

MATERIAL SAFETY DATA SHEET

EASTMAN

> 100000001/F/USA
> Revision Date: 1999-01-20
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WA05630
Candy / Jelly / Deep Fry Therm



1592

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: "EASTMAN" Triethyl Phosphate

Product Identification Number(s): SPC 17600

Manufacturer/Supplier: Eastman Chemical Company, Kingsport, Tennessee 37662

>MSDS Prepared by: Eastman Product Safety and Stewardship, Eastman Chemical
>Company, Kingsport, TN 37662

For Emergency Health, Safety & Environmental Information, call 800-EASTMAN-

For Emergency Transportation Information, call CHEMTREC at 800-424-9300 or
call 800-EASTMAN

For Other Information, call your Eastman representative or the Eastman
operator at 423-229-2000 (USA)

Chemical Name: triethyl phosphate

Synonym(s): EAN 904662; PM 00418-00

Molecular Formula: C6H15O4P

Molecular Weight: 182.16

Product Use: chemical intermediate

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry Number)

100 triethyl phosphate (000078-40-0)

3. HAZARDS IDENTIFICATION

WARNING!

CAUSES EYE IRRITATION

HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS

HMIS Hazard Ratings: Health - 2, Flammability - 1, Chemical Reactivity - 0

NFPA Hazard Ratings: Health - 0, Flammability - 1, Instability - 1

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary
from company to company. They are intended only for rapid, general

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identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Skin: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Seek medical advice.

5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO₂), alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: carbon dioxide, carbon monoxide, oxides of phosphorus

Unusual Fire and Explosion Hazards: none

6. ACCIDENTAL RELEASE MEASURES

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid contact with eyes. Avoid breathing high vapor concentrations. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Storage: Keep container closed.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV): not established

OSHA (USA) Permissible Exposure Limit (PEL, 1989 Table Z-1-A values or section-specific standards): not established

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances such as poorly ventilated spaces, evaporation from large surfaces, spraying, heating, etc.

- > Respiratory Protection: If engineering controls do not maintain airborne
- > concentrations to an acceptable level, an approved respirator must be worn.
- > Respirator type: organic vapor. If respirators are used, a program should be
- > instituted to assure compliance with OSHA Standard 63 FR 1152, January 8,
- > 1998.

Eye Protection: Wear safety glasses with side shields (or goggles).

Skin Protection: It is a good industrial hygiene practice to minimize skin contact.

Recommended Decontamination Facilities: eye bath, safety shower, washing facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical Form: liquid
- Color: colorless
- Odor: mild, sweet
- Odor Threshold: not available
- Specific Gravity at 15.6°C (60°F) (water = 1): 1.07
- Vapor Pressure at 40°C (104°F): 1.33 mbar (1.0 mm Hg)
- Vapor Density (Air = 1): 6.3
- Evaporation Rate (n-butyl acetate = 1): not available
- Boiling Point: 209°C (408°F)
- Melting Point: -56.4°C (-69.5°F)
- Viscosity at Ambient Temperature: not available
- > - Solubility in Water at Ambient Temperature: complete
- pH: not available
- Octanol/Water Partition Coefficient: not available
- Flash Point (Pensky-Martens closed cup): 99°C (210°F)
- > - Lower Flammable Limit at 139°C (282°F): 1.7 volume %
- > - Upper Flammable Limit at 163°C (325°F): 10.0 volume %
- Autoignition Temperature (ASTM D 2155): 452°C (846°F)

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- Sensitivity to Mechanical Impact: insensitive at 100 kg-cm
 - Sensitivity to Static Discharge: not available
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10. STABILITY AND REACTIVITY

Stability: stable

Incompatibility: Material can react with strong oxidizing agents.

Hazardous Polymerization: will not occur

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General: Burning experimental urethane foams formulated with both propoxylated trimethylolpropane and phosphorous-containing substances may produce very toxic products of combustion. (For details, see: J. H. Petajan, et al., Extreme toxicity from combustion products of a fire-retarded polyurethane foam, SCIENCE 187, 742-744, 1975.) Flammability testing should always be conducted in a properly functioning laboratory hood and/or with appropriate personal respiratory protection.

Inhalation: High vapor concentrations may cause drowsiness.

Eyes: Causes irritation.

Skin: Low hazard for usual industrial handling or commercial handling by trained personnel.

Ingestion: Expected to be a low ingestion hazard.

Acute Toxicity Data:

Oral LD-50 (rat): 1311 mg/kg

Inhalation LC-50 (rat): >2050 mg/m³/6 hour(s)

Dermal LD-50 (guinea pig): >20 mL/kg

Skin irritation (guinea pig): slight

Repeated skin application (guinea pig): very slight irritation

Skin sensitization (guinea pig): none

Eye irritation (rabbit): moderate

Definitions for the following section(s): LOEL = lowest-observed-effect level, NOAEL = no observed-adverse-effect level, NOEL = no-observed-effect level.

