



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/20/2013

Version 1.1

SECTION 1. Identification

Product identifier

Product number	800549
Product name	Triethylphosphite for synthesis

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Skin sensitization, Category 1, H317
Chronic aquatic toxicity, Category 3, H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Warning

Hazard Statements

H226 Flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

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P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P262 Do not get in eyes, on skin, or on clothing.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	C ₆ H ₁₅ O ₃ P (Hill)
CAS-No.	122-52-1
Molar mass	166.16 g/mol

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

triethyl phosphite (>= 90 % - <= 100 %)
122-52-1

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Get medical attention.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Allergic reactions, Nausea, Vomiting, Headache

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

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Suitable extinguishing media

Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

Water, Foam

Special hazards arising from the substance or mixture

Combustible material

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

May not get in touch with:

Water

Caution! in contact with water product releases:

Oxides of phosphorus

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Oxides of phosphorus

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	malodorous
Odor Threshold	No information available.
pH	not applicable
Melting point	-112 °C

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Boiling point/boiling range	313 - 316 °F (156 - 158 °C) at 1,013 hPa
Flash point	126 °F (52 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	3.75 %(V)
Upper explosion limit	42.5 %(V)
Vapor pressure	< 6 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Relative density	0.956 g/cm ³ at 68 °F (20 °C)
Water solubility	Hydrolyzis
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	500 °F (260 °C)
Viscosity, dynamic	1 mPa.s at 68 °F (20 °C)
Explosive properties	No information available.
Ignition temperature	482 °F (250 °C) Method: DIN 51794

SECTION 10. Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Exothermic reaction with:

Water

Violent reactions possible with:

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Oxidizing agents

Risk of explosion with:
magnesium, chlorates

Conditions to avoid

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute dermal toxicity

LD50 rabbit: 2,800 mg/kg
(RTECS)

Skin irritation

rabbit

Result: slight irritation

OECD Test Guideline 404

Eye irritation

rabbit

Result: No eye irritation

OECD Test Guideline 405

Sensitization

Sensitization test: guinea pig

Result: positive

(IUCLID)

May cause an allergic skin reaction.

Genotoxicity in vivo

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(IUCLID)

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

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Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Decomposition of the substance with tissue moisture.

Further toxicological data:

Systemic effects:

After absorption of large quantities:

Nausea, Vomiting, Headache

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 Danio rerio (zebra fish): 209 mg/l; 96 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 94.1 mg/l; 24 h (IUCLID)

Toxicity to bacteria

EC50 activated sludge: 4,720 mg/l; 3 h (IUCLID)

Persistence and degradability

Biodegradability

69 %; 28 d

OECD Test Guideline 301E

Not readily biodegradable.

Theoretical oxygen demand (ThOD)

1,830 mg/g

(IUCLID)

Bioaccumulative potential

No information available.

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Mobility in soil

No information available.

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 2323
Proper shipping name	TRIETHYL PHOSPHITE
Class	3
Packing group	III
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 2323
Proper shipping name	TRIETHYL PHOSPHITE
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 2323
Proper shipping name	TRIETHYL PHOSPHITE
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Combustible Liquid

Skin sensitizer

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SARA 311/312 Hazards

Fire Hazard

Acute Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Ingredients

triethyl phosphite

New Jersey Right To Know

Ingredients

triethyl phosphite

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H226 Flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 08/20/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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