifting from Maharashtra to Vatwa, Ahmedabad, Gujarat (Shifting)	L/8 B (11) EEI 63 21-6-63
Schd. Ind. No. 9—Machine Tools		
Pioneer Equipment Co. (Private) Ltd., 139, Meadows Street, P.B. No. 1909, Bombay-1 (Gujarat)	Gravity die casting machine Pressure die casting machine Dies for the above—[S E] ...	Nos. p.a. L/9-116 MEI 63 8-7-63 lacks of Rs. worth p.a. 10
Schd. Ind. No. 23 (1)—Cotton Textiles		
The Kaleeswarar Mills Ltd., 10/8, Annupperpalayam Road, Coimbatore (Kalayar Koil, Madras)	Cotton yarn ... Change of location of part of the capacity within the same state from Coimbatore to Kalayarkoil (NU and shifting)	spindles L/23 (1) 587 Tex (B) 63 16,000 3-7-63
The South India Co-operative Spinning Mills Ltd., Pethai Post, Tirunelveli-4 (Pettai P.O., Madras)	Cotton yarn—[N U] ...	12,000 L/23 (1) 588 Tex (B) 63 3-7-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	Licence number and date
Shri M.B. Kadadi, Chief Promoter Sholapur Co-operative Spinning Mills Ltd., "Ganga Niwas" Railway lines, Sholapur, (Sholapur, Maharashtra)	Cotton yarn—[N U] ...	spindles L/23 (1) 586 Tex (B) 63 12,000 2-7-63
Schd. Ind. No. 23 (3)—Woollen Textiles		
Oswal Woollen Mills, Miller ganj, Ludhiana (Ludhiana, Punjab)	Woollen fabrics—[S E] ...	power looms L/23 (3) 30 Tex (D) 63 16 29-6-63
Schd. Ind. No. 23 (5)—Synthetic, Artificial and Man-Made Fibres		
Samridhi Spinning Mills, Agra Road, Ghatkopar, Bombay-77 (Maharashtra)	Staple fibre yarn—after expansion—[S E] ...	spindles L/23 (5) 544 Tex (D) 63 12,000 26-6-63
Schd. Ind. No. 28 (1)—Vegetable Oils		
Shri Navin Chandra Chandulal Parikh, Petlad, Dist. Kaira (Petlad, Gujarat)	Cotton seed oil by solvent extraction process—100 tons of cotton seed per day or 20,000 tons of cotton seed per annum—[N U]	L/28 (1) 5 Chem II 63 20-6-63
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
Pioneer Iron & Steel Corporation, 119, G. T. Road, Belur, Howrah (West Bengal)	Cast iron castings Steel forgings—[C O B] ...	tons p.a. L/1 A (3) 87 EI (M) 63 3,500 16-6-63 300
The Indian Smelting & Refining Co. Ltd., Industry House, 159, Churchgate Reclamation, Bombay (Thana, Maharashtra)	S. G. Iron & Special steel castings. Shifting from Bhandup to Thana (Maharashtra)—[Shifting]	L/1 A (3) 6 EEI 63 2-7-63
Schd. Ind. No. 1-A (6)—Special Steels		
Shri V. Pandurangiah, C/o. Vummidiars (Manufacturers) Private Ltd., 162, Mount Road, Madras-2 (Madras)	Stainless steel (sheets)—[S E]	tons p.a. L/1 A (6) N-28/63 7,000 12-7-63
Schd. Ind. No. 1 A (7)—Other Products of Iron and Steel		
Steel Mills of India (Private) Ltd., 33, Netaji Subhas Road, Calcutta-1 (Kalwa, Dist. Thana, Maharashtra)	Mild steel bars, rods, light angles gate channels, light structurals and other steel rolled products [Shifting from Hamira (Punjab) to Thana (Maharashtra) (C O B & Shifting)]	tons p.a. L/1 A (7) N-280/63 12,000 12-7-63
J. K. Steel Ltd., 7, Council House Street, P.B. No. 2584, Calcutta, (Rishra, Dist. Hooghly, West Bengal)	Cold rolled strips (75-100 mm size)—[S E] ...	tons p.a. L/1 A (7) N-290/63 9,600 19-7-63

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	License number and date
Schd. Ind. No. 1-B (2)—Semi Manufactures and Manufactures		
A.V. Swamy & Co., 17, Greaves Road, Madras-6 (Vizayanagaram, Vishakapatnam Dist. Andhra Pradesh)	Manganese metal and corresponding quantity of manganese dioxide—[N U] ... 1,800	M. tons p.a. L/1 B (2) 32 Met 63 15-7-63
Schd. Ind. No. 2 (1)—Coal, Lignite, Coke and their Derivatives		
Shri Benarshilal Agarwalla, P.O. Govindpur, Dist. Dhanbad, Proposed name: West Shampur Colliery, (Village-Pithakiyari, P.S. Nirsha, Dist. Dhanbad, Bihar)	Coal—[N U] ... 35,000	tons p.a. L/2 (1) N-195/63 15-7-63
Central Shampur Coal Co., P.O. Nirshachatti Dist. Dhanbad, (Dist. Dhanbad, Bihar)	do do ... 1,500	L/2 (1) N-196/63 15-7-63
D. P. Lala & Sons, Lala Bhavan, P.O. Kharkharea, Dist. Dhanbad (South Barora Colliery, P.O. Nawagarh Dist. Chanbad (Bihar)	do [COB] ... 41,600	L/2 (1) N-197/63 15-7-63
Hindegir Mining Corporation, P.O. Hirapur, Dist. Dhanbad, (P.O. Hindegiry, Dist. Hazaribagh, Bihar)	do do ... 22,500	L/2 (1) N 198/63 15-7-63
Schd. Ind. No. 7 (5)—Automobiles		
Shri S. S. Sha, C/o. M/s. International Engineering Associates, 774, Tilak Road, Dadar, Bombay-14 Proposed name: M/s. Eaton Products (India) Pt. Ltd., (Bombay/Poona, Maharashtra)	Valve inserts ... Valve guides ... Valve tappets ... Park rods ... Valve springs—[N U] ...	Nos. p.a. L/7 (5) 47 AEI 63 10-7-63 10,00,000 10,00,000 3,00,000 5,00,000 5,00,000
Schd. Ind. No. 30 (1)—Tyres and Tubes		
Dunlop Rubber Co. (India) Ltd., 57-B, Free School Street, Calcutta (Ambattur, Madras)	Bicycle tyres—[S E] ...	Nos. p.a. L/30 (1) 6 Chem IV 63 10-7-63 12,84,000
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
Atta's Iron Foundry, 171, Grand Trunk Road, Salkia, Howrah, (West Bengal)	C. I. Railway sleepers and other C. I. products [COB] ... 7,000	tons p.a. L/1 A (3) 7 EEI 63 11-7-63
Sri Ramakrishna Steel Industries Ltd., 1/9, Naranapuram, Pappanaickenpalayam, Coimbatore-1 (Coimbatore, Madras)	Steel castings—on the basis of maximum utilisation of plant capacity—[N U] ... 4,800	L/1 A (3) 92 EI (M) 63 11-7-63
Schd. Ind. No. 5 (1)—Electrical Equipment		
The Bihar State Industrial Development Corporation Ltd., Sikandar Manzil, Fraser Road, Patna Proposed name: The Bihar General Electric Co. (Tatisilwal, Dist. Ranchi, Bihar)	L. T. Oil circuit breakers ... Motor starters—[N U] ...	Nos. p.a. L/5 (1) 87 EEI 63 2-7-63 300 3,600

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Name and full address of the undertaking and location	Articles of manufacture: capacity and type of licence	License number and date
Schd. Ind. No. 5 (2)—Electrical Motors		
Bihar State Industrial Corporation Ltd., Sikandar Manzil, Fraser Road, Patna, Proposed name: The Bihar General Electric Co., (Tatisilwai, Dist. Ranchi, Bihar)	A. C. Industrial Motors above 1 H.P. and upto 100 H.P. 63,000 H.P. p.a. on double shift basis—[N U]	L/5 (2) 18 EEI 63 22-7-63
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
Aluminium Cables & Conductors (U.P.) Private Ltd., 47, Hide Road Extension, (Off Transport, Depot Road, Calcutta-27)	A.C.S. Rand. A.A. conductors—on two shifts—[S E] 3,200	tons p.a. L/5 (6) 58 LEEI 63 23-7-63
Schd. Ind. No. 22—Drugs and Pharmaceuticals		
Martin & Harris Private Ltd., Mercantile Buildings Lall Bazar, Calcutta-1 (West Bengal)	13,00,000 ampoules p.a. Mand H. Cabalamine 500 inj. Mand H. Plax B. inj. Mand calcium C-250 inj. Mand inj. of aminophylline B.P. Mand adrechrome—inj. Mand inj. of procaine hydrochlor with adrenaline. Dienol; Durabolin; Deca-Durabolin; Menstrogen; Testanon; Progesterin; Gestyl; Pregynl; Distilled water (0.5 phenol) [S E]	L/22/164 Ch. III 63 27-7-63
Schd. Ind. No. 23 (1)—Cotton Textiles		
Ankay Cloth & General Mills, Hathras (U.P.)	Spindles for the manufacture of cotton yarn—[S E] ... 6,184	L/23 (1) 589 Tex (B) 63 10-7-63
Ahmedabad New Cotton Mills Co. Ltd., Near Khokhra Mohmedabad, Ahmedabad (Gujarat)	do do ... 922	L/23 (1) 590 Tex (B) 63 18-7-63
Schd. Ind. No. 27 (2)—Milk Food		
The Officer-in-charge Composite Milk Plant Department of Animal Husbandry, Amritsar (Verka near Amritsar, Punjab)	Skimmed milk food powder... [N U]	M. tons p.a. L/27 (2) 1 Ch. II 63 9-7-63 1,500
Schd. Ind. No. 27 (3)—Malted Foods		
Dyer Meakin Brewries Ltd., Mohan Nagar, Gaziabad (Uttar Pradesh)	Malt extract—[S E] ...	M. tons p.a. L/27 (3) 1 Ch. II 63 9-7-63 1,800
Schd. Ind. No. 33 (6)—Miscellaneous Ware		
Bawa Glass & Crockeries Private Ltd., Chandni Chowk, Delhi, (Delhi, Administration)	Lead crystal glassware [N A] ...	tons p.a. L/33 (6) 3 Ch. II 63 24-7-63 1,800

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 38—Cigarettes		
Vazir Sultan Tobacco Co. Ltd., Post Box No. 6, Hyderabad-20 (Azamabad, Hyderabad, Andhra Pradesh)	Cigarettes—[S E] ...	million pieces L/38/2 Ch. IV 63 p.a. 360 17-7-63
AUGUST 1963		
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
Bharat Iron & Steel Corporation, 12, Gopal Ghose Lane, Salkia, Howrah (West Bengal)	C. I. Pipes and fittings, C. I. Sanitary fittings, C.I. Rly. castings, Rice mill parts, Electrical goods, C. I. Polishing machine, C. I. Jute mill castings and miscellaneous—[C O B] ...	tons p.a. L/1-A (3) 8 EEI 63 11-7-63 5,000
Schd. Ind. No. 5 (1)—Electrical Equipments		
Rallifan Limited, Ralli House, 21, Ravelin Street, Fort, Bombay (Maharashtra)	Fractional horse power motors—The capacity would be fixed on the basis of the actual production achieved and to that extent the existing capacity for fans would be modified—[N A]	L/5 (1) 85 EEI 63 29-6-63

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Telephone: 25053

Grams: EMGISHA

M. G. SHAHANI & Co. (Bom) Private Ltd.,

(P. B. No. 1956)

