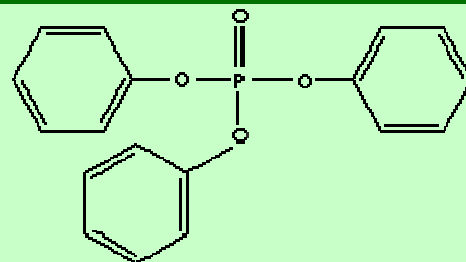


TRIPHENYL PHOSPHATE

PRODUCT IDENTIFICATION

CAS NO.	115-86-6
EINECS NO.	204-112-2
FORMULA	$(C_6H_5O)_3PO$
MOL WT.	3296.29
H.S. CODE	2919.00
TOXICITY	Oral rat LD50: 3500 mg/kg



SYNONYMS Phosphoric Acid Triphenyl Ester; Fosfato de trifenilo (Spanish); Phosphate de Triphenyle; TPP; Trifenylfosfat; Triphenoxyphosphine Oxide; Phosphate de triphényle (French);

DERIVATION from phosphorus oxychloride and phenol

CLASSIFICATION

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white to off-white flake or crystal
MELTING POINT	49 - 51 C
BOILING POINT	245 C
SPECIFIC GRAVITY	1.185-1.202
SOLUBILITY IN WATER	Insoluble
SOLVENT SOLUBILITY	Soluble: Chloroform, Carbon Tetrachloride, Ether, Benzene; moderately soluble in ethanol
AUTOIGNITION	500 C
pH	
VAPOR DENSITY	
NFPA RATINGS	Health : 2 Flammability : 1 Reactivity : 0
REFRACTIVE INDEX	1.552-1.563
FLASH POINT	220 C
STABILITY	Stable under ordinary conditions

APPLICATIONS

TPP is a non-flammable crystalline compound; melts at 49-50 C; soluble in benzene, chloroform, ether, and acetone. It hydrolyses rapidly in alkaline solutions at normal ambient temperature to give phosphoric acid, diphenyl phosphate and phenol, readily hydrolyses in strong acidic conditions at high temperature but slowly in acidic and neutral solutions. TPP is used as;

- Flame-retardant in many plastics and reins especially in phenolic resin for the manufacture of electrical and automobile parts.
- Component of hydraulic fluids and lubricant oils.
- Non-flammable plasticizer or additive in cellulose for photographic films, polyester and polyurethane.
- Non-combustible substitute for camphor in celluloid for fireproof.
- Plasticizer in lacquers and varnishes, vinyl automotive upholstery and in cellulose acetate articles.
- Impregnating agent for roofing paper

SALES SPECIFICATION

APPEARANCE	white to off-white flake or crystal
COLOR, APHA	45 max

MELTING POINT	47 C mi
H ₃ PO ₄	0.01% max
FREE PHENOL	0.05% max
TRANSPORTATION	
PACKING	25kgs in bag
HAZARD CLASS	
UN NO.	

GENERAL DESCRIPTION OF FLAME RETARDANT AGENT

Flame Retardant are substances that can be chemically inserted into the polymer molecule or be physically blended in polymers after polymerization to suppress, reduce, delay or modify the propagation of a flame through a plastic materials. There are several classes of flame retardants; Halogenated Hydrocarbons (Chlorine and Bromine containing compounds and reactive flame retardants), Inorganic flame retardants (Boron compounds, Antimony oxides, Aluminium Hydroxide, molybdenum compounds, zinc and magnesium oxides), Phosphorous containing compounds (Organic phosphate esters, phosphates, halogenated phosphorus compounds and inorganic phosphorus containing salts).

Class of Flame Retardants

- Inorganic
 - Metal hydroxides
 - Aluminium hydroxide
 - Magnesium hydroxide
 - Orthers
 - Antimony compounds
 - Antimony trioxide
 - antimony pentoxide
 - Sodium antimonate
 - Others
 - Boron compounds
 - Boric acid
 - Borax
 - Zinc borate
 - Others
 - Other metal compounds
 - Molybdenum compounds
 - Titanium compounds
 - Zirconium compounds
 - Zinc compounds
 - Zinc stannate
 - Zinc hydroxy-stannate
 - Others
 - Others
 - Phosphorus compounds
 - Red phosphorus
 - Ammonium polyphosphate
 - Others
 - Other inorganic flame retardants
 - ammonium sulfamate
 - ammonium bromide

- Others
- Halogenated organic
 - Brominated
 - Tetrabromobisphenol A
 - Decabromodiphenyl ether
 - Octabromobiphenyl ether
 - Tetrabromobiphenyl ether
 - Hexabromocyclododecane
 - Tribromophenol
 - Bis(tribromophenoxy) ethane
 - Tetrabromobisphenol A polycarbonate oligomers
 - Tetrabromobisphenol A epoxy oligomers
 - Others
 - Chlorinated
 - Chlorinated paraffins
 - Bis(hexachlorocyclopentadieno)cyclo-octane
 - Others
- Organophosphorus
 - Non-halogenated compounds
 - phosphate esters
 - Trialkyl phosphates
 - Triaryl phosphates
 - Aryl-alkyl phosphates
 - Others
 - polyols
 - phosphonium derivatives
 - phosphonates
 - Others
 - Halogenated phosphates
 - Tris(1-chloro- 2-propyl) phosphate
 - Tris(2-chloroethyl) phosphate
 - Tris(2,3-dibromopropyl)phosphate
 - Others
- Nitrogen-based
 - Polyurethanes
 - Polyamides
 - Melamine and its salts
 - Guanidine compounds
 - Others