

## INDUSTRIAL VISIT TO SUPREME PLASTICIZERS

Industrial visit was carried out at SUPREME PLASTICIZERS on 21 April, 2017 for second semester M-Tech students (Industrial Electronics). The main objective behind the visit was to make student understands aware about how various activities related to Production of chemicals-Dimethyl phthalate (DMP) and Diethyl phthalate (DEP) are carried out in the company and implementing operations research techniques in order to improve the process. We interacted with Mr D. Srinath, CEO who took us around the industry and explained the esterification process.



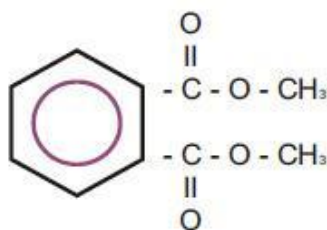
### Esterification process

Supreme Plasticizers manufactures and supplies three phthalate plasticizers which are Dimethyl Phthalate (DMP), Diethyl Phthalate (DEP). Product specifications for each of them are as below

Dimethyl Phthalate (DMP)  $(CH_3)_2\{C_6H_4(COO)_2\}$

DMP(CAS no. 131-11-3) is the aromatic diester of methyl alcohol and phthalic acid, manufactured by catalytic esterification of methyl alcohol with phthalic anhydride.

DMP is a colourless, light fast, faint aromatic odoured liquid and finds applications as plasticizers for nitrocellulose and cellulose acetate resins. It yields excellent films having good adhesion with both, in proportions upto 75% of the weight of the cellulose ester. It also plasticizes rubber and Poly Vinyl Acetals. Other applications include Fiber Reinforced Plastics, solid rocket propellants, lacquer plastics, rubber coating agents, safety glass, molding powders, repellants and cement concrete additive, insect perfumery compounds



Serial No.		Specifications
1.	APPEARANCE	Clear, Colourless Liquid
2.	ODOUR	Faint sweet smell
3.	COLOUR	10 Hazen( max)
4.	ACIDITY(As phthalic acid)	0.01%(max)
5.	ESTER VALUE%mass/mass	99.0%-100.5%
6.	REFRACTIVE INDEX at 27 °C	1.512

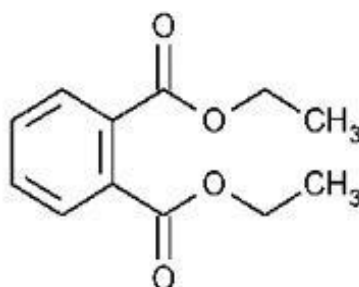
### Diethyl Phthalate (DEP) {C<sub>6</sub>H<sub>4</sub>(COO.C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>}

DEP (CAS No. 84-66-2) is the aromatic diester of ethyl alcohol and phthalic acid, manufactured by catalytic esterification of ethyl alcohol and phthalic anhydride.

DEP enjoys wide popularity for lacquer work. It is a good wetting medium in which to grind solid pigments. It is also a good plasticizer for cellulose acetate, cellulose nitrate, ethyl cellulose, di-benzyl cellulose and Glyceryl Phthalate resins. It is a good solvent for ester gum, Cumarone, Benzyl Acetate, vinyl and Cyclohexanone-formaldehyde resins. It is used widely in the perfumery industries as a solvent and fixative, as an alcohol denaturant, camphor substitute and in insecticidal sprays.

Serial No.

1.



Specifications

Clear, Colourless  
Liquid

2.	ODOUR	Alcoholic smell (faint disagreeable odour)
3.	COLOUR	Pale yellow
4	ACIDITY(As phthalic acid)	0.01% (max)
5.	ESTER VALUE %mass/mass	503
6.	REFRACTIVE INDEX at 27 °C	1.501

## About the company

Supreme Plasticizers established in the year 1990 at Mysore city, India have accomplished a position of excellence in the field of manufacturing and supply of Phthalate Plasticizers. Experienced workforce having versatile knowledge about the underlying intricacies of the processes has empowered the company to bring customized features in the products.

The cutting edge manufacturing and infrastructural facilities assist in bringing innovation in product presentation according to the changing trends in the industry. The manufacturing unit is fully mechanized with the latest machinery and other process equipment is in use. Manufacturing flawless products with higher grade has been possible through the alert quality control process at every level of production and by using the superior quality of raw materials.

Supreme Plasticizers has attained strong foothold in domestic market under the leadership of CEO Mr. D. Srinath and Mr. Vishal. S. Due to their strong business acumen and in-depth knowledge, Supreme Plasticizers has established itself as a reliable supplier of high quality Plasticizers catering to both domestic and international markets consistently.

## Environmental protective measures taken by the company

Supreme Plasticizers has contributed to the environment by installing various systems to tap renewable energy. Turbine Ventilators have been installed which work as industrial ventilation fans. These turbines operate using wind energy. Also a large number of solar lights running on solar energy have also been installed in the premises.

Rainwater harvesting for collecting, filtering and storing rainwater for re use has been installed. The company site has been redesigned to provide an accumulation tank (kalyani). in the area, which ends at a natural slope. When it rains, water flows over the slope and collects in the tank. This percolated rain water supports a large eco system of animals thereby improving the overall health of the environment and its eco system.

## Conclusion

The students have learnt about the esterification process for the manufacturing of phthalate plasticizers and given with the task of application of operations research techniques in order to improve the yield, reduce the processing time. We are very much thankful to both the organization for their co-operation and support. Special thanks to Dr.M G Veena madam for providing a great opportunity to visit the industry and uprooting our knowledge.