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Universal Electric Ltd., 15, India Exchange Place, Calcutta-1 (West Bengal)	Safety breakers—[N A] ...	Nos. p.a. L/5 (1) 86 EEI 63 1,20,000 29-6-63
Schd. Ind. No. 8-B (2)—Conveying Equipment		
Otis Elevator Co. (India) Ltd., Gateway Building Apollo Bunder, Bombay-1 (Kaju Tekdi, Agra Road, Bhandup, Bombay, Maharashtra)	1 Passenger and goods lifts... [S E]	Nos. p.a. L/8 B-2/52 MEI 63 120 18-7-63
Schd. Ind. No. 23 (10)—Cotton Textiles		
Sarguna Textile Private Ltd., Avnashi Road, Coimbatore-1 (Madras)	Spindles for the manufacture of cotton yarn—[S E] ...	L/23 (1) 591 Tex B 63 5,840 22-7-63
Chowgule & Co. Ltd., Mormugao Harbour, Goa (Zambaulim/Quepem/ Chandor, Goa)	do [N U] ...	L/23 (1) 592 Tex B 63 25,000 30-7-63
Raipur Manufacturing Co. Ltd., Out side Saraspur Gate, Ahmedabad-10 (Gujarat)	do [S E] ...	L/23 (1) 593 Tex B 63 1,976 31-7-63
Commercial Ahmedabad Mills Co. Ltd., Asarva, Ahmedabad (Gujarat)	do do ...	L/23 (1) 594 Tex B 63 1,465 31-7-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute, including Jute, Twine and Rope		
Ludlow Jute Co. Ltd., 14, India Exchange Place, P.O. Box No. 596, Calcutta-1, (West Bengal)	Wide hessian (carpet backing cloth) 242 broad looms already installed for producing—[S E] ... 25,410	tons p.a. L/23 (2) 65 J & C 63 31-7-63
The Fort William Co. Ltd., 14, Netaji Subhas Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 100 broad looms for producing—[S E] ... 10,500	L/23 (2) 66 J & C 63 31-7-63
Schd. Ind. No. 23 (5)—Textiles made wholly or in part of Synthetic, Artificial Fibres, including Yarn and Hosiery of such Fibres		
J. K. Synthetics Ltd., Kamla Tower, Kanpur (Rajasthan)	Nylon—after effecting expansion—[S E] ... 6-6	lakhs kgms. L/23 (5) 54 Tex (D) 63 24-7-63
Schd. Ind. No. 24 (1)—Paper, Writing, Printing and Wrapping		
Packaging Paper Corporation Ltd., Post Box No. 134, K. K. Road, Kottayam (Angamali, Ernakulam, Kerala)	Fluting media and liner paper Pulp—[N U] ... 30,000	tons p.a. L/24 (1) 80 NU/Ch. I 63 25-7-63
Schd. Ind. No. 5 (1)—Electrical Equipment for Generation, Transmission and Distribution of Electricity including Transformers		
National Electrical Industries Ltd., Industrial Estate, Lalbaug, Bombay-12 (Maharashtra)	Power and distribution transformers 5,000 to 15,000 KVA and voltage ranges upto rating 132 KV 2.40,000 KVA per annum [S E]	L/5 (1) 79 EEI 63 1-4-63
Schd. Ind. No. 7 (5)—Automobiles (Motor Cars, Buses, Trucks, Motor Cycles, Scooters and the like)		
Ghatge Patil Industries Private Ltd., Rajaram Road, Kolhapur, Urchgaon, Dist. Kolhapur, (Maharashtra)	Clutches and power-take-offs for heavy duty engines [N U] ... 1,500	Nos. p.a. L/7 (5) 46 AEI 63 3-8-63
Schd. Ind. No. 9—Machine Tools		
Bengal Enamel Works Ltd., 60/2, Dharamtala Street, Calcutta-13, (Titagarh (Noapara) 24, Parganas-West Bengal)	Industrial furnaces—[N U]...	Rs. of lakhs L/9/127 MEI 63 worth p.a. 5-8-63 50
Schd. Ind. No. 11—Earth Moving Machinery		
Garden Reach Workshops Ltd., 43/46, Garden Reach Road, Calcutta-24, (West Bengal)	8-10 ton diesel engine driven road roller—[N A] ... 120	Nos. p.a. L/11 (8) AEI 63 2-8-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
The Indian Tool Manufacturers Ltd., 101, Sion Road, Sion, Bombay-22 (Maharashtra)	Carbide tipped tools—[N A]	Nos. p.a. L/12 (2) 92 MEI 63 1,80,000 5-8-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 22—Drugs and Pharmaceuticals		
Alembic Chemical Works Co. Ltd., Alembic Road, Industrial Area, Baroda-3 (Gujarat)	Item of manufacture Inhaler ... 5,00,000 units Hompro first aid spray 1,50,000 bottles of 50 ml. each Glare lotion (Mild antiseptic) ... 50,000 bottles of 100 ml. each Antiseptic shaving cream ... 2,00,000 tubes of 75 gm. Glare liquid (for scalp hygiene) ... 25,000 bottles of 200 ml. Antiseptic dentifrice ... 5,00,000 tubes of 100 gm. Glare cream (for scalp hygiene) [S E] ... 25,000 bottles of 200 m. each	L/22/165 Ch. III 63 1-8-63
Schd. Ind. No. 1-B (2)—Semi Manufactures and Manufactures		
Anam Electrical Manufacturing Co., Kadlam, East Godavari Dist. (Andhra Pradesh)	Aluminium rods suitable for further manufacture of ACSR/AAC—[N A] ... 3,000	M. tons p.a. L/1 B (2) 33 Met 63 13-8-63
Schd. Ind. No. 2 (1)—Coal		
Selected Satgram Collieries Ltd., F-2, Gillander House, 8, Netaji Subhas Road, Calcutta-1 (Dist. Chanda, Maharashtra)	Coal—[C O B] ... 98,000	tons p.a. L/2 (1) N-199/63 7-8-63
Model Dhuri Colliery Co., Hazaribagh (Village Atma, P.O. and P. S., Mandu, Hazaribagh, Bihar)	do do ... 15,900	L/2 (1) N-200/63 16-8-63
National Coal Development Corporation Ltd., "Darbhanga House," Ranchi, (Tehsil, Baikunthpur, Dist. Surguja, Madhya Pradesh)	do [N U] ... 0.5	million tons p.a. L/2 (1) N-201/63 16-8-63
Schd. Ind. No. 8-A (6)—Mining Machinery		
Reliable Water, Supply Service of India Ltd., 17, Gokhale Marg, Lucknow (Uttar Pradesh)	Items of manufacture Well master RC 627 reverse circulation drill rig ... 5 initially & 7 Nos. in the third year Well master RC 518 reverse circulation drill rig ... do do Well master RC 308 reverse circulation drilling rig ... do do Well master DR 1,500 direct rotary drill rig ... 5 initially & 15 Nos. in the third year Well master PR 412 percuss-ion drill rig—[N A] ... 5 initially & 7 Nos. in the third year	L/8 A-6 18 MEI 63 9-8-63

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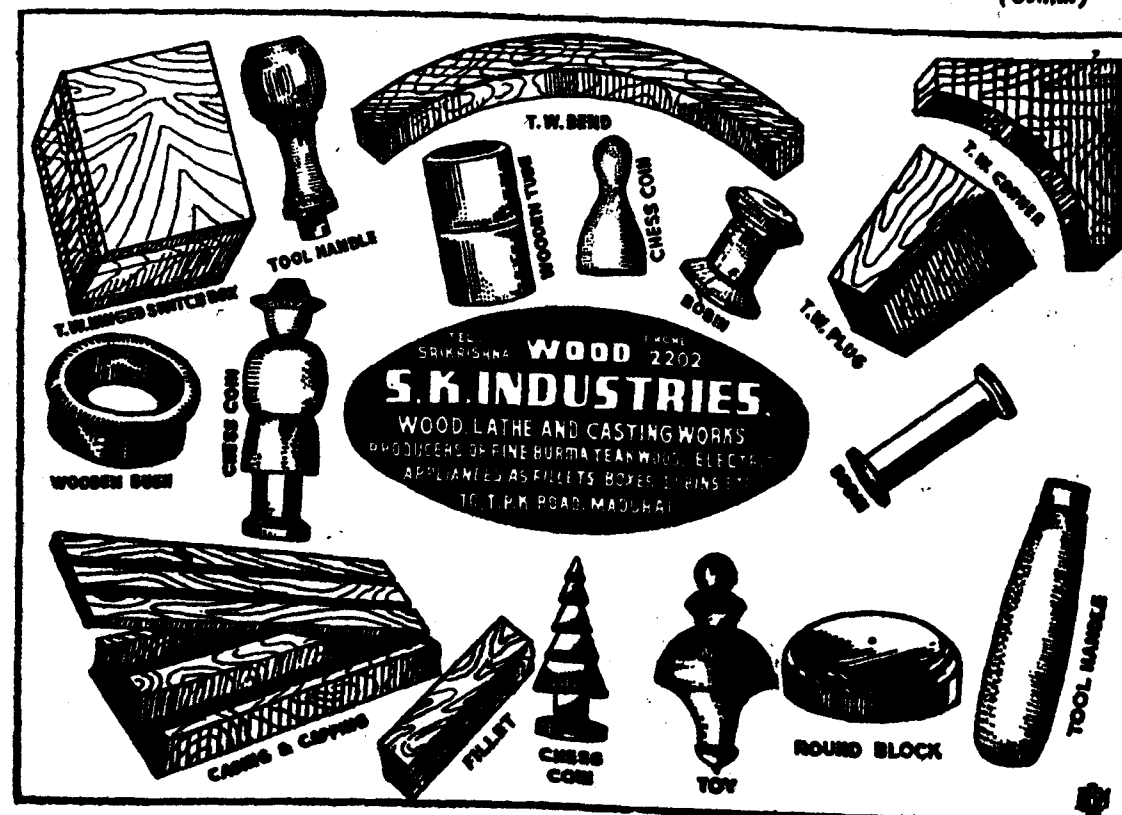
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<i>Name and full address of the undertaking and location</i>	<i>Articles of manufacture; capacity and type of licence</i>	<i>Licence number and date</i>
Schd. Ind. No. 8-B (2)—Conveying Equipment		
Shri T. S. Chockalingam, 13, South Street, Santhome, Madras-28	Heavy structurals E.O.T. cranes of spans and lifting capacities Wharf cranes	L/8 B-2/33 MEI 63 6-8-63
Proposed name:	1st Stage tons	
Amaravathi Industries (Vaiyampatti, Kulitalai, Tiruchirapalli Dist. Madras)	2nd do 10,000 [N U]	
Schd. Ind. No. 9—Machine Tools		
Cooper Engineering Ltd., Chinchwad (Maharashtra)	Gear hobbing machines ...	Nos p.a. L/9/126 MEI 63 20 16-7-63
	[N A]	
Schd. Ind. No. 30 (1)—Tyres and Tubes		
Premier Tyres Ltd., Maneckjee Wadia Building, 127, Mahatma Gandhi Road, Bombay-1 (Kalamassery, Kerala)	Automobile tyres ...	Nos. p.a. L/30 (1) 7 Chem. IV 63
	do tubes—[S E] ...	60,000 60,000
Schd. Ind. No. 35 (1)—Portland Cement		
Surrendra (Overseas) Private Ltd., Tanda Road, Jullundur (Samloti, Kangra Dist. Punjab)	Portland cement—[N U] ...	tons p.a. L/35 (1) 24 Cement 63 1,00,000 16-8-63

