

INTRODUCTION

Terephthalic acid and its derivatives dimethyl-terephthalate are the petrochemicals which are a very important raw material in the production of polyesters. Terephthalic acid is produced in two forms a) The technical grade b) Polymer Grade. The technical grade terephthalic acid is unsuitable for use in polymer industry. Technical grade polymer is mostly used in the manufacturing process of polymer grade terephthalic acid and in the production of dimethyl-terephthalate.

Dimethyl-terephthalate though used widely for the production of various polymers, use of polymer grade terephthalic acid offers a lot of advantage. In addition terephthalic acid gives a higher yield per kilogram of starting material and less ethylene glycol is needed during polyesterification. This increases the final polymer quality.

The importance of the terephthalic acid was only realized after World War II. The first few companies to commercialize the use of the fibers made from poly ethylene terephthalate were Imperial Chemical Industries in the UK in 1949 and by Dupont in US in 1953. The fibers were made from dimethyl-terephthalate and ethylene glycol. Terephthalic acid was first manufactured by a dilute nitric acid oxidation of p-Xylene. This type of oxidation involved the use of air in the initial oxidation step to reduce the consumption of nitric acid. This method is no longer used.

The tremendous growth in the industry involving the use of terephthalic acid may be attributed to the growing demand for the polyester in the textile field. In the 60's all the terephthalic acid produced was used in the manufacture of dimethyl-terephthalate. But due to the advancement in technology polymer grade terephthalic acids are produced in a considerably large amount. In addition to all these factors the chemical is considerably non toxic in nature with very few special measures to be taken during handling.

The current demand for PTA in India is approximately 500 thousand tons. Its main applications are textiles, PET bottles and film. Future growth is predicted to be extremely high, with demand increasing by approximately 20% per year.

The global demand for PTA continues to grow, with especially high growth exhibited in India and China which have high rates of economic growth. The market for PTA in India is projected to reach 1 million tons by the end of 2002.

Some of the existing Terephthalic acid plants all over the world are listed below

Company	Location	Capacity (TPA)
Reliance Industries	Patalganga, India	75,000
Reliance Industries	Hazira , India	350,000
DuPont	Kuan-Yin, Taiwan	350,000
PT Polyprima Karyareksa	Indonesia	350,000
Yizheng Chemical Fibre	China	450,000