Subchronic Toxicity Data:

Inhalation study (2.5 weeks, rat): LOEL = 1786 mg/m³ (transient anesthesia) (respiratory tract irritation); NOEL = 366 mg/m³.

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Oral study (4 months, male rat): LOEL = 0.1 % in diet (increase in weight: liver); NOEL = not established.

Oral study (5 months, female rat): LOEL = 1.0 % in diet (target organ effects: liver); NOEL = 0.5 % in diet.

Reproductive Toxicity Data: Oral study (rat): LOEL for maternal toxicity = 1.0 % in diet; NOEL for maternal toxicity = 0.5 % in diet; LOEL for embryo/fetotoxicity = 1.0 % in diet; NOEL for embryo/fetotoxicity = 0.5 % in diet

Mutagenicity/Genotoxicity Data:

Cell transformation assay: negative

Salmonella typhimurium assay (Ames test): negative (+/- activation)

12. ECOLOGICAL INFORMATION

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publicly owned treatment works.

Data for this material have been used to estimate its environmental impact. It has the following properties: a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial respiration, a low potential to affect the germination and/or early growth of some plants, a low potential to biodegrade with acclimated microorganisms from activated sludge.

When diluted with a large amount of water, this material released directly or indirectly into the environment is not expected to have a significant impact.

Oxygen Demand Data: COD: 1.55 g oxygen/g

Acute Aquatic Effects Data:

96-h LC-50 (fathead minnow): >1000 microliter(s)/l
96-h EC-50 (daphnid): 330 microliter(s)/l
96-h LC-50 (flatworm): >1000 microliter(s)/l
96-h LC-50 (ramshorn snail): >1000 microliter(s)/l
96-h LC-50 (sideswimmer): >100 microliter(s)/l
96-h LC-50 (segmented worm): >100 microliter(s)/l
96-h LC-50 (pill bug): >100 microliter(s)/l

Secondary Waste Water Treatment Effects: 5-hour IC-50: >5000 mg/L

7-Day Plant Germination Effects - No-adverse-effect concentration:

Ryegrass: 100 microliter(s)/l

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Radish: 100 microliter(s)/1
Lettuce: 100 microliter(s)/1

7-Day Plant Seedling Effects - No-adverse-effect concentration:

Marigold: 100 microliter(s)/1
Radish: 100 microliter(s)/1
Corn: 100 microliter(s)/1
Lettuce: 100 microliter(s)/1

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

- DOT (USA) Status: not regulated
- TDG (Canada) Status: not regulated
- Air - International Civil Aviation Organization (ICAO)
- ICAO Status: not regulated
- Sea - International Maritime Dangerous Goods (IMDG)
- IMDG Status: not regulated

15. REGULATORY INFORMATION

- This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- OSHA Classification: hazardous
- > - California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause cancer: none known to Eastman
- > - California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause adverse reproductive effects: none known to Eastman
- This document has been prepared in accordance with the MSDS requirements of the WHMIS Controlled Products Regulation.
- WHMIS (Canada) Status: controlled
- WHMIS (Canada) Hazard Classification: D/2/B
- Carcinogenicity Classification (components present at 0.1% or more):

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- International Agency for Research on Cancer (IARC): not listed
 - American Conference of Governmental Industrial Hygienists (ACGIH): not listed
 - National Toxicology Program (NTP): not listed
 - Occupational Safety and Health Administration (OSHA): not listed

 - Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: none
 - SARA (U.S.A.) Sections 311 and 312 hazard classification(s): immediate (acute) health hazard

 - US Toxic Substances Control Act (TSCA): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

 - Canadian Environmental Protection Act (CEPA) and Domestic Substances List (DSL): This product is listed on the DSL or otherwise complies with CEPA new substance notification requirements.

 - European Inventory of Existing Commercial Chemical Substances (EINECS): This product is listed on EINECS. EINECS Number: 2011145

 - Australian Inventory of Chemical Substances (AICS) and National Industrial Chemicals Notification and Assessment Scheme (NICNAS): This product is listed on AICS or otherwise complies with NICNAS.

 - Japanese Handbook of Existing and New Chemical Substances: This product is listed in the Handbook or has been approved in Japan by new substance notification.

16. OTHER INFORMATION

Label Statements:

WARNING!
CAUSES EYE IRRITATION
HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS

Avoid contact with eyes.
Avoid breathing high vapor concentrations.
Use only with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If inhaled, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Since emptied containers retain product residue, follow label warnings even

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after container is emptied.

CAUTION: FOR MANUFACTURING, PROCESSING OR REPACKING BY TRAINED PERSONNEL

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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>The symbol ">" in the left margin denotes a revision in this section.

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