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<i>Name and full address of the undertaking and location</i>	<i>Articles of manufacture : capacity and type of licence</i>	<i>License number and date</i>
Schd. Ind. No. 36 (4)—Miscellaneous (Furniture Components, Bobbins, Shuttles and the like)		
Shalimar Industries Private Ltd., 25 Ganesh Chandra Avenue, Calcutta-13 (Howrah, West Bengal)	Compressed persimmon wood blocks—[N A] ...	pieces p.a. L/36 (4) 1 Chem. IV 63 2-8-63
Schd. Ind. No. 1-B (2)—Semi Manufactures and Manufactures		
Devidayal Electromet. Tulsiram Gupta Mills, Estate, Reay Road, Bombay-10 (Kalyan in Thana Dist. Maharashtra)	Manganese metal and corresponding quantity of manganese dioxide, etc.—[N U] ...	M. tons p.a. L/1-B (2) 34 Met-63 19-8-63
Schd. Ind. No. 2 (1)—Coal		
Shri Sadananda Banerjee, New Bhagran Colliery, 'Nilachal', P.O. Sitarampur, Dist. Burdwan, (West Bengal)	Coal—[C O B] ...	tons p.a. L/2 (1) N 202/63 23-8-63
Schd. Ind. No. 5 (4)—Electrical Lamps		
Bijlee Products (India) Private Ltd., 26, Dr. A. L. Nair Road, P.O. Box 4516, Byculla, Bombay-8 (Poona, Maharashtra)	Electric bulbs same—Shifting from Bombay to Poona—[Shifting]	L/5 (4) 47 LEEI 63 1-8-63
Schd. Ind. No. 7 (4)—Railway Rolling Stock		
Ramchander Heeralall, 138, Canning Street, Calcutta Proposed name : Shalimar Iron Works (West Bengal)	Axle guards—[C O B] ...	tons p.a. L/7 (4) 9 MEI 63 13-8-63
Schd. Ind. No. 9—Machine Tools		
General Machinery Stores, Rajabhabadur Compound, 24/BD Hamam Street, Bombay-1 (Greater Bombay, Maharashtra)	Injection moulding machines Extruding machines Moulds—[N U] ...	Nos. p.a. L/9/128 MEI 63 8-8-63
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
Fadcotire Private Ltd., 55/115, Generalganj, Kanpur (Uttar Pradesh)	Turning tools with cemented carbide tips (excluding carbide tips)—[N U] ...	pieces p.a. L/12-2/94 MEI 63 14-8-63
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals		
Shri R. K. Rejura, Raja Bahadur Mansion, 45, Tamarind Lane, Fort, Bombay-1 Proposed name : Eastern Air Products Ltd., (Bhopal, Madhya Pradesh)	Oxygen gas Acetylene Nitrogen gas—[N U] ...	cu. metres p.a. L/19 (14) 18 Chem. II 63 16-8-63
Schd. Ind. No. 23 (2)—Made wholly or in part of Jute, including Jute, Twine and Rope		
Hastings Mills Ltd., 14, Netaji Subhas Road, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 100 broad looms for producing ...	tons p.a. L/23 (2) 67 J & C 63 21-8-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 26 (1)—Alcohol		
Shri Madhavlal Narayanlal Pittie, C/o. Shangrila Food Products Ltd., Great Social Building, 60, Sir Pherozshah Mehta Road, Bombay-1 (Bihar)	Ethyl alcohol—[N U] ... gallons p.a. 15,60,000	L/26 (1) 5 Chem. II 63 19-8-63
Schd. Ind. No. 27 (3)—Malted Foods		
Jagatjit Distilling & Allied Industries Ltd., P.O., Jagatjitnagar Railway Station, Hamira (Jagatjit Nagar, Punjab)	Malted milk food—[N U] ... M. tons p.a. 1,800	L/27 (3) 2 Chem. II 63 19-8-63
Schd. Ind. No. 28 (1)—Vegetable Oils including Solvent Extracted Oils		
The Jai Hind Oils Mills Co. 387-89, Narasi Natha Street, Bombay-9 (Bhandup, Bombay, Maharashtra)	Cotton seed oil—in terms of cotton seed ... tons 20,000	L/28 (1) 6 Chem II 63
Schd. Ind. No. 33 (3)—Optical Glass		
National Instruments Ltd., Jadavpore, Calcutta-32 (Durgapur, West Bengal)	Ophthalmic glass blanks [N A] ... tons p.a. 3,000	L/33 (3) 1 Chem. II 63 9-8-63
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
The Shalimar Works Ltd., 1, Foreshore Road, Shibpore, Howrah (West Bengal)	Ferrous castings (C. I. castings)— capacity to be assessed—[C O B]	L/1 A (3) 9 EEI 63 29-7-63
Bhartia Electric Steel Co. Ltd., 8, Swinhoe, Street, Ballygunge, Calcutta (West Bengal)	Steel ingots and steel castings [S E] ... tons p.a. 3,600	L/1 A (3) 91 EI (M) 63 27-6-63
Schd. Ind. No. 2 (1)—Coal Lignite, Coke		
Bhowra Kankanee Collieries Ltd., 25, Brabourne Road, Calcutta-1 (P.O. Bhowra—Dist. Dhanbad, Bihar)	Coal and coke—[S E] ... tons p.a. 1,07,040	L/2 (1) 203 N 63 28-8-63
Bhowra Kankanee Collieries Ltd., 25, Brabourne Road, Calcutta-1 (P.O. Bansjora, Dist. Dhanbad, Bihar)	do do ... 1,86,200	L/2 (1) 204 N 63 28-8-63
Bhowra Kankanee Collieries Ltd., 25, Brabourne Road, Calcutta-1 (P.O. Kusunda Dist. Dhanbad, Bihar)	do do ... 1,10,000	L/2 (1) 205 N 63 28-8-63
Schd. Ind. No. 6 (4)—Radio Receivers		
Harsh Engineering Industries, Nawalgarh House, Jaipur (Jaipur, Rajasthan)	Tubular papers capacitors ... Hermetically sealed paper capacitors—[N U] ... million Nos. p.a. 5	L/6 (4) 51 LEEI 63 27-8-63
Schd. Ind. No. 9—Machine Tools		
Tak Machinery Ltd., Janambhoomi Bhavan, Ghona Street, Fort, Bombay-1 (Maharashtra)	Hydraulic presses—[S E] ... Nos. p.a. 60	L/9/129 MEI 63 17-8-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Schd. Ind. No. 12 (2)—Hand Tools, Small Tools and the like		
New India Tool Manufacturing Co., 48, Garithat Road, Calcutta-19 (West Bengal)	Reamers ... pieces p.a. 24,000 Cutter and other precision small tools ... 3,000 Tool bits including carbide tipped tools ... 50,000 Twist drills ... 10 lakhs [C O B] & [S E]	L/12 (2) 95 MEI 63 22-8-63
Schd. Ind. No. 19 (4)—Synthetic Resins and Plastics		
Dr. Beck & Co. (India) Ltd., Bombay—Poona Road, Pimpri, Poona (Maharashtra)	Synthetic resins of phenolic, alkyd, polyester, hydroxy polyester, unsaturated polyester etc. specially formulated for the electri- cal industry—[C O B] ... 600	tons p.a. L/19 (4) 4 Chem. V 63 26-8-63
Schd. Ind. No. 22—Drugs and Pharmaceuticals		
Sandoz (India) Ltd., 3, Wittet Road, Ballard Estate, Bombay-1 (Maharashtra)	Manufacture of active principles of podophyllum Glycoside fraction ... kgs. p.a. 24,000 Aglycone fraction—[S E] ... 30,000	L/22/166 Ch. III 63 21-8-63
Raptakas Breat & Co. Private Ltd., Annie Besant Road, Worli, Bombay-18 (Thana, Maharashtra)	Cateryl gel 13,000 bottles of [Shifting from Madras to Thana]	mile each p.a. L/22/169 Ch. III 63 360 27-8-63
Schd. Ind. No. 23 (2)—Textile made wholly or in part of Jute, including Jute, Twine and Rope		
Cheviot Mills Co. Ltd., 8, Clive Row, P.B. No 150, Calcutta (West Bengal)	Wide hessian (carpet backing cloth) 40 broad looms for producing—[S E] ... 4,200	tons p.a. L/23 (2) 63 J & C 63 26-8-63

SEPTEMBER 1963

Schd. Ind. No. 2 (1)—Coal

J. N. Gorai & A. B. Gorai, P.O. Chirkunda, Dist. Dhanbad, (P.O. Mugma, Dist. Dhanbad, Bihar)	Coal — [C O B] ...	tons p.a. L/2 (1) 206 N 63 4,400 31-8-63
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Schd. Ind. No. 7 (2)—Ships and other Vessels Drawn by Power

Chowgule & Co. Ltd., Hormugao Harbour, Goa (Sirigao, Goa)	(i) Maintenance and repairs of barges and small vessels including engines (ii) New construction of barges and ships upto 750 tons D. W. (iii) Structural—[C O B] ...	vessels p.a. L/7 (2) 4 MEI 63 28-8-63 48 3 tons p.a. 600
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Name and full address of the undertaking and location	Articles of manufacture, capacity and type of licence	Licence number and date
Schd. Ind. No. 8-A (11)—Paper Machinery		
Metro Wood & Engineering Works Private Ltd., Dhanlakshmi Market, Reid Road, Ahmedabad-2 (Kalol, Gujarat)	Complete machinery and equipment for making chip-boards ... 3 plants per annum—[N A]	tons per day L/8 A-11/16 MEI 63 14-8-63
Schd. Ind. No. 8-B (2)—Conveying Equipment		
J. K Steel Ltd., 7, Council House Street, Calcutta (Rishra, Dist. Hooghly, West Bengal)	E. O. T. cranes 60 Nos. (ranging from 1 to 10 tons) per year Hand separated travelling cranes 60 Nos. (ranging from 1 to 10 tons per year—[N A])	L/8 B (2) 54 MEI 63 29-8-63
Schd. Ind. No. 8-C (3)—Grinding Wheels and Abrasives		
General Abrasives Co. Private Ltd., Patel Estate, Goregaon, Bombay-62 (Bombay, Maharashtra)	Bonded abrasives such as grinding wheels, discs, rubbing bricks sharpening stones [N U]	tons p.a. L/8 (C-3) 2 LEI (B) 63 2-9-63 800

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RUBBER PRODUCTS & MOULDING COMPANY

ENGINEERS IN RUBBER

Post Box 11202

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CALCUTTA-14



MAKERS OF INDUSTRIAL PRODUCTS IN
RUBBER, SYNTHETIC RUBBER & EBONITE



WHEELS FOR TRUCKS AND TROLRIES, WASHERS,
LINING OF PIPES AND VESSELS, MOULDINGS
FOR CHEMICAL INDUSTRY, VALVES, BUCKETS,
DIAPHRAGMS, PRINTERS' ROLLERS, TEXTILE
ROLLERS, RLY. FITTINGS AND P.V.C. MOULDINGS.

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Name and full address of the undertaking and location	Articles of manufacture, capacity and type of licence	Licence number and date
Schd. Ind. No. 12 (1)—Plastic Moulded Goods		
Eastern Equipment & Sales Ltd., 24-B, Peter Street, Calcutta (Kalyani, Dist. Nadia, West Bengal)	(i) Unplasticised PVC pipes ranging from outside diameter 12 mm to 9 mm with various wall thicknesses ... (ii) Unplasticised PVC fittings, planges, valves and other components of piping systems—[N U]...	M. tons p.a. L/12 (1) 16 Ch. V 63 31-8-63 720 lbs. p a. 1,80,000
Schd. Ind. No. 19 (1)—Inorganic Heavy Chemicals		
Adarsh Chemicals Fertilizers Ltd., Udhna, Dist. Surat (Udhna, Gujarat)	Phosphoric acid—[N A] ...	tons p.a. L/19 (1) 93 NA Ch. I 63 1,500 23-8-63
E. I. D. Parry Ltd., 'Dare House', Madras (Ranipet, Madras)	Sodium sulphite do ...	540 L/19 (1) 82 NA Ch. I 63 23-8-63
Dharamsi Morarji Chemical Co. Ltd., 317-21, Dr. Dadabhoy Naoroji Road, Bombay (Ambernath, Maharashtra)	Chlorosulphonic acid—[N A]	5,590 L/19 (1) 94 NA Ch. I 63 23-8-63
Schd. Ind. No. 19 (2)—Organic Heavy Chemicals		
Ahmedabad Manufacturing & Calico Printing Co. Ltd., Calico Mills, Chemicals & Plastic Division, Anik-Chamber, Bombay-71 (Maharashtra)	Vinyl acetate monomer—[S E]	tons per day L/19 (2) 20 Ch. V 63 10 28-8-63
Cellulose Products of India Ltd., P.O. Kathwada, Maiz Products, Dist. Ahmedabad (Gujarat)	Monochloroacetic acid (and sodium Monochloroacetate) [N A]	tons p.a. L/19 (2) 18 Ch. V 63 360 24-8-63
Amar Dye-Chem Ltd., 'Rang Udyan', Sitlavadi Temple Road, Mahim, Bombay-16 (Murbad Road, Shahad Dist. Thana, Maharashtra)	Lauroyl peroxide ... Benzoyl peroxide ... Benzoyl peroxide paste ... Methyl ethyl ketone peroxide [N A]	tons p.a. L/19 (2) 19 Ch. V 63 60 24-8-63 60 60 60
Schd. Ind. No. 19 (4)—Synthetic Resins and Plastics		
Dr. Beck & Co. (India) Ltd., Plot No. 147, Bombay Poona Road, Pimpri, Poona (Maharashtra)	Synthetic resins of alkyd, phenolic, polyester, epoxy unsaturated polyester etc. types (after expansion) ... [S E]	tons p.a. L/19 (4) 5 Ch. V 63 1,800 28-8-63
Schd. Ind. No. 23 (5)—Synthetic, Artificial Fibres, including Yarn and Hosiery of such Fibres		
Gwalior Rayon Silk Manufacturing (Weaving) Co. Ltd., (Weaving Section) United Commercial Bank Building, Parliament Street, New Delhi (Birlanagar, Nagda, Madhya Pradesh)	Art silk fabrics ... after expansion—[S E]	power looms L/23 (5) 55 Tex (D) 63 230 1-8-63

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Sched. Ind. No. 28 (1)—Vegetable Oils, including Solvent Extracted Oils		
Bashir Oil Mills, Warora, Dist. Chanda (Maharashtra)	Cottonseed oil—in terms of cottonseed ... 15,000 Til oil and linseed oil—in term of til and linseed ... 24,000 [COB]	L/28 (1) 7 Chem. II 63 7-9-63
Sched. Ind. No. 1-B (2)—Non-Ferrous, Semi-Manufactures and Manufactures		
Ferro Alloy Corporation Ltd., Post Box No. 99, Shree Ram Bhawan, Tumsar (Garavidi, P. O. Shriramnagar Dist. Shrikakulam, Andhra Pradesh)	Manganese metal ... 1,800 Manganese dioxide—[N A]... 1,800	M. tons p.a. L/1 B (2) 35 Met 63 11-9-63
Sched. Ind. No. 5 (3)—Electrical Fans		
American Refrigerator Company Ltd., 13/C, Russel Street, Calcutta-16 (West Bengal)	Industrial Blowers such as: 6,000 pieces per annum General ventilating Fuse or high temperature fans Roof exhausters Air conditioning and heating Dust or material handling Chemical fume exhausters Axial aerofoil fans and so on—[N A]	L/5 (3) 12 EEI 63 9-8-63
Sched. Ind. No. 7 (5)—Automobiles		
Steel Work Ltd., G. S. Road, Gauhati (Assam)	Trailers of various types including jeep trailers—within the existing capacity of 564 trailers per annum licensed for Tinsukhia factory. [N A]	L/7 (5) 48 AEI 63 2-9-63

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K. A. LOGANATHA NAYAGAR

30, PERUMAL KOIL GARDEN STREET

MADRAS - 1



MANUFACTURER OF EMPTY TIN CONTAINERS



IN ALL SIZES AND HOUSEHOLD IMPLEMENTS

(Contd.)

Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence	Licence number and date
Mahindra Owen Ltd., Gateway Building, Apollo Bunder, Bombay-1 (Maharashtra)	Oscillating axles of 16 ton and 20 ton payloads—[N A]	Nos. p.a. L/7 (5) 50 AEI 63 7-9-63
Sched. Ind. No. 8-A (1)—Textile Machinery		
Shri S. Devaraj, 'Saraj', Tatabad, Coimbatore-12 Proposed name: Sovereign Engineers Private Ltd., (Sulur, Palladam Taluk, Dist. Coimbatore, Madras)	Fluted rollers 600 frames (3,600 lines) per annum Spindles ... 2,40,000 Rings—[N U] ... 2,40,000	L/8 A-1/51 MEI 63 4-9-63
Textile Machinery Corporation Ltd., P. O. Balgharia (Balgharia, 24, Parganas, West Bengal)	Termaco-zinser ring spinning and doubling frames upto [N A]	Nos. p.a. L/8 (A-1) 49 MEI 63 2-9-63
Shri K. S. Jankiram, 20/B, Second Line Beach Madras-1 Proposed name: Madras Spindle Co. Ltd., (Madras, Madras State)	Spindles ... 3,74,000 Rings ... 2,70,000 Fluted rollers for 240 ring frames (1,440 lines) per annum—[N U]	pieces p.a. L/8 A-1/50 MEI 63 4-9-63
Swastik Textile Trading Co. Private Ltd., Motilal Hirabhai Market, Railwaypura Post, Ahmedabad-2 (Amraiwadi, Ahmedabad, Gujarat)	Felt calender combination ... Openwidth, roll off securing and crapening machine ... De-twisting and opening machines—[N A] ...	units p.a. L/8 A-1/48 MEI 63 31-8-63
Sched. Ind. No. 19 (1)—Inorganic Heavy Chemicals		
Travancore Cochin Chemicals Ltd., Udyogamandal (Elloore Udyogamandal, Kerala)	Liquid chlorine ... Hydrochloric acid 100%—[S E] ...	tons p.a. L/19 (1) 96 SE Ch. I 63 9,900 7-9-63
National Peroxide Ltd., Neville House, Graham Road, Ballard Estate, Bombay, (Thana, Bombay, Maharashtra)	Hydrogen peroxide (100% strength)—[S E] ...	2,000 L/19 (1) 95 SE Ch. I 63 7-9-63
Sched. Ind. No. 19 (2)—Organic Heavy Chemicals		
Union Carbide India, Ltd., 1 & 3 Brabourne Road, P.O. Box No. 2170, Calcutta (Trombay, Maharashtra)	Acetylene black—[N A] ...	lbs. p.a. L/19 (2) 21 Chem. V 63 20,00,000 3-9-63
Sched. Ind. No. 22—Drugs and Pharmaceuticals		
Hind Chemicals Ltd., M/336, Rail Bazar, Post Box No. 227, Kanpur (Uttar Pradesh)	Digoxin and other digitatis glycosides—[S E] ...	kgs. p.a. L/22/168 Ch. III 63 9-9-63
Sched. Ind. No. 28 (2)—Vegetable Oils and Vanaspathi		
Hindustan Lever Ltd., Scindia House, Ballard Estate, Bombay-1 (Shamnagar, 24, Parganas West Bengal)	Vanaspathi—(after effecting substantial expansion) ... [S E]	tons per day L/28 (2) 21 N 63 115 7-9-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
Shri C. R. Das Gupta, 6, Nandi Street, Calcutta-29 (West Bengal)	Steel forgings ... Heavy structurals—[N U] ...	tons p.a. L/1 A (3) 94 EI (M) 63 9,000 5-9-63 9,000
Schd. Ind. No. 2 (1)—Coal, Lignite, Coke and their Derivatives		
Shri Dwarka Prasad Agarwalla, Chandore Colliery, P.O. Jharra, Dist. Dhanbad, (Mouza Chandore, P.O., Jharra, Dist. Dhanbad, Bihar)	Coal—[C O B] ...	15,000 L/2 (1) 52 N 63 19-9-63
Pure Samla Coal Co Private Ltd., 108, Stephen House (6th floor) 4, Dalhousie Square East, Calcutta (P.O. Nutandanga, Dist. Burdwan, West Bengal)	do —[S E] ...	72,000 L/2 (1) 207 N 63 19-9-63
Schd. Ind. No. 4 (2)—Internal Combustion Engines		
Hindustan Motors Ltd., P.O. Uttarpara Dist. Hooghly, (West Bengal)	Automotive diesel engines (including 3,000 petrol engines)—[N A] ...	Nos. p.a. L/4 (2) 3 AEI 63 12-9-63 15,000
Premier Automobiles Ltd., Construction House, Ballard Estate, Bombay-1 (Maharashtra)	Automotive diesel engines (including meadows diesel and petrol engines)—[N A] ...	L/4 (2) 4 AEI 63 12-9-63 15,000
Simpson & Co. Ltd., 202—203, Mount Road, Madras-2 (Madras)	Automotive diesel engines... [S E]	6,000 L/4 (2) 5 AEI 63 12-9-63
Schd. Ind. No. 5 (1)—Electrical Equipments		
Jyoti Ltd., P.O. Chemical Industries, Baroda-3 (Gujarat)	Capacity per annum after expansion Secondary relays for protec- tion against over current short circuits etc. ... Primary relays for protection against over current and short circuits ... Relays, control devices and indicating devices such as over voltage relays, time relays, differential relays, signal relays, special pur- pose relays, synchroscop- cope, directional relays etc. Current and voltage regulators [S E]	Nos. L/5 (1) 88 EEI 63 9-8-63 3,600 1,200 960 600
Schd. Ind. No. 5 (4)—Electrical Equipment		
Geep Flash Light Industries Ltd., 28, South Road, Allahabad-1 (Uttar Pradesh)	Lamp caps for miniature bulbs—[N A] ...	million Nos. p.a. L/5 (4) 48 LEEI 63 12-9-63 10

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 5 (6)—Electrical Cables and Wires		
Express Cables Private Ltd., 16 Roy Lane, Calcutta-7 (Bihar State)	A.C.S.R. & A.A. Conductors [N U]	tons p.a. L/5 (6) 61 LEEI 63 2,000 17-9-63
Shri Ramesh Chandra G. Shah, C/o. M/s. Lalubhai Amichand, 225/27, Tardeo Road, Bombay-7 Proposed name : M/s. Bombay Conductors & Electricals Private Ltd., (Ahmedabad Dist., Gujarat)	do do do	L/5 (6) 62 LEEI 63 17-9-63
Nandram Narayandas, Sweet Cottage, Gwalior (Madhya Pradesh)	do do do	L/5 (6) 67 LEEI 63 17-9-63
Schd. Ind. No. 5 (8)—Electronic Equipment		
The Gandhi Electric Industries Private Ltd., 94, Meadows Street, Fort, Bombay-1 (Maharashtra)	Photo electric equipments ... Transistorised phase failure Automatic lighting control units Electronic adjustable speed Grinder load control equipment Process timber—[N A] ...	Nos. p.a. L/5 (8) 13 LEEI 63 500 17-9-63 250 100 100 100 250
The English Electric Company of India Ltd., 35, Golf Links, Post Box No. 147, New Delhi (Madras)	Electronic test equipment ... [N A]	units p.a. L/5 (8) 15 LEEI 63 360 20-9-63
Schd. Ind. No. 7 (5)—Automobiles		
Simpson & Co. Ltd., 202/203, Mount Road, Madras-2 Proposed name : M/s. Chassis Frame India Ltd. (Madras)	Pressings for automobiles ... [N U]	M. tons p.a. L/7 (5) 51 AEI 63 12,000 11-9-63
Simpson & Co. Ltd., 202/203 Mount Road, Madras-2 (Madras)	Commercial vehicle chassis in the 3-5 tonnes payload range—[N U] ...	Nos. p.a. L/7 (5) 49 AEI 63 12,000 12-9-63
Schd. Ind. No. 7 (7)—Transportation		
Voltas Ltd., 19, Graham Road, Ballard Estate, Post Box No. 1198, Bombay-1 (Maharashtra)	Fork lift trucks (petrol/diesel driven) ... Fork lift trucks (electrically driven) ... Handlift and pallet trucks ...	Nos. p.a. L/7 (7) 3 AEI 63 200 9-9-63 300 1,500
	Spares for the above [N A]	lacks of Rs. worth 5
Shri S. Ghose, 11, Government Place East, Calcutta-1 (Calcutta, West Bengal)	Pallet trucks (Electrically operated of 1,000 kgs. to 4,000 kgs.) capacity rider and non-rider types—[N U]	Nos. p.a. L/7 (7) 4 AEI 63 300 11-9-63

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 8-B (2)—Conveying Equipment		
Dynacraft Machine Co. Private Ltd., Juhu Lane, Andheri, Bombay-58 (Jogeshwari, Bombay, Maharashtra)	Conveying equipment—[S E]	lakhs of Rs. L/8 B (2) 55 MEI 63 worth p.a. 3-9-63 40
Schd. Ind. No. 9—Machine Tools		
Kholss Foundry (Regd.) Kashmir Road, Batala (Punjab)	Horizontal, vertical and universal milling machines Tool and cutter grinding machines—[S E]	Nos. p.a. L/9/131 MEI 63 11-9-63 36 24
R. S. Machine Tool Corporation, 435, Jissore Road, Calcutta-28 (West Bengal)	Milling machines and accessories—[N U]	sets p.a. L/9/132 MEI 63 11-9-63 120
Extrusion Processes Private Ltd., Ramabagh, Ghodbunder Road, Malad, Bombay-54 (Maharashtra)	Impact extrusion presses Trimming and finishing machines [N A]	Nos. p.a. L/9/130 MEI 63 11-9-63 36 36
Schd. Ind. No. 11—Earth Moving Machinery		
Kirloskar Pneumatic Co. Ltd., Hadapsar Industrial Estate, Poona-1 (Maharashtra)	Power transmission equipment (Torgue converters)... [N A]	Nos. p.a. L/11/9 AEI 63 9-9-63 2,400
Schd. Ind. No. 23 (1)—Textiles made wholly or in part of Cotton, including Cotton Yarn, Hosiery and Rope		
Raghuvanshi Mills Ltd., 11-12, Haines Road, Bombay-13 (Maharashtra)	6,788 Spindles for the manufacture of cotton yarn—[S E]	L/23/1/595 Tex B 63 19-9-63
Schd. Ind. No. 23 (2)—Textiles made wholly or in part of Jute, including Jute, Twine and Rope		
Anglo India Jute Mill Co. Ltd., Post Box No. 189, 31, Netaji Subhas Road, Calcutta (West Bengal)	100 looms for the manufacture of mixed fabrics containing jute and cotton/rayon—[S E]	L/23 (2) 69 J & C 63 16-9-63

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DURAI PACHAIAPPAN

DEALERS IN UTENSILS

216, GANDHI ROAD

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KANCHEEPURAM



BEST PLACE FOR COPPER AND BRASS VESSELS

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Name and full address of the undertaking and location	Articles of manufacture : capacity and type of licence	Licence number and date
Schd. Ind. No. 1-A (3)—Iron and Steel Castings and Forgings		
The Indian Smelting & Refining Co. Ltd., Industry House, 159, Churchgate Reclamation, Bombay-1 (Thana, Maharashtra)	Malleable iron castings (same capacity as licensed earlier) Change of location from Bhandrup to Thana—[Shifting]	L/1 A (3) EEI 63 17-8-63
National Rubber Manufacturers Ltd., Leslie House, 19, Chowringhee, Calcutta-13 (West Bengal)	Railway draft gears—[N A]...	Nos. p.a. L/1 A (3) 95 EI (M) 63 3,300
Schd. Ind. No. 1-B (1)—Non-Ferrous Metals and Alloys		
Kamani Engineering Corporation Ltd., Agra Road, Kurla (North) Bombay-70 (Maharashtra)	"Zinc ingots" (Secondary metals)—[N A]	M. tons p.a. L/1 B (1) 36 Met 63 25-9-63 600
Schd. Ind. No. 5 (1)—Electrical Equipment		
Gandhi Electric Industries Private Ltd., 94, Meadows Street, Fort, Bombay (Maharashtra)	High voltage transformers upto 100 K. V. ... Ignition transformers Technical cottage transformers Neon transformers—[S E]	Nos. p.a. L/5 (1) 89 EEI 63 9-9-63 50 120 60 900
Schd. Ind. No. 14—Medical and Surgical Appliances		
National Instruments Ltd., Jadavpur, Calcutta-32 (West Bengal)	Dial gauges Sphygmomanometer—[N A]	Nos. p.a. L/14/1 LEI (A) 63 11-9-63 700 1,000
Schd. Ind. No. 19 (1)—Inorganic Heavy Chemicals		
Premier Fertilisers Ltd., 150-A, Mount Road, Madras-2 (Cuddalore, Madras)	Synthetic cryolite—[N A]	tons p.a. L/19 (1) 97 NA Ch I 63 7-9-63 540
The Durgapur Projects Ltd., 10, Middleton Row, Calcutta-16 (Durgapur Dist. Burdwan, West Bengal)	Alum—[N A]	4,125 L/19 (1) 99 NA Ch I 63 9-9-63
Schd. Ind. No. 19 (2)—Organic Heavy Chemicals		
Excel Industries Private Ltd., 184-87, Ghodbunder Road., Jogeshwari, Bombay-60 (Maharashtra)	Oxalic acid—[N A]	tons p.a. L/19 (2) 22 Ch. V 63 19-9-63 500
Schd. Ind. No. 23 (1)—Cotton Textiles		
Kohinoor Mills Co. Ltd., Killick House, Home Street, Fort, Bombay-1 (Dadar, Bombay, Maharashtra)	Manufacture of cotton textiles—[S E]	automatic looms L/23 (1) 422 Tex B 62 24-8-62 500
Davangere Cotton Mills Ltd., Davangere (Mysore)	do do	500 L/23 (1) 425 Tex B 62 24-8-62
Lakshmi Mills Co. Ltd., Avanasi Road, Pappanaickenpalayam, Coimbatore-1 (Madras)	do do	500 L/23 (1) 426 Tex B 62 24-8-62

