

Trihexyl phosphate (THP)

Company Information

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Product Identification

【Product Name】

Triethyl phosphate

【Synonyms】

Ethyl phosphate

TEP

【CAS】

78-40-0

【Formula】

C₆H₁₅O₄P

【Molecular Weight】

182.16

【EINECS】

201-114-5

【RTECS】

TC7900000

【RTECS Class】

Mutagen; Reproductive Effector; Primary Irritant

【Merck】

12,9806

【Beilstein/Gmelin】

1705772

【Beilstein Reference】

4-01-00-01339

【EC Index Number】

015-013-00-7

【EC Class】

Harmful

Physical and Chemical Properties

【Appearance】

Colorless liquid, mild odor.

【Solubility in water】

Slightly soluble

【Melting Point】

-57

【Boiling Point】

215

【Vapor Pressure】

0.18 (25 °C)

【Density】

1.07 g/cm³

【Partition Coefficient】

1.08

【Heat Of Vaporization】

43.7 kJ/mol

【Usage】

Used as a catalyst in the production of acetic anhydride by the ketene process, as a desensitizing agent for peroxides, and as a solvent and plasticizer for cellulose acetate.

【Saturation Concentration】

1316 ppm (0.1%) at 39.6 C (calculated)

【Vapor Density】

6.28

【Refractive Index】

1.407 (20 C)

First Aid Measures

【Ingestion】

Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

【Inhalation】

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

【Skin】

Get medical aid if irritation develops or persists. Wash clothing before reuse. Flush skin with plenty of soap and water.

【Eyes】

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Handling and Storage

【Storage】

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from

incompatible substances.

【Handling】

Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Wash clothing before reuse.

Hazards Identification

【Inhalation】

May cause respiratory tract irritation.

【Skin】

May cause skin irritation.

【Eyes】

May cause eye irritation.

【Ingestion】

May cause irritation of the digestive tract. May be harmful if swallowed. May inhibit cholinesterase activity, thereby producing nervous system effects.

【EC Risk Phrase】

R 22

【EC Safety Phrase】

S 25

Exposure Controls/Personal Protection

【Personal Protection】

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate protective gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to prevent skin exposure.

【Respirators】

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator w

hen necessary.

【Exposure Effects】

Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Chronic ingestion may cause neurological symptoms. Reproductive effects have been reported in animals.

【Poison Class】

4

Fire Fighting Measures

【Flash Point】

115

【Autoignition】

480

【Fire Fighting】

Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Containers may explode when heated. Extinguishing media: Water or foam may cause frothing. In case of fire use water spray, dry chemical, carbon dioxide, or chemical foam. Use agent most appropriate to extinguish fire. Cool containers with flooding quantities of water until well after fire is out.

【Upper exp. limit】

10

【Lower exp. limit】

1.7

【Fire Potential】

Slight when exposed to heat or flame.

Accidental Release Measures

【Small spills/leaks】

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. C

lean up spills immediately, using the appropriate protective equipment. Remove all sources of ignition. Provide ventilation.

Stability and Reactivity

【Disposal Code】

3

【Stability】

Stable under normal temperatures and pressures.

【Incompatibilities】

Strong oxidizing agents - strong bases.

【Decomposition】

Carbon monoxide, oxides of phosphorus, irritating and toxic fumes and gases, carbon dioxide.

【Combustion Products】

May produce hazardous decomposition products such as carbon dioxide, carbon monoxide and oxides of phosphorus.

Transport Information

【HS Code】

2919 00 90