Material Safety Data Sheet
Trimethyl phosphate

ACC# 96758

Section 1 - Chemical Product and Company Identification

MSDS Name: Trimethyl phosphate
Catalog Numbers: AC157970000, AC1579705000, AC1579750000, AC220680000, AC220680500
Synonyms: TMPO; Methyl phosphate; Phosphoric acid, trimethyl ester; Trimethoxyphosphine oxide.
Company Identification:
Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410
For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>512-56-1</td>
<td>Trimethyl phosphate</td>
<td>&gt;97</td>
<td>208-144-8</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear colorless to slightly yellow liquid.

Warning! Harmful if swallowed. Possible risks of irreversible effects. Questionable carcinogen.
May cause central nervous system effects. May cause adverse reproductive effects based upon animal studies.
Target Organs: Central nervous system, gastrointestinal system, reproductive system.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation. May be harmful if absorbed through the skin. If absorbed, may cause central nervous system effects.
Ingestion: Harmful if swallowed. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
Inhalation: May cause respiratory tract irritation. Prolonged exposure may result in dizziness and general weakness. May be harmful if inhaled. May cause central nervous system effects.
Chronic: Chronic ingestion may cause neurological symptoms. Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances. Possible risk of irreversible effects. Limited evidence of a carcinogenic effect. A number of studies in rodents have shown trimethyl phosphate to produce adverse male reproductive effects. (REPROTOX) Studies suggest that trimethyl phosphate is carcinogenic, neurotoxic, genotoxic, and a male reproductive toxin. (Air Products and Chemicals)

Section 4 - First Aid Measures

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

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, 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.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: 107 deg C (224.60 deg F)

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use with adequate ventilation. Use only in a chemical fume hood. Avoid breathing vapor or mist.

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

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Use only under a chemical fume hood.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethyl phosphate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Trimethyl phosphate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

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 respirator use.

### Section 9 - Physical and Chemical Properties

**Physical State:** Liquid  
**Appearance:** clear colorless to slightly yellow  
**Odor:** pleasant odor - sweetish odor  
**pH:** Not available.  
**Vapor Pressure:** 0.85 mm Hg @ 25 deg C  
**Vapor Density:** 6.28 (air=1)  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** 197 deg C @ 760mmHg  
**Freezing/Melting Point:** -46 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** 500 g/l (25°C)  
**Specific Gravity/Density:** 1.2 g/ml  
**Molecular Formula:** C3H9O4P  
**Molecular Weight:** 140.08

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.  
**Conditions to Avoid:** Incompatible materials, ignition sources, excess heat.  
**Incompatibilities with Other Materials:** Strong oxidizing agents, strong bases, carbon steel.  
**Hazardous Decomposition Products:** Phosphine, carbon monoxide, oxides of phosphorus, carbon dioxide.  
**Hazardous Polymerization:** Has not been reported

### Section 11 - Toxicological Information

**RTECS#:**  
**CAS# 512-56-1: TC8225000**

**LD50/LC50:**  
**CAS# 512-56-1:**  
- Oral, mouse: LD50 = 1470 mg/kg;  
- Oral, rabbit: LD50 = 1275 mg/kg;  
- Oral, rat: LD50 = 840 mg/kg;  
- Skin, rabbit: LD50 = 2830 uL/kg;  

**Carcinogenicity:**  
**CAS# 512-56-1:**  
- **ACGIH:** Not listed.  
- **California:** carcinogen, initial date 5/1/96
- **NTP:** Not listed.
- **IARC:** Not listed.

**Epidemiology:** No information found  
**Teratogenicity:** No information available.  
**Reproductive Effects:** Adverse reproductive effects have occurred in experimental animals.  
**Mutagenicity:** Mutagenic effects have occurred in experimental animals.  
**Neurotoxicity:** Neurotoxic effects have occurred in humans.  
**Other Studies:**

### Section 12 - Ecological Information

**Ecotoxicity:** Fish: Fathead Minnow: 7.01g/L(LC50); 96H; Flow-throughFish: Fathead Minnow: 6.74g/L(EC50); 96H; Flow-through No data available.  
**Environmental:** No information available.  
**Physical:** No information available.  
**Other:** This product is an insect chemosterilant.

### Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.  
**RCRA P-Series:** None listed.  
**RCRA U-Series:** None listed.

### Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>Not Regulated.</td>
</tr>
<tr>
<td><strong>Hazard Class:</strong></td>
<td>Not Regulated.</td>
</tr>
<tr>
<td><strong>UN Number:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td></td>
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</tbody>
</table>

### Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**  
CAS# 512-56-1 is listed on the TSCA inventory.  
**Health & Safety Reporting List**  
None of the chemicals are on the Health & Safety Reporting List.  
**Chemical Test Rules**  
None of the chemicals in this product are under a Chemical Test Rule.  
**Section 12b**  
None of the chemicals are listed under TSCA Section 12b.  
**TSCA Significant New Use Rule**  
None of the chemicals in this material have a SNUR under TSCA.  
**CERCLA Hazardous Substances and corresponding RQs**
None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.

**SARA Codes**
- CAS # 512-56-1: immediate, delayed.

**Section 313**
No chemicals are reportable under Section 313.

**Clean Air Act:**
- This material does not contain any hazardous air pollutants.
- This material does not contain any Class 1 Ozone depleters.
- This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**
- None of the chemicals in this product are listed as Hazardous Substances under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**
- None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**
- CAS# 512-56-1 can be found on the following state right to know lists: Massachusetts.

**California Prop 65**
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains Trimethyl phosphate, a chemical known to the state of California to cause cancer.
California No Significant Risk Level: CAS# 512-56-1: 24 []/day NSRL

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
- XN

**Risk Phrases:**
- R 22 Harmful if swallowed.
- R 40 Limited evidence of a carcinogenic effect.
- R 68 Possible risk of irreversible effects.

**Safety Phrases:**
- S 36/37 Wear suitable protective clothing and gloves.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**
- CAS# 512-56-1: 1

**Canada - DSL/NDSL**
- CAS# 512-56-1 is listed on Canada’s DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of D2B, D2A.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**
- CAS# 512-56-1 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 5/05/1999
**Revision #6 Date:** 6/28/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party.
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