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Name and full address of the undertaking and location	Articles of manufacture; capacity and type of licence			Licence number and date
Birla Cotton Spinning & Weaving Mills Ltd., P.O. Birla Lines, Delhi-6 (Khurja, Uttar Pradesh)	Manufacture of textiles—[S E]	cotton	automatic looms 500	L/23 (1) 428 Tex B 62 27-8-62
Madura Mills Co. Ltd., Madurai (Aladiyoor Village, Ambasamudram, Madras)	do	do	500	L/23 (1) 430 Tex B 62 27-8-62
Standard Mills Co. Ltd., Mafatlal House, Backbay Reclamation, Bombay-1 (Dewas, Madhya Pradesh)	do	do	500	L/23 (1) 450 Tex B 62 15-10-62
Premier Mills (CBE) Ltd., Pulankinar P.O., Udamalpet, Coimbatore Dist. (Madras)	do	do	500	L/23 (1) 476 Tex B 62 21-11-62
Palani Andavar Mills Ltd., Udamalpet, Coimbatore Dist. (Madras)	do	do	500	L/23 (1) 496 Tex B 63 4-1-63
Kothari Textiles Ltd., Oriental Buildings, Armenian Street, Madras-1 (Singanallur, Madras)	do	do	500	L/23 (1) 526 Tex B 63 20-2-63
Shree Ram Mills Ltd., Fergusson Road, Parel, Bombay-18 (Maharashtra)	do	do	100	L/23 (1) 564 Tex B 63 24-4-63
Kishin Chand & Co. (India), 55/57, Empire Building, Fort, Bombay-1 Proposed name : Kishco Mills, (Maharashtra)	Manufacture of cotton corduroy and velveteen [N U]	...	48	L/23 (1) 566 Tex B 63 27-4-63
M. G. Corporation, 31, Forbes Street, Fort, Bombay (Khandwa, Madhya Pradesh)	Manufacture of textiles—[S E]	cotton	automatic looms 500	L/23 (1) 569 Tex B 63 2-5-63
Shree Katteri Textiles Private Ltd., 422, Mettupalayam Road, R. S. Puram P.O. Coimbatore-2 (Veerapandy Village Tehsil Coimbatore Dist., Madras)	Spindles for the manufacture of cotton yarn—[N U]	...	12,000	L/23 (1) 597 Tex B 63 21-9-63
Jaya Shree Textiles & Industries Ltd., P.O. Rishra Dist. Hooghly, (West Bengal)	Tape looms for the manufacture of cotton webbings [S E]	...	16	L/23 (1) 596 Tex B 63 21-9-63
Premasukhdass Trilokibhushan, P.O. Sirsa, Dist. Hissar, (Punjab)	Spindles for the manufacture of cotton yarn—[N U]	...	12,000	L/23 (1) 598 Tex B 63 24-9-63
Kalyanpur Lime & Cement Works Ltd., 2 & 3 Clive Row, Calcutta-1 (Banjari, Bihar)	Portland cement—[S E]	tons p.a.	2,00,000	L/35 (1) 25 Cement 63 23-9-63

A Unique Service to Brassware Industry

To help the age-old Brassware Industry at Kumbakonam, the Government of Madras has started a Brassware Servicing Centre to give technical assistance to artisans with modern machinery.



It also manufactures House-hold Utensils in Brass and Stainless Steel, Dusters, Sprayers, Hospital equipments, Brass building fittings, Radio components, Loud-speaker frame assembly horn cup, Transformer end cover, Steel furniture, Almirahs, Racks, Non-ferrous casting for electric water heaters and all other sheet metal works in ferrous and non-ferrous metal.

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deep drawing and pressings.
A trial will convince you

Service Centre for

BRASSWARE AND CUTLERY INDUSTRY, KUMBAKONAM.

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of the unique services in
FABRICATING TECHNIQUE
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SMALL INDUSTRIES
who manufacture component parts
required in

AUTOMOBILE INDUSTRY
HOME APPLIANCES
BUSINESS MACHINES
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may contact THE SUPERINTENDENT

**STATEMENT SHOWING THE CHANGES IN THE NAMES OF THE
OWNERS / UNDERTAKINGS EFFECTED DURING APRIL—SEPTEMBER 1963**

APRIL 1963

<i>The name of the original owner/the original name of the undertaking</i>	<i>The name of new owner/the new name of undertaking</i>	<i>Licence No. and date</i>
The Batala Desh Sewak Co-operative Sugar Mill Ltd., Batala	The Batala Co-operative Sugar Mills Ltd., Batala.	L/8/57—L/23/123 14-2-57 [N U] Punjab
Indian Sugar & General Engineering Corporation Ltd., Yamunanagar, Ambala Dist.	The Indian Sugar & General Corporation, Yamunanagar, Ambala Dist.	L/8 A-4 N-2/57 4-5-57 [S E] Punjab
	The Saraswati Sugar Syndicate, Ltd. Yamunanagar, Ambala Dist.	L/1 A-3 N-75/60 24-3-60 [C O B] Punjab
		L/3/1/60 AEI 24-3-60 [N A] Punjab
Amar Electrical & Mechanical Engineering Works, Ludhiana	Amar Machine Tools Private Ltd., Ludhiana	L/9 N-11/58 23-7-58 Punjab
		L/9 N-23/59 21-5-59 [N A] Punjab
		L/9/18/60 MEI 23-11-60 [S E] Punjab
M. P. Textiles Industries Ltd., Indore	Indore Spinning Mills Ltd., Indore	L/23/1/222 Tex B 62 4-4-62 [NU] Madhya Pradesh
Shri N.C. Roy	Mayurakshi Cotton Mills Ltd., Calcutta	L/23/1/285 Tex B 62 6-4-62 [N U] West Bengal
Shri V. Krishna Prasad	Anatpur Cotton Mills Ltd., Coimbatore	L/23/1/359 Tex B 62 22-5-62 [NU] Andhra Pradesh
Shri M. K. V. Reddy	Venkatalakshmi Mills Ltd., Hyderabad	L/23/1/361 Tex B 62 22-5-62 [NU] Andhra Pradesh
Kilburn & Co. Private Ltd., Calcutta	Kilburn & Co. Ltd., Calcutta	L/19/35/56—L/5/1/19 29-3-56 [N U] West Bengal
do	do	L/5/1 N-60/60 3-2-60 [N A] West Bengal
	Shri Osman Khan, Shri Mohammed Moinuddin Quraishi	Registration Certificate No. R 10 (a) 519 R 23/1/471 31-10-53 Andhra Pradesh

(Contd.)

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence No. and date
Shree Suryanarayana Spinning & Weaving Mills, Pandalapaka	Sree Suryanarayana Spinning Mills, Pandalapaka Shri N. V. V. Janakiramaiah, Pandalapaka, Managing partner of the leasees Janakiramiah & Co.	Registration Certificate No. R 10 (a) 86 R 23/1/81 31-5-54 Andhra Pradesh
Mahindra & Mahindra Ltd., New Delhi	Mahindra Ugin Steel Co. Ltd., New Delhi	L/1 N-6 N-22/61 4-9-61 [N U] Madras
Deepak Insulated Cable Corporation, Bangalore	Dee pak Insulated Cable Corporation Ltd., Bangalore	L/5/6/37 EEI 61 14-12-61 [N U] Mysore
do	do	L/65/6/45 LEEI 62 16-11-62 [N A] Mysore
Everest Refrigerants Private Ltd., Bombay	Everest Refrigerants Ltd., Bombay	L/19/1/49 N A Ch 1/61 29-7-61 [N A] Maharashtra
Shri Pranlal P. Doshi	Topandas Brothers Veraval, Leased to: Prakash Trading Co. (Solvent), Veraval	L/27/24/54 6-1-54 [N U] Gujarat
MAY 1963		
The National Foundry & Rolling Mills Ltd., Cuttack	Shri Nabakishore Mahanty, Cuttack	Registration Certificate No. R./4/86 R/1-A 7/64 16-11-63 (Orissa)
Unichem Laboratories, Bombay	Unichem Laboratories Ltd., Bombay	Registration Certificate No. R./22/6 17-9-52 (Maharashtra)
Hillman Industries Private Ltd., Calcutta	Dwarka Industrial Development Private Ltd., Calcutta	L/7/6 N 56/60 27-12-60 [N U] (West Bengal)

(Contd.)

Steel Boxes

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MANUFACTURERS OF BEST STEEL TRUNKS,
SUIT CASES AND IRON PRODUCTS

Proprietor:

T. S. C. RADHAKRISHNAN
EAST RAJA STREET :: PENNADAM [S. A. Dt.]

(Contd.)

The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence No. and date
R. A. Cole Private Ltd., Bombay	Indoplast Ltd., Bombay	Registration Certificate No. R. 12/1/5 3-7-57 (Maharashtra)
Glaxo Laboratories (India) Private Ltd., Bombay	Joseph Goronwy Kidd, Bombay	Registration Certificate No. R./22/37 6-10-52 (Maharashtra)
Unichem Laboratories, Bombay	Unichen Laboratories Ltd., Bombay	L/22/39/56 29-10-56 (N A) Maharashtra
		L/22 N 39/58 19-5-58 [S E] Maharashtra
		L/22 N 58/58 8-10-58 [N A] Maharashtra
		L/22 N 100/39 13-8-59 [N A] Maharashtra
		L/22 N 128/60 28-1-60 [N A] Maharashtra
		L/22 N 129/60 28-1-60 [N A] Maharashtra
		L/22/58/61 Ch. III 22-2-61 [S E & N A] Maharashtra
		L/22/59/61 Ch. III 23-2-61 [S E & N A] Maharashtra
		L/22/69/61 Ch. III 19-4-61 [S E] Maharashtra
		L/22/137/62 Ch. III 24-10-62 [N A] Maharashtra
		L/22/142/62 Ch. III 12-12-62 [S E] Maharashtra
Kaleswarar Mills Ltd., Coimbatore	Shri P S S. Somasundaram Chettiar Shri K. Ramunni Menon	Registration Certificate R. 10 (a) 104 R. 23 (1) 96 31-5-54 Madras
Arsi Textile Mills Ltd., Ahmedabad	Rohit Mills Ltd., Ahmedabad	L/23/1/58 Tex B 60 28-10-60 [N U] Gujarat
Nirlon Synthetic Fibres & Chemicals (Private) Ltd., Bombay	Nirlon Synthetic Fibres and Chemicals Ltd., Bombay	L/23 (5) N 100/58 12-12-58 [N U] Maharashtra
do	do	L/23 (5) N 199/60 15-7-60 [S E] Maharashtra

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence No. and date
Balsukh Ceramics Ltd.,	Balsukh Refractories and Ceramics Ltd.,	L/34 (2) N 3/58 28-3-58 [C O B] West Bengal
Chittoor Textiles Mills (P) Ltd.,	Chittoor Textiles Ltd.	L/23 (1) 355 Tex B 62 22-5-62 [NU] Andhra Pradesh
Modi Vanaspati Manufacturing Co.	Modi Arc Electrodes Company	L/4/135/56 1-12-56 [N A] Uttar Pradesh
S. R. M. Palaniappan & Co.	S. R. P. Tools Ltd.	L/12 (2) 64/62 M E I 7-5-62 [N U] Madras
R. A. Cole Ltd.	Indoplast Ltd	L/9/98 MEI 63 12-3-63 [N A] Maharashtra
East India Distilleries & Sugar Factories Ltd., Madras	E. I. D. Parry Ltd., Madras	L/15 (26) 54—L/19 (1) 16 20-12-54 [S E] Madras L/15 (88) 56—L/19 (1) 57 19-12-56 [S E] Madras
The Mysore Gold Mining Co. (KGF) Ltd.,	Government of India	Registration certificate No. R. 20/8—R. IB (1) 5 29-4-54 R. 29/9—R. IB (1) 6 29-4-54 R. 20/10—R. IB (1) 7 29-4-54 R. 20/11—R. IB (1) 8 29-4-54
English Electric Co. of India Private Ltd., New Delhi	English Electric Company of India Ltd., New Delhi	L/19/48/56—L/5/1/22 26-9-56 [N U] Madras L/5 (1) N 29/58 22-12-58 [N A] Madras L/5 (1) N 52/59 29-10-59 [N E] Madras L/5 (1) 11 EEI 60 15-9-60 [N E/NA] Madras L/5 (1) 17 EEI 60 27-10-60 [N E] Madras L/5 (1) 56 EEI 62 12-3-62 [S E] Madras L/5 (1) 56 EEI 62 12-3-62 [S E] Madras

