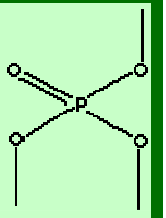
TRIMETHYL PHOSPHATE



PRODUCT IDENTIFICATION	
CAS NO.	512-56-1
EINECS NO.	208-144-8
FORMULA	$(CH_3O)_3P(O)$
MOL WT.	140.08
H.S. CODE	2919.00
TOXICITY	Oral rat LD50: 840 mg/kg
SYNONYMS	Phosphoric Acid, Trimethyl Ester; TMP; Methyl phosphate; Trimethoxyphosphine oxide; Trimethyl orthophosphate; Trimethylfosfat;(Czech) O,O,O-Trimethyl phosphate; Trimethylphosphat (German); Fosfato de trimetilo (Spanish); Phosphate de triméthyle (French);
DERIVATION	
CLASSIFICATION	

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	clear liquid
MELTING POINT	-46 C
BOILING POINT	197 C
SPECIFIC GRAVITY	1.210
SOLUBILITY IN WATER	good
AUTOIGNITION	
pH	
VAPOR DENSITY	4.8
NFPA RATINGS	Health: 2; Flammability: 1; Reactivity: 0
REFRACTIVE INDEX	1.393 - 1.397
FLASH POINT	>148 C
STABILITY	Stable under ordinary conditions

APPLICATIONS

Trimethyl Phosphate is a methylating agent for nitrogen heterocyclic compounds. It is used as acolor inhibitor for fibers (e.g.polyester) and other polymers. This compound is used as a solvent for aromatic halogenations and nitrations and for pesiticides and pharmaceuticals. It is used as a gasoline additive.

SALES SPECIFICATION	
APPEARANCE	clear liquid
COLOR, APHA	5 max
TRANSMITTANCE	90.0% min
WATER	0.1% max
ACID VALUE	0.2 max (KOH mg/g)

TRANSPORTATION	
PACKING	240kgs in drum
HAZARD CLASS	
UN NO.	

OTHER INFORMATION

European Hazard Symbols: XN, Risk Phrases: 22-36/37/38, Safety Phrases: 36/37-45

GENERAL DESCRIPTION OF PHOSPHORIC ACID

Phosphoric acid is a phosphorus-containing inorganic acid made up of phosphorus, oxygen, and hydrogen. In a broardened term, it includes the monomeric (orthophosphoric acid), dimeric

(pyrophosphoric acid), and polymeric (metaphosphoric acid) forms of the acid. Phosphoric acid commonly indicates the monomeric form (orthophosphoric acid, H_3PO_4). On heating to about 225 C, it dehydrates to form pyrophosphoric acid and to metaphosphoric acid at higher temperatures. Pyrophosphates are salts of pyrophosphoric acid and metaphosphates are salts of metaphosphoric acid. The pyrophosphates are formed by the loss of 1 molecule of water from 2 moles of an orthophosphate. Pure orthophosphoric acid is a crystalline solid; melting point 42 C; soluble in alcohol, and very soluble in water. Phosphoric Acid violently polymerizes under the influence of azo compounds, epoxides and other polymerizable compounds. It forms toxic fumes of phosphorous oxides when combusted. It is a medium strong acid and attacks metals to release flammable hydrogen gas. Decomposition may occur on contacting with alcohols, aldehydes, cyanides, ketones, phenols, esters, sulfides, halogenated organics compounds.

Phosphoric acid is essential in the body organism as the constituent of bones and teeth as well as in many metabolic process of carbohydrate, fat and protein. Phosphoric acid is abundant in natural foods as the form of free phosphoric acid itself or as the mineral salts (potassium, sodium or calcium). Phosphoric acid is used to acidify foods and beverages. But the continuous and excessive absorption of beverages particularly Coca Cola and Pepsi Cola which contain large amount of phosphoric acid should be limited. Phosphate excretion takes place in the form of calcium phosphate. The excessive amounts of phosphoric acid in the body may cause calcium deficiency which causes poor teeth and weak bone density (osteoporosis). Phosphoric acid is used in pharmaceutical preparations as a solvent and as a gastric acidifier orally. Phosphoric acid is important raw material in industrial field. It is a tribasic acid which can forms phosphates with either one, two, or all three of the hydrogens by replacing with some other positive ion. It is used in making fertilizers, electrolytes, electroplating and derusting solutions. It is used in the manufacture of industrial cleaning products, other inorganic and organic phosphoric chemicals, foundry resins, paints, enamels and refractory, antifreeze productions, and textile process materials. It is used in water treatment. Food grade phosphoric acid is used; as a acidulation in soft drink (particularly cola); ph control in imitation jellies; nutrient in production of yeast; bacteria growth control in selected processed foods; flocculating agent for clarification of sugar juices after liming process.

- Phosphorous acid: a diprotic acid which contains one hydrogen bonded directly to the central phosphorus atom and two hydrogens bonded to oxygen
- Phosphite:any salt, ester or anion of phosphorous acid
- Phosphate: any salt, ester or anion of phosphoric acid
- Phosphide: any binary compound of phosphorus with another element or radical
- Phosphine: binary compound of phosphorus with hydrogen or organic compounds derived from this