

## **【Product Name】 Di(2-ethylhexyl) phosphate**

### **【Synonyms】**

bis(2-Ethylhexyl) hydrogen phosphate

bis(2-ethylhexyl) phosphate

Dioctyl acid phosphate

HDEHP

Phosphoric acid di(2-ethylhexyl) ester

**【CAS】** 298-07-7

**【Formula】** C<sub>16</sub>H<sub>35</sub>O<sub>4</sub>P

**【Molecular Weight】** 322.43

**【EINECS】** 206-056-4

**【RTECS】** TB7875000

**【RTECS Class】** Primary Irritant

**【Beilstein/Gmelin】** 1712988

**【Beilstein Reference】** 4-01-00-01786

**【EC Class】** harmful, corrosive

## **Physical and Chemical Properties**

**【Appearance】** Odorless light yellow liquid.

**【Solubility in water】** Insoluble

**【Melting Point】** -50

**【Boiling Point】** 393

**【Vapor Pressure】** 3E-7 (25 C)

**【Density】** 0.9758 g/cm<sup>3</sup> (20°C)

**【pKa/pKb】** 1.47 (pKa)

**【Partition Coefficient】** 6.09

**【Heat Of Vaporization】** 70.6 kJ/mol

**【Heat Of Combustion】** -10464 kJ/mol

**【Usage】** Additive to lubrication oils, corrosion inhibitor and antioxidant.

**【Vapor Density】** 11.46

**【Refractive Index】** 1.443 (20 C)

## **First Aid Measures**

**【Ingestion】** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**【Inhalation】** Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not use mouth-to-mouth respiration if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**【Skin】** Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**【Eyes】** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation is required (at least 30 minutes).

## **Handling and Storage**

**【Storage】** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area.

**【Handling】** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Do not ingest or inhale. Discard contaminated shoes.

## **Hazards Identification**

**【Inhalation】** Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects.

**【Skin】** Causes skin burns. May be harmful if absorbed through the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

**【Eyes】** Causes eye burns. May cause chemical conjunctivitis and corneal damage.

**【Ingestion】** May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. May cause systemic effects.

**【Hazards】** When heated, vapors may form explosive mixtures with air: indoors, outdoors, and sewers explosion hazards.

**【EC Risk Phrase】** R 21 34

**【EC Safety Phrase】** S 26 36/37/39 45

**【UN (DOT)】** 1902

## **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】** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

**【Exposure Effects】** Effects may be delayed.

**【Poison Class】** 2

## **Fire Fighting Measures**

**【Flash Point】** 191

**【Autoignition】** > 300

**【Fire Fighting】**

Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Extinguishing media: Do NOT get water inside containers. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.

**【Fire Potential】**

Slight risk when exposed to heat or flame. May form flammable hydrogen gas.

## **Accidental Release Measures**

**【Small spills/leaks】**

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Clean up spills immediately, using the appropriate protective equipment. Provide ventilation. Do not get water inside containers.

## **Stability and Reactivity**

**【Disposal Code】** 1

**【Stability】** Stable under normal temperatures and pressures.

**【Incompatibilities】** Strong oxidizing agents, metals.

**【Decomposition】** Phosphorous fumes.

**【Combustion Products】** Irritating phosphorus oxides may be released.

## **Transport Information**

**【UN Number】** 1902

**【Hazard Class】** 8

**【Packing Group】** III

**【HS Code】** 2919900020