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence number and date
Lucas Indian Service (Private) Ltd., Madras	Lucas-TVS Ltd., Madras	L/7 (5) N-78 60 21-3-60 [S E] Madras L/7 (5) 30/60 AEI 27-10-60 [N A] Madras
Sen Raleigh Industries of India Ltd., Calcutta	Sen-Raleigh Ltd., Calcutta	L/7 (5) 1 EEI 60 29-8-60 [S E/N A] West Bengal
R. A. Cole Private Ltd., Bombay	Indo-plast Ltd., Bombay	L/12/1 N 34/60 21-3-60 [S E] Maharashtra
International Computers & Tabulators Mfg. (India) Ltd., Bombay	International Computers & Tabulators Indian Manufacturing Co. Ltd., Bombay	L/13 (2) 1/62 LEI (A) 29-7-62 [N U] Maharashtra
Star Textile Engineering Works (Private) Ltd., Bombay	Star Textile Engineering Works Ltd., Bombay	L/8 A 1/19/61 11-5-61 [S E] Maharashtra
Sen-Raleigh Industries of India Ltd., Calcutta	Sen-Raleigh Ltd., Calcutta	L/15 (1) 3 EEI 60 28-9-60 [S E/N A] West Bengal
R. A. Cole Private Ltd., Bombay	Indo-plast Ltd., Bombay	L/19 (4) N 2/58 16-3-58 [N A] Maharashtra L/19 (4) N 27/59 24-12-59 (Shifting) Maharashtra
East India Distilleries & Sugar Factories Ltd., Madras	E. I. D. Parry Ltd., Madras	L/19 (14) N 42/59 22-10-59 [C O B] Madras
Tungabhadra Pulp & Board Mills Private Ltd., Bombay	Tungabhadra Pulp & Board Mills Ltd., Bombay	L/24 (3) 11/60 Ch 1 27-4-60 [N U] Maharashtra
Bihar Iron & Steel Rolling Mill, Calcutta Shri Ram Jiban Shah	Shri Jagannath Agarwal	L/1 A (7) N-158/60 16-1-60 [C O B] Bihar
Himco (India) Private Ltd., Bombay	G. M. C. Himco Industries Ltd., Delhi	L/5 (10) N-3/58 30-6-58 [C O B] Maharashtra
Western Equipment Co. (Private) Ltd., Bombay	Service Station Equipment Co. Private Ltd., Bombay	L/12-2/28 MEI 61 13-7-61 [N U] Maharashtra
Licensee : Government of West Bengal	Kalyani Spinning Mills Ltd., Unit No. 2, Calcutta	L/23 (1) 479 Tex (B) 62 27-11-62 [N U] West Bengal
Belverde Jute Mills Co. Ltd., Calcutta	Delta Jute Mills Co. Ltd., Calcutta	Registration Certificate No. R/10(b) 21—R/23 (2) 21 31-5-54 West Bengal

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence number and date
JUNE 1963		
India General Navigation & Railway Co. Ltd., Calcutta	The Revers Steam Navigation Co. Ltd., Calcutta	L/4/112/56 - L/1 A 4/13 29-9-56 [N A] West Bengal
The Eyre Smelting (Private) Ltd., Calcutta	Mr. G. W. Moore, (Director)	Registration Certificate No. R/20/15—R/1 B/1/11 West Bengal
Auto Liners (Madras) Private Ltd., Madras	Jonas Woodhead & Sons (India) Ltd., Madras	L/7/5/50/61 AEI 10-2-61 [N U] Madras
L. R. G. Naidu, Tirupur	L. G. Balakrishnan & Bros. (P) Ltd., Coimbatore	L/30/4 N 20/60 8-2-60 [N U] Madras
India General Navigation & Railway Co. Ltd., Calcutta	Rivers Steam Navigation Co. Ltd., Calcutta Macneill & Barry Ltd., Calcutta	Registration Certificate No. R/4/160—R/1-A (3) 9 7-1-57 West Bengal
Rajah Bagan Dockyard, Calcutta	Macneill & Barry Ltd., Calcutta	Registration Certificate No. R/7/2—R/7 (2) 2 18-9-52 West Bengal
Delhi Pulp Industries	Rajendra Paper Mills, Calcutta	L/24 (1) N-10/58 29-10-59 [S E] Punjab
Trivedi—Alvares Private Ltd., Bombay	Gleitlager (India) Private Ltd., Bombay	L/4 2) 13/60 AEI 1-11-60 (N U) Maharashtra
Mahindra & Mahindra Ltd., Bombay	International Tractor Company of India Ltd., Bombay	L/10 (1) N 1/N 6/59 2-9-59 [N U] Maharashtra
David Brown Mahindra Tractors Private Ltd., Bombay	do do do	L/10 (1) 4 AEI 60 15-6-60 [S E] Maharashtra
Delta Rope Works, Calcutta	Delta Rope Works (Private) Ltd., Calcutta	Registration Certificate No. R. 10 (b) 81/R. 23 (2) 78 31-5-58 West Bengal
Shri A. P. Bhattacharjee do N. B. do do M. S. do do N. C. do	Shri A. P. Bhattacharjee, Managing Director	
Licencee : Madhya Pradesh State Government	Madhya Pradesh State Industries Corporation	L/26 (1) N 7/57 15-11-57 [N U] Madhya Pradesh
Hindustan Gas & Industries Ltd., New Delhi	Industrial Plants Ltd.	L/9/47 MEI 61 23 6-61 [N A] West Bengal
Paramount Industrial Stores, Bombay	Nitin Engineering & Manufacturing Co. Private Ltd., Bombay	L/11/3 LEI (A) 62 30-11-62 [N U] Maharashtra
Shri L. G. Balakrishnan, Hindupur	Madanapalle Spinning Mills Ltd. Madanapalle	L/23 1) 354 Tex (B) 62 22-5-62 [N U] Andhra Pradesh
Jay Shree Textiles Ltd., Rishra	Jaya Shree Textiles & Industries Ltd., Rishra	L/34 6) N-2/60 24-2-60 [N A] West Bengal

(Contd.)

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IND-COM JOURNAL

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence number and date
JULY 1963		
Freezing Products Private Ltd., Madras	Refrigerators & Home Appliances (Private) Ltd., Madras	L/13 (3) 3 LEI 60 29-6-60 [N U] Madras
Mehrotra Bros., Calcutta	Steel forgings	L/1 A (3) 2/61 E 1 (M) 8-6-61 [N U] West Bengal
Tata Chemicals Ltd., Bombay	Lindane	L/19 (11) N 13/59 11-5-59 [N A] Gujarat (Surrendered)
Ulhas Oil & Chemical Industries Private Ltd., Bombay	Tamarind seed oil free tamarind seed powder	L/28 (1) N 27/58 20-6-58 [N A] Maharashtra
Jay Shree Textiles Ltd., New Delhi	Jaya Shree Textile & Industries Ltd., New Delhi	L/1 A (3) 84 MEI 61 3-1-61 [N A] West Bengal
Textile Corporation, Ahmedabad	Nutan Iron & Steel Works Ltd., Ahmedabad	L/1 A 3/80 62 EI (M) 6-11-62 [N U] Gujarat
The Madras Circle Pipe Dealers' Association Ltd., Madras	Tubes & Malleable Ltd., Madras	L/1 A (5) 12 MEI 60 5-9-60 [N U] Madras
Bayer—Agrochem Ltd., Bombay	Bayer (India) Ltd., Bombay	L/19 (11) 18/62 A & I 31-7-62 (C O B) Maharashtra
		L/22 (99) 62 Ch. III 3-1-62 [N U] Maharashtra
Jay Shree Textiles Ltd., New Delhi	Jaya Shree Textiles & Industries Ltd., New Delhi	Registration Certificate No. R. 23 5) 35 31-10-57 West Bengal
Arthur Import Export Co., Bombay	R. K. Synthetic Fibres Private Ltd., Bombay	L/23 (5) N 202/60 24-10-60 [N U] Maharashtra
East India Distilleries & Sugar Factories, Madras	E. I. D. Parry Ltd., New Delhi	Registration Certificate No. R. 8 (63)/R/25/62 13-10-52 Madras
Shah Steel Industries, Bombay	Shah Malleable Castings Ltd., Bombay	L/1 A (3) 72/62 EI (M) 6-4-62 [N U] Maharashtra
The General Electric Co. of India Manufacturing Private Ltd., Calcutta	The General Electric Co. of India Private Ltd., Calcutta	Registration Certificate No. R. 13 (A) 15/N/5/3/14 29-5-54 West Bengal
		L/19/53/56—L/15/1/4 19-11-56 [S E] West Bengal
		Registration Certificate No. R. 5 (9) 2 16-9-57 West Bengal

(Contd.)

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OCTOBER—DECEMBER 1963

(Contd.)

The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence number and date
The General Electric Co. of India Manufacturing Private Ltd., Calcutta	The General Electric Co. of India Private Ltd., Calcutta	L/6 (4) N 9/58 1-5-58 [S E] West Bengal L/15 (1) N 6/59 20-8-59 [N A] West Bengal L/15 (1) 2 EEI 60 3-8-60 [S E] West Bengal L/5 (9) 3 EEI 60 6-9-60 [S E] West Bengal L/5 (9) 4 EEI 61 2-2-61 [N A] West Bengal L/5 (3) 5 EEI 61 23-2-61 [S E] West Bengal L/5 (3) 6 EEI 61 6-3-61 [S E] West Bengal L/5 (8) 10 LEEI 63 19-6-60 [N U] Maharashtra L/8 A 6/13 MEI 62 6-4-62 [N U] Bihar L/19 (2) 3 Chem. V 62 30-3-61 [N A] Maharashtra L/19 (14) N 52/60 5-1-60 [N U] Punjab L/23 (1) 178/61 Tex B 18-12-61 [S E] Maharashtra L/23 (1) 491 Tex B 62 21-12-62 (Shifting) Madras
Lalji Ramji & Co., Bombay	Magnetape Co., Bombay	
Tata Iron & Steel Co. Ltd., Bombay	Tata Robins-Fraser Ltd., Bombay	
Bayer Agrochem Ltd., Bombay	Bayer (India) Ltd., Bombay	
National Air Products, New Delhi	National Air Products Private Ltd., New Delhi	
New Prabhad Mills	Sayaji Mills, No. 2, Bombay	
Viswam Mills (Spinning), Erode	J. K. K. Angappan & Bros. Erode Kandaswamy Spinning Mills, Erode	
AUGUST 1963		
The General Electric Company of India (Mfg.) Private Ltd., Calcutta	The General Electric Co. of India Private Ltd., Calcutta	L/14 (8) 56/L/5/2/8 S 23-3-56 [S E] West Bengal L/5 (1) N 7/57 12-6-57 [N U] West Bengal L/5 (1) N 8/57 24-6-57 [S E] West Bengal L/5 (1) N 30/58 26-12-58 [S E] West Bengal

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence No. and date
Himco (India) Private Ltd., Delhi	G. M. C. Himco Industries Ltd. Delhi	L/5 (1) 52 EEI 61 19-12-61 [S E] Maharashtra
Dominion Plastic Industries	Shri S. Viswanath, Director, Garware Plastics Private Ltd., Bombay	Registration Certificate No. R. 12 (1) 8 29-8-57 Maharashtra
Malur Cotton Mills Ltd., Malur	Malur Durga Mills Ltd., Malur	L/23 (1) 436 Tex B 62 3-9-62 [N U] Mysore
Somasundaram Paper Mills, Coimbatore	Somasundaram Paper Mills Ltd., Coimbatore	L/24 (1) N U 73/63 Ch. I 1-11-63 [N U] Madras
Zwick U.C.I. Testing Machines (India) Ltd. or Zwick Bharat Testing Machines Ltd., Bombay	Bharat Zwick Testing Machines Private Ltd., Bombay	L/15 (2) 1/60 LEI (A) 31-12-60 [N U] (Maharashtra)
Modi Vanaspati Manufacturing Co., Modinagar	Modi Gas & Chemicals, Modinagar	L/19 (14) N 37/59 4-7-59 (S E) U. P. L/19 (14) N 29/59 14-2-59 (C O B) U. P. L/19 (14) N 28/59 15-1-59 (C O B) U. P.
The Vishnu Pratap Sugar Works (Private) Ltd., P.O. Rajabazar, Khadda, Dist. Deoria (U.P.)	Rani Rebaty Devi Kr. Ram Pratap Narain Singh	Registration Certificate No. R. 8/131/R. 25/129 7-11-52 U. P.
Madan Engineering Tool Products, Delhi	Amoteep Machine Tools Private Ltd., Delhi	Registration Certificate No. R. 36 A 9/R/12/2/6 31-5-54 Punjab L/9 N 20/59 14-4-59 (S E) Punjab
Asiatic Foundries, Patiala	Asea Works Private Ltd., Patiala	L/1 N (3) 101 MEI 62 10-3-61 [N U] Punjab
Universal Electric Co. (India) Ltd., Faridabad	American Universal Electric (India) Ltd., Faridabad	L/5 (2) 12 EEI 61 7-9-61 (N U) Punjab
Lekhraj Manoharlal, Bombay	Lekhraj Manoharlal, Agarwal, Bombay	L/12/2/91/63 MEI 15-6-63 [N U] Maharashtra
Shri C. C. Desai, New Delhi	Galileo Instrument Ltd., New Delhi	L/15 (1) 3 EI (A) 62 9-3-62 (N U) Gujarat
Sri Podma Textiles Manufacturing Co. Ltd., Kodur Post, Cuddaph Dist.	Sree Padmavathi Mills Ltd., Kodur Post, Cuddaph Dist.	L/23 (1) 362 Tex (B) 62 22-5-62 (N U) Andhra Pradesh
Devidayal Tube Industries Private Ltd., New Delhi	Devidayal Tube Industries Ltd., New Delhi	L/20/10 56/L/1 B (2) 5 6-11-56 [N U] Maharashtra
Kesoram Cotton Mills Ltd., New Delhi	Kesoram Industries & Cotton Mills Ltd., New Delhi	L/19 (2) N 4/58 29-4-58 [N A] West Bengal

