

Manufacturing of metal titanium is another advantage of Ilmenite & Rutile. Metal titanium is as strong as steel. This metal withstands very high temperature. Therefore this metal is used in space crafts. Metal titanium is highly resistant to corrosion. Rutile is used in its raw form for manufacturing of welding rods. Zircon helps to make glossy and excellent finish for porcelain goods, sanitary ware, wall and floor tiles. Zircon is used in foundries and furnaces as this mineral withstands high temperature.

Ilmenite is used to manufacture Titanium Dioxide white Pigment which has its own peculiar characteristics such as pure whiteness and brightness than any other pigment can achieve, non-toxic in contrast to lead pigments, non-corrosive, stand high temperature, does not change its colour when continuously exposed to sunlight and has high hiding power. Therefore, the ultimate use of this mineral is in paper, paint, plastic, rubber, textile industries and to make printing ink.

Future Plans

The Present production of Lanka Mineral Sands Limited is limited to the above basic minerals. Our foreign buyers use these minerals as raw materials for the production of finished products such as titanium dioxide and titanium metal. The Company plans to convert ilmenite into synthetic rutile. Approximately 02 tonnes of ilmenite are required to produce one tonne of rutile. The price of rutile is eight to ten times higher than ilmenite. There are a few

foreign institutions that have acquired the technology. This technology is very expensive and a Vast capital investment is necessary. The technology has been already acquired by many countries with the assistance of foreign industrialists who are willing to invest in other countries. Foreign collaboration is necessary to implement the production of value added finished products to expand the activities of this company.



Plant

Kanijapura, Pulmoddai, Sri Lanka.

Sea vessel yard

Codbay, Trincomalee, Sri Lanka.



Ministry of State Resources & Enterprise Development

Lanka Mineral Sands Limited

(Fully Government owned Company)



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Introduction

Lanka Mineral Sands Limited is a fully Government owned Company under the Ministry of State Resources & Enterprise Development. The functions of the Company are mining, processing and exporting of heavy mineral beach sands.

The processing plant is located at Pulmoddai in the eastern coast of Sri Lanka 54 km north of Trincomalee. The beach sand at Pulmoddai is very rich in valuable minerals namely, ilmenite, rutile, zircon, monazite, and garnet with a percentage as high as 90% heavy minerals of which 65% is ilmenite, 10% rutile and 10% zircon. It has been estimated that a total quantity of 12.5 million tonnes of unexploited valuable mineral sands are available in and around Pulmoddai.

The mineral sand deposit is spread along five miles from Asirimata to Kokkila and about 400 yards towards the land side. Apart from that another mineral sand deposit spread along a distance of 45 miles is situated from Nilaveli to Mulativu. It is considered as the richest mineral sand deposit in the world.

Mining and Processing

Ilmenite processing plant was installed in 1961 and the commercial production commenced in 1963. The commercial production of Rutile and Zircon was initiated in 1968. At present the annual turn over is as follows.

Ilmenite	-	90,000	tonnes.
Rutile	-	9,000	tonnes
Zircon	-	5,500	tonnes

Mineral sand is mined by excavator / dragline machine. The raw beach sand is wet and the foreign trash and sea shells are separated by screening. To remove the light pebbles and tiny sea shells the mineral sand is conveyed through series of machinery. For further processing the heavy mineral fraction is pumped to the main processing plant.

Heavy magnetic minerals such as Magnetite and ilmenite are separated from non-magnetic, ilmenite so separated is pumped to the wet ilmenite dewatering godown and after drying, it is sent to the main ware house for shipping purpose. The non magnetic fraction is stored in separate wet stores.

The non magnetic fraction is conveyed to a series of high tension separators in order to separate conductive minerals from non conductive minerals such as rutile and also minor amounts of ilmenite carried over from magnetic separation. Non conductive mineral fraction contains other minerals Zircon, Garnet, Monazite and waste quartz. The conductive fraction consists of mainly Rutile and highly altered Hi Ti ilmenite and minor amounts of ilmenite. These Minerals in the conductive fraction are separated into individuals by several stages of high tension separators and Magnetic separators. Quartz present in the Non conductive fraction is separated by wet gravity methods. Balance being zircon, garnet and monazite are separated into final individuals by high tension and magnetic separators.

The remaining conductive matters pebbles and other foreign matters are removed by high tension separation machine and gravity tables. After further purification the remaining non conductive matters contain mainly Zircon and Monazite. These two products are separated by a high tension electro magnet separation machine and stored in separate ware houses.

Work Force

The employees are provided with pipe born water and the electricity from the national grid. Housing, entertainment and medical facilities are also available to them. There are about 600 employees. They are from every part of the island.

Sales

Approximately 100,000 tonnes of mineral sand are exported annually. Small parcel shipments are possible through Colombo harbour. At present most of our mineral sand products are exported from Trincomalee and Colombo harbours.

99% of our products are for-exportation and the revenue earned is in foreign exchange.

We export our products mostly to Japan United Kingdom, Eastern and western Europe, U.S.A., India, Pakistan and China.

Advantage

Ilmenite and rutile are used mainly to produce titanium dioxide. Titanium dioxide is present in ilmenite and rutile in percentages of 53% and 95% respectively. It is in white colour. Its opaqueness is deeper. Therefore titanium dioxide is used extensively in plastic, paper and ink industries. Of the total world production of titanium dioxide, 50% is used for ink industry, 25% in paper industry and 13% in plastic industry.