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The name of the original owner/the original name of the undertaking	The name of new owner/the new name of undertaking	Licence No. and date
Kesoram Cotton Mills Ltd., New Delhi	Shree Vallisappa Textiles Ltd., Bangalore	L/23 (1) 437 Tex B 62 3-9-62 [N U] Mysore
SEPTEMBER 1963		
Standard Electrodes Ltd., Bombay-1	Welding Electrodes & Metallic Alloys Private Ltd. Bombay-1	L/1 A (7) LEI (B) 63 14-1-61 [N U] Gujarat
Associated Electricals Private Ltd., Madras-1	India Meters Ltd., Madras-1	L/15 (1) 26 EEI 61 14-11-61 [N U] Madras
Deepak Industries Ltd., Calcutta-1	Eastern Spinning Mills Ltd., Calcutta-1	L/23 (1) 282 Tex B 62 6-4-62 [N U] West Bengal
Shri B. R. Shah, Bombay	Bharat Commerce & Industries Ltd., Calcutta	Registration Certificate No. R. 23 (5) 34 31-10-57 Maharashtra L/23 (5) 44 Tex D 63 26-6-63 [S E] Maharashtra
Shri S. R. Sengotiah, Tirupur	Neela Spinning Mills Private Ltd., Tirupur	L/23 (1) 94 Tex B 61 29-4-61 [N U] Madras
Ferro-Alloys India Private Ltd., Bhubaneswar	Indian Metals and Ferro-Alloys Ltd., Bhubaneswar	L/1 A (2) N 8/62 25-1-62 [N U] Orissa
The Saraswati Sugar Syndicate Ltd., Yamunanagar	The Saraswati Industrial Syndicate Ltd., Yamunanagar	L/1 A (3) N 75/60 24-3-60 (C O B) Punjab L/3 (1) 60 AEI 24-3-60 [N A] Punjab Registration Certificate No. R. 16/25/R/8 A (4) 3 31-5-54 Punjab L/8 A (4) N 2/57 4-5-57 [S E] Punjab
Ahuja Textile Mills, Hanumangarh	Shree Hanumangarh Textile Mills Ltd., Hanumangarh	L/23 (1) 295/62 Tex B 6-4-62 [N U] Rajasthan
Name of the licensee : Shri M. R. Maniar, Bombay	Laminated Plastic Private Ltd., Bombay	L/12 (1) 6/62 Ch. V 29-3-62 [N U] Gujarat
Electrolux India (Private) Ltd., Bombay	Kalinga Svenska Ltd., Calcutta	L/13 (3) N 11/59 23-11-59 [N U] Orissa
Jay Shree Textiles Ltd., Calcutta	Jaya Shree Textiles & Industries Ltd., Calcutta	L/23 (1) 121/59 14-5-59 [S E] West Bengal
Name of the licensee : Shri T. V. Angappan, Coimbatore	Visram Mills & Industries Ltd., Coimbatore	L/23 (1) 557 Tex B 63 25-3-63 [N U] Madras

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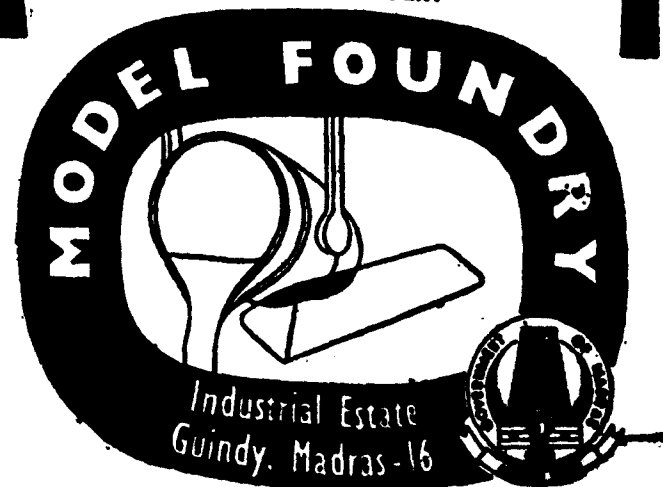
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LICENCES REVOKED DURING APRIL—SEPTEMBER 1963

APRIL 1963

Name of the industrial undertaking	Articles of manufacture	Licence number and date
Structural Fabricators Private Ltd., New Delhi	Cast iron castings	L/1 A (3) N 27/58 25-11-58 [N A] Delhi
Bharat Steel Industries, Bilthra Road, Dist. Ballia	do do	L/1 A (3) 36/61 EI (M) 31-10-61 [N U] U. P.
Oswal Screws & General Engineering Works, Ludhiana	Socket screws products	L/1 A (7) 3 LEI (B) 60 27-9-60 [N U] Punjab
Macneill & Barry Ltd., Calcutta	Tubular scaffolding and portable building fixtures	L/1 A (7) 45 EI (M) 62 25-6-62 [N A] West Bengal (Cancelled)
Podar Sons Private Ltd., Bombay	Injection moulding machines, compression moulding machines, extrusion machines, etc.	L/9/50 MEI 61 17-8-61 [N U] Maharashtra (Cancelled)
Sri Krishna Weaving Mills, Belgaum	Textiles made wholly or in part of cotton	Registration Certificate No. R 10 (a) 556 R 23 (1) 507 31-5-54 Mysore (Cancelled)
Modi Spinning & Weaving Mills Co. Ltd., Modinagar	Cotton cloth (Automatic Looms)	L/23 (1) 133 Tex - B) 61 4-9-61 [S E] Uttar Pradesh (Surrendered)
Megna Mills Co., Ltd., Calcutta	Writing, printing, wrapping and packing paper and pulp.	L/24 (1) N 27/60 21-4-60 [N U] Assam
D. C. M. Chemical Works, New Delhi	Ossein and gelatine	L/26/1/55 23-4-55 [N U] Delhi
Walchandnagar Industries Ltd., Bombay	Vegetable oils	L/27/20/53 N 28 (1) 10 9-5-57 [S E] Maharashtra (Cancelled)
The Bhagat Oil Mills, Calcutta	do do	L/28 (1) N 125/60 15-7-60 [S E] West Bengal
Ramchand Jagdishchand, Calcutta	Chinaware crockery	L/34 (4) 10/60 L. Ind, 15-7-60 [N U] Bihar
Jeevan Private Ltd., Bombay	Malleable iron castings	L/1 A (3) 71 MEI 60 10-11-62 [N U] Maharashtra
Khandelwal Ferro Alloys Ltd., Bombay	Steel castings, special steels, alloy steels, etc.	L/1 A (3) N 101/60 17-11-60 [N U] Maharashtra

(Contd.)

(Contd.)

Name of the industrial undertaking	Articles of manufacture	Licence number and date
K. C. P. Empocel Ltd., Madras	Pulp and paper plants	L/8 A-11 MEI 61 15-4-61 [N U] Madras
Bharat Engineering & Manufacturing Co., Chakalia P.O., Singhbhum Dist.	C. I. castings	Registration Certificate No. R 1 A (3) 12 31-10-57 Bihar
Dhansar Engineering Co. Ltd., P.O. Dhansar (Dist. Manbhum)	Steel castings	L/1 A (3) N 3/57 7-5-57 [S E] Bihar
Hanuman Foundries Ltd., Calcutta	Bolts, nuts and rivets	L/1 A (7) N 14/57 6-6-57 [N U] Punjab
N. H. Ojha & Co. Private Ltd., (Khandra Sitalpur Colliery), Calcutta	Coal, coke	Registration Certificates No. R. 3/352/R/2 (1) 350 31-5-54 West Bengal
B. Dharam Singh & Co. (Private) Ltd., New Delhi	Mopeds	L/7 (5) 71/61 AEI 29-8-61 [N U] Bihar (Cancelled)
Hindustan Gas Co. Ltd., Calcutta	Air compressors	L/8 B (12) 6/60 AEI 26-8-60 [S E] West Bengal
Bhagat Singh Bugga & Co. Ltd., Calcutta	Silicon carbide and fused alumina	L/8 C-3/3/LEI (B) 61 12-6-61 [N U] West Bengal
Engineering Development Private Ltd., Calcutta	Agricultural implements and wind mills	L/10/2 N 16/60 9-4-60 [N U] West Bengal
J. & K. Jute Mills Co. Ltd., Kanpur	Cotton yarn	L/23 (1) 241/62 Tex B 4-4-62 [N U] Uttar Pradesh
Bombay Chemicals Private Ltd., Bombay	Weedicides	L/19 (11) N 22/59 12-9-59 (N A) Maharashtra (Cancelled)
MAY 1963		
Hind Traders, Bombay	Pig iron	L/1 A (1) N 28/60 9-12-60 [N U] Maharashtra
Nathani Steel Yard, Bombay	Steel castings and steel forgings	L/1 A (3) 75 MEI 06 9-12-60 [N U] Maharashtra
Aryan Steels (Private) Ltd., Varanasi	do do	L/1 A (3) 112 MEI 61 19-4-61 [N U] Uttar Pradesh
Shri Nagardas R. Sangvi, Bombay	Die and free forged hammers (upto the weight of 1 Kg.) both sided wrenches (upto a maximum opening 36 x 11 mm.	L/12 (2) 12 MEI 61 19-1-61 [N U] Maharashtra
Ratilal Hand Tools Manufacturing Co.	Screw drivers (upto a maximum length of 300 mm miscellaneous tools.	
Ugar Sugar Works Ltd., P.O. Ugar, Khurd Dist. Belgaum	Acetone	L/19 (2) 8 Chem V. 62 23-6-62 [N A] Mysore (Licence Surrendered)

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Name of the industrial undertaking	Articles of manufacture	Licence number and date
J. K. Jute Mills Co. Ltd., Kanpur	500 looms for manufacture of cotton yarn.	L/23 (1) 446 Tex (B) 62 18-9-62 [S E] Uttar Pradesh (Surrendered)
Shri Mahendra Jagjiwan Talsania, Bombay	Vegetable oil	L/28 (1) 38/60 Ch. II 22-11-60 [N U] Andhra Pradesh
Shree Jagdish Oil Industries Private Ltd., Bombay	Cotton seed oil	L/28 (1) 1/62 Ch. II 17-1-62 [S E] Gujarat
Shri R. D. Govila Khurja	High tension and low tension insulators.	L/34 (6) N 5/60 8-9-60 [N U] Uttar Pradesh
Eastern Machinery & Trading Co., Bombay	Magnetic Recording Tapes	L/5 (8) 7 EEI 62 16-2-62 [N U] Maharashtra
Name of the licensee : Shri Pranlal P. Doshi, Veraval Name of the undertaking : Chorwad Cement Factory, Veraval	Portland cement	L/35 (1) N 7/59 29-5-59 [N U] Gujarat
Arun Textile Mills Ltd., Calcutta	A.C.S.R. & All Aluminium conductors	L/5 (1) N 77/60 30-5-60 [N U] Uttar Pradesh
Arun Aluminium Cables Factory, Mirzapur		
Shree Ram Mills Ltd., Bombay	Hydrovan compressors and vacuum pumps, CFT Rotary type Tilgh man compressors, vacuum pumps etc.	L/8 B 12 N 7/59 15-10-59 [S E] Maharashtra
E. M. Company, Calcutta	Wire drawing machines, stranding machines spooling machines etc.	L/9/69/60 22-8-60 (N U) Delhi (Cancelled)
Sree Visalakshi Mills Ltd., Madurai	Cotton cloth	L/10 (a) 455/57/L/23/1/289 10-1-57 [S E] Madras (Cancelled)
do	do do	L/23 (1) 134/61 Tex (B) 19-9-61 (S E) Madras (Cancelled)
do	do do	L/23 (1) 139/61 Tex B 30-9-62 [S E] Madras (Cancelled)
Ramdudd Ramkissendass, Calcutta	Cotton yarn	L/23 (1) 284 Tex B 62 6-4-62 [N U] West Bengal (Cancelled)
R. S. Sethi Gopikisan Agarwal, Tumsar	Printing, writing and wrapping paper, and pulp.	L/24 (1) N 55/60 28-7-60 (N U) Madhya Pradesh
Madhya Pradesh Pulp & Paper Mills Ltd.,		
Glass and Miniature Bulb Industries, Kanpur	Fluorescent Tubes	L/5 (4) 27 EEI 61 5-12-61 [N A] Uttar Pradesh

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Name of the industrial undertaking	Articles of manufacture	Licence number and date
Surendra Industries (Bombay) Private Ltd., Bombay	Automatic air compressors	L/8 B (12) 5 LEI 60 11-8-60 [N U] Maharashtra
Shevaroy Bauxite Products Co. Private Ltd., New Delhi	Aluminium Oxide grains	L/8-C (3) 1-A/LEI (B) 62 16-2-62 [N U] Maharashtra
Test Tubes Mechanical Industries, Bombay	Bolt threading machines, pipe threading machines, Surface grinders, etc.	L/9/29/60 MEI 9-1-61 [N U] Maharashtra (Cancelled)
Alta Laboratories Ltd., Bombay	Pentachlorophenol	L/19 (11) N 7/58 20-11-58 [S E] Maharashtra
Shri Madanlal Ambalal Parikh, Patala	Cotton Waste yarn	L/23 (1) 382 Tex B 62 20-7-62 [N U] Gujarat (Cancelled)
Bharat Kala Bhandar Ltd., Calcutta	Vegetable oil	L/28 (1) N 129/60 25-7-60 [N U] West Bengal
Hindustan Extractions Ltd., Bombay	Vegetable oils etc.	L/28 (1) N 113/60 19-3-60 [N U] Maharashtra
Shri P. R. Saboo, Calcutta	Fireclay bricks and magnesite bricks	L/34 (2) 32/60 Ch. IV 22-11-60 [N U] West Bengal
Shri D. K. Jadhav, Gwalior	High tension and low tension insula- tors	L/34 (6) 34/60 Ch. IV 13-12-60 [N U] Madhya Pradesh
JUNE 1963		
Hiralal Kedar Nath, Mathura Malleable Cast Iron Foundry, Mathura	Grey Iron Castings	L/1A (3) N-34/59 24-2-59 [N U] Uttar Pradesh
Kesar Sugar Works Ltd., Bareilly	Absolute and Industrial Alcohol	L/26 (1) 1/62-Ch. II 20-1-62 [S E] Uttar Pradesh
Hindustan General Electrical Corporation Ltd., Calcutta	High voltage and low voltage por- celain	L/34 (6) N-1/59 18-11-59 [N A] Bihar
Shri Girdhar Das Seth, Ghaziपुर Anand Paper Manufacturing Co., Ghaziपुर	Writing and printing paper and pulp	L/24 (1) 40 Ch. (1) 61 7-4-61 [N U] Uttar Pradesh
The Industrial Corporation Ltd., Bombay Behar Sugar Works Pachrakhi, Dist. Saran	Alcohol	L/26 (1) 4/61 Ch. II 31-7-61 [S E] Bihar

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Name of the industrial undertaking	Articles of manufacture	Licence number and date
Krishna Steel Industries Private Ltd., Bombay	Wire ropes	L/1A (7) 60/62 EI (M) 17-3-63 [N A] Maharashtra (Cancelled)
Krishna Brothers Ltd., Kishore Vadi, Dist. Gadchiroli	Controller slip couplings	L/5 (1) 71 EEI 62 13-9-62 [S E] Maharashtra (Cancelled)
J. K. Chemicals Ltd., Bombay	Sulphuric acid and triple super- phosphate	L/18 (1) 14/61—Ferts 11-12-61 [S E] Maharashtra
Anand Paper Industries (Private) Ltd., Calcutta	Printing and writing paper and pulp	L/24 (1) N-17/60 19-2-60 [N U] Uttar Pradesh
Jatia Cotton Mills, Calcutta	Reclaimed rubber	L/30 (4) 11/61 Ch. IV 28-6-61 [N U] West Bengal
Britannia Engineering Co. Ltd., Calcutta	Grinding machines	L/9/24/60 MEI 19-12-60 [S E] West Bengal
Gopal Rice Oil & Fertilizer Co., Sakkottai Kumbakonam, Tanjore Dist.	Rice bran oil	L/28 (1) 5/61 Ch. II 16-8-61 [N U] Madras (Cancelled)
Modi Sugar Mills Ltd., Modinagar (U.P.)	Cycle tyre and tubes	L/30 (1) 3/60 Ch. I [N A] Uttar Pradesh
JULY 1963		
Mithisons Private Ltd., Calcutta	Radiators for trucks and cars	L/7 (5) N 79/60 4-4-60 [N U] Bihar
Hind Laboratories Private Ltd., Ahmedabad	Glasslined vessels for chemical and pharmaceutical industries	L/8 A 10/2/61 MEI 15-4-61 [S E] Gujarat
Carrier International Ltd., Bombay	Air-condition and refrigeration equipment	L/13 (3) 1/60 AEI 29-4-60 [N U] Maharashtra (Surrendered)
Pioneer Equipment Co. Private Ltd., Bombay	Minoscopes and theodolites	L/16 (3) LEI (A) 60 16-12-60 [N U] Mysore
Mohanwi Corporation Private Ltd., New Delhi	Allied International Products Ltd., New Delhi	L/1 A (7) N 160/60 25-1-60 [N U] Delhi
Shri L. G. Ramamurthi, Coimbatore	Festo Elgi Private Ltd., Coimbatore	L/9/83 MEI 62 17-3-62 [N U] Madras
Bombay Oxygen Co. Bombay	Industrial Oxygen Company Private Ltd., Bombay	L/19 (14) N 55/60 14-1-60 [N U] Maharashtra
Hind Mills Ltd., Ahmedabad	The Ahmedabad Jupiter Spinning Weaving and Manufacturing Co. Ltd., Jupiter Mills No. 2 Ahmedabad M. Prakash & Co. Private Ltd., Ahmedabad-1	Registration Certificate R. 10 (a) 440 R. 23 (1) 404 31-5-54 Gujarat R/23 (5) 11 30-10-57 Gujarat

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OCTOBER—DECEMBER 1963

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(Contd.)

Name of the industrial undertaking	Articles of manufacture	Licence number and date
Shri S. L. Khamka, Bombay	The Calicut Modern Spinning and Weaving Mills Ltd., Bombay	L/23 (1) 335 Tex B 62 18-5-62 [N U] Kerala
Shri K. N. Ananthasivan, Kottayam	Kottayam Textiles Ltd., Kottayam	L/23 (1) 338 Tex B 62 18-5-62 [N U] Kerala
Shri Arvind Cotton Mills Ltd., Calcutta	Dumraon Textiles Ltd., Calcutta	L/23 (1) 249 Tex B 62 4-4-62 [N U] Bihar
National Magaldi Private Ltd., Calcutta	The National Tannery Co. Ltd., Calcutta	L/31 N 10/58 2-9-58 [N U] West Bengal
Radio & Electricals Manufacturing Co. Ltd., Bangalore	Ceramic capacitors	L/6 (4) N-6/57 17-8-57 [N U] Mysore
M. Dinesh & Co., Khadia, Char Rasta, Ahmedabad Geeta Oil Industries (Private) Ltd., Ahmedabad	Rice Bran oil	L/28 (1) 3/61 Ch. II 26-4-61 [N U] Gujarat
AUGUST 1963		
Shri Digvijay Cement Co. Ltd., Sikka, Via Jamnagar	Cast iron cylpebs	L/1A (3) N-91/60 30-5-60 [N A] Gujarat
Shri Amritlal Khimji Calcutta	Clutch Plates for automobiles	L/7 (5) 10/62 AEI 9-4-62 [N U] West Bengal
Jaisukhlal Ratilal Shah, Surendarnagar	Grinding media forged steel balls, cylpebs and special heat resistance cast iron car parts.	L/8 (C-3) 2 LEI (B) 62 26-2-62 [N U] Gujarat
Sanitex Chemical Industries Ltd., Baroda	Oxalic acid	L/15-83/56 L/19 (2) 1 19-11-56 [N A] Gujarat (Surrendered)
Mahalaxmi Laghu Udyog Private Ltd., Kota	Cotton waste yarn	L/23 (1) 174/60 5-10-60 [N U] Rajasthan
Ram Prakash & Sons, Mandi Bans, Moradabad	Cotton yarn	L/23 (1) 255/62-Tex (B) 5-4-62 [N U] Uttar Pradesh
Shri Rama Shaker Gupta, Kanpur	Cotton yarn	L/23 (1) 286/63-Tex (B) 24-7-62 [N U] Uttar Pradesh
Govind Oil Mills, Mandi Bans, Kanpur	Vegetable oils	Registration Certificate No. R/27 A/67 R/28 (1) 66 30-1-54 Uttar Pradesh
Jolly Brothers (Private) Ltd., Bombay	Corrugated of medium, liner paper, printing paper and pulp	L/24 (1) 23/60 Ch. (1) 31-10-60 [N U] Maharashtra

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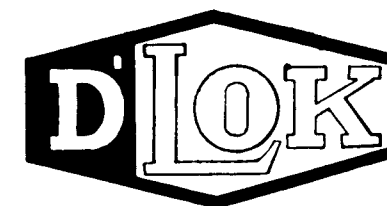
Name of the industrial undertaking	Articles of manufacture	Licence number and date
Tilawat Oil Seeds & Cakes Co. Private Ltd., Kanpur	Vegetable Oils	L/28 (1) 6/60 Ch. II 4-7-60 [U P] Cancelled
Damodar Valley Refractories Ltd., Calcutta	Firebricks	L/34 (1) N-13/60 11-10-60 [N U] Bihar
Hindustan Commercial Corporation Ltd., Banaras	Electric motors	L/8 B-11 N-18/59 16-6-59 [N U] Uttar Pradesh
The Basti Sugar Mills Co. Ltd., Basti, Dist. Basti	Sugar	L/25 N-64/61 29-12-61 [S E] Uttar Pradesh
Bharat Rubber & Allied Industries Ltd., Kapurthala	Other rubber goods	Registration certificate No. R/24/60 R/30 (4) 58 19-4-54 Punjab
Shri B. P. Modi, Nayasark, Cuttack	Fire bricks	L/34 (1) N-3/58 17-7-58 [N U] Orissa
Shri Ramaniklal Bhogilal Shah, Master Cement Manufacturing Co. Ltd., Bhavnagar	Portland Cement	L/35 (1) 13/61-Cement 7-6-61 [N U] Gujarat
Varat Plywood, Calcutta	Plywood	Registration Certificate No. R/41-14 R/36 (1) 14 8-4-54 West Bengal
Shri I. S. Johar, Bombay	Salt glazed stoneware pipes and specials.	L/37-82/56 23-11-56 [N U] Delhi
The Kasturi Engineers Ltd., Coimbatore	Steel Forgings	Registration Certificate No. R/4-163 R/1A (3) 12 7-1-57 Madras
The Upper India Glass Works Ltd., P.O., Yamunanagar, Dist. Ambala	Hallow-ware bottles	Registration Certificate No. R/37-118 R/33 (1) 22 27-10-52 Punjab
Union Paper & Board Mills Ltd., Calcutta	Writing, painting and wrapping paper and Pulp	L/25 (1) N-40/60 12-5-60 [S E] West Bengal
Kalinga Industries Ltd., Calcutta	Pig iron	L/1A (1) N-39/62 16-8-62 [N U] Andhra Pradesh (Cancelled)
Walchandnagar Industries Ltd., Bombay	Solvent extraction plants	L/8/A-9 17/59 17-5-59 [N A] Maharashtra (Cancelled)
D. U. Dhiman & Bros. Private Ltd Calcutta	Railway wagons	L/11 11/56 5-11-56 [N U] Uttar Pradesh
Window Glass Ltd., Calcutta	Sheet glass	L/12 12/60 12-12-60 [N U] West Bengal

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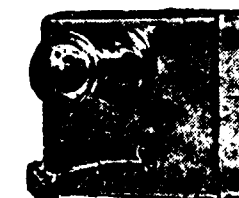
OCTOBER - DECEMBER 1963

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Name of the industrial undertaking	Articles of manufacture	Licence number and date
SEPTEMBER 1963		
Shri Murarji J. Vaidya, Bombay	Aluminium ingots	L/1B (1) 15/61 Met 21-11-61 [N U] Mysore
Philips India Ltd., Calcutta	Photo Flash Bulbs	L/5 (4) 4-EEI/60 25-7-60 Amended by licence No. L/5 (4) 22-EEI/61 22-8-61 [N A] Maharashtra
Kesar Pottery Works, New Delhi	Crockery, stoneware jars and electrical porcelain	L/37-86/56 L/34 (4) 9 12-12-56 [N U] Punjab
Tata Iron & Steel Co. Ltd., Bombay-1	Ferrosilican and Ferro-chrome	L/1 A (2) N 10/62 31-10-62 [N A] Orissa (Cancelled)
Garden Reach Workshops Ltd., Calcutta-24	Steam package boilers	L/3 (3) EEI 63 12-6-63 [N A] West Bengal (Cancelled)
OFU—Lynx Ltd., Calcutta	Furnaces	L/9 (30) 61 MEI 16-1-61 [N U] Maharashtra (Surrendered)
Chanrai Uttam Chand, Madras	Tyre tube valves	L/7 (5) N 73/60 19-2-60 [N U] Madras
Shri Girija Prasanna Cotton Mills Ltd., Calcutta	Cotton yarn	L/23 (1) 142/59 11-2-59 [N U] West Bengal
Balakrishna Mills (Private) Ltd., Madurai	Cotton textiles	Registration Certificate No. R. 10 (a) 248 R. 23 (1) 227 31-5-54 Madaras
Aysha Hosiery Factory (Private) Ltd., P.O. Palaparamba Malabar	Cotton textiles	do R. 10 (a) 436 R. 23 (1) 400 25-7-57 Kerala
Hindusthan Gas Co. Ltd., Calcutta	Cotton yarn	L/23 (1) 251 Tex B 62 4-4-62 [U N] Bihar
Shree Durga Glass Works, P.O. Barang, Dist. Cuttack	Glass bottles	L/33 (6) N 31/60 28-12-60 [S E] Orissa



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