

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Section 1: Identification of the substance/preparation and of the company/undertaking

1.1 Product identifier

Product name	Triethyl phosphite
CAS	122-52-1
EC	204-552-5
Index Number	N/A
Reach Registration No	N/A
Synonyms, Trade names	No information available.

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

Identified uses	Plasticizers, stabilizers, lubricants, and grease additives. Color inhibitor for resins. Chemical intermediate for vinyl phosphate insecticides, for phosphonate insecticides; sugarcane ripener. Used to produce optical brightener.
Uses advised against	Any other purpose.

1.3 Details of the supplier of the safety data sheet

Supplier	Camida Limited New Quay Clonmel Co. Tipperary E91 YV66 Ireland Tel: +353 52 6125455 info@camida.com
Contact person	

1.4 Emergency telephone number

Emergency telephone	00 44 (0) 1865 407333 (Carechem24)
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Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to regulation EC No. 1272/2008	
Physical and Chemical hazards	Flam. Liq 3- H226
Human health	Not classified
Environment	Not classified

2.2 Label elements

Label in accordance with EC No.
1272/2008



SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Signal word Warning

Hazard statements H226 Flammable liquid and vapour.

Precautionary statements

Prevention
P210 Keep away from heat/ sparks/open flames/hot surfaces. — No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P280 Wear protective gloves/ protective clothing/eye protection/face protection.

Response
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378 In case of fire: Use dry chemical, foam or carbon dioxide for extinction.

2.3 Other hazards

None known.

Section 3: Composition/identification of ingredients

3.1 Substance

Name	Product identifier	Reg. EU 1272/2008	%
triethyl phosphite	CAS-No.: 122-52-1 EC No.: 204-552-5	Flam. Liq 3- H226	99-100%

The full text for all hazard statements are displayed in section 16.

Composition comments The data shown are in accordance with the latest EC Directives. Pre-registration number (REACH): 05-2116663592-39-0000.

3.2 Mixtures

Not applicable.

Section 4: First aid measures

4.1 Description of first aid measures

General information Provide general first aid, rest, warmth and fresh air. As a general rule, in case of doubt or if symptoms persist, always call a doctor. Seek medical attention for all burns and eye injuries, regardless how minor they may seem. First aid personnel must be aware of own risk during rescue.
In case of unconsciousness place patient stably in side position for transportation.

Inhalation Consult a doctor. Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult give oxygen.

Ingestion Consult a doctor. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Skin contact Consult a doctor. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact Consult a doctor. Flush eyes with plenty of water for at least 15 mins, occasionally lifting the upper and lower lids. Avoid contaminating unaffected eye.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Remove contact lenses if present and easy to do so.

4.2 Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependant of the concentration and the length of exposure.
Inhalation	Exposure to high concentrations may cause headache, nausea, and dizziness due to reduced cholinesterase activity.
Ingestion	Abdominal pain may occur after ingestion.
Skin contact	May cause irritation, redness, and pain.
Eye contact	May cause redness and pain.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to the physician	Immediately call a POISON CENTER or doctor/physician.
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Section 5: Fire-fighting measures

5.1 Extinguishing media

Extinguishing media	Dry chemical, foam or carbon dioxide.
Unsuitable extinguishing media	Hydrous agents, water.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	Combustion may lead to the release of toxic gases/vapours or fumes of carbon monoxide and carbon dioxide. Decomposition products may include: Oxides of phosphorus.
Unusual fire & explosion hazards	Vapour may travel considerable distance to source of ignition and flash back. Highly flammable liquid and vapour.
Specific hazards	If heated, harmful vapours may be formed. Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

Special fire fighting procedures	Avoid breathing fire vapours. Keep up-wind to avoid fumes. Fight advanced or massive fires from safe distance or protected location. Ventilate closed spaces before entering them. Containers close to fire should be removed immediately or cooled with water if safe to do so.
Protective equipment for firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Refer to section 8 of SDS for personal protection details. Eliminate all sources of ignition. Ensure adequate ventilation. Avoid contact with skin and eyes. Keep
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SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

For emergency responders

unnecessary and unprotected personnel from entering.

Follow safe handling advice and personal protective equipment recommendations for normal use of product.

6.2 Environmental precautions

Environmental precautions

Do not discharge into drains, water courses or onto the ground. Contain spillages with sand, earth or any suitable adsorbent material. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Protection Agency or local authority.

6.3 Methods and material for containment and cleaning up

Spill clean up methods

Wear appropriate personal protective equipment as specified in Section 8. Ventilate and evacuate the area. Eliminate all ignition sources. Stop leak if possible without risk. Use non-sparking hand tools and explosion proof electrical equipment for clean up.

Absorb spillage with non-combustible, inert absorbent material. (Sand, acid binders, universal binders). Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

6.4 Reference to other sections

Reference to other sections

See section 1 for emergency contact. For personal protection, see section 8. For waste disposal, see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handling

Bond and ground all systems when handling. Since emptied containers retain product residue, follow label warnings even after container is emptied. Keep container tightly closed. Avoid breathing vapor or mist. Use only with adequate ventilation. Wash hands thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from sources of ignition. Keep away from incompatible materials (see section 10). Protect from moisture. Store under dry and inert gas - This product is water and air sensitive.

Storage class

Flammable liquid storage.

7.3 Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

Usage description

Use only according to directions.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Section 8: Exposure controls/Personal protection

8.1 Control parameters

Ingredient comments

No exposure limits noted for ingredient(s). Ireland, Occupational Exposure Limits 2016.

8.2 Exposure Controls

Protective equipment



Engineering measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Where necessary use lighting and electrical equipment designed for use in atmospheres where flammable vapours are present.

Respiratory equipment

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator (EN143) with type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as CEN (EU). Consult manufacturer for specific advice.

Hand protection

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374) is recommended. Suggested material: (Suitable materials for longer, direct contact) Viton. Layer thickness: 0.7 mm. Breakthrough time: >480 minutes.
(Suitable materials for short-term contact or splashes) Latex. Layer thickness: 0.6 mm. Breakthrough time: > 10 minutes. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Eye protection

Use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU). Tightly fitting safety goggles or face-shield.

Other protection

Wear appropriate clothing to prevent any possibility of skin contact. Suggested PPE: chemical resistant full-length overalls and boots. The selected clothing must satisfy the European norm standard EN 943. Protective clothing should conform to EN 14605 for liquid splashes. Protective clothing should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hygiene measures

Wash promptly if skin becomes wet or contaminated. Immediately take off any contaminated clothing and launder before re-use. Remove contaminated clothing and protective equipment before entering eating areas. Wash hands at the end of each work shift, before each break, and before eating or smoking.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Process conditions

Keep container tightly sealed when not in use. Ensure that eye flushing systems and safety showers are located close by in the work place.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Characteristic, obnoxious, phosphite odor.
Odour threshold - lower	No information available.
Odour threshold - upper	No information available.
pH-Value, Conc. Solution	No information available.
pH-Value, Diluted solution	No information available.
Melting point	-35.46 °C.
Initial boiling point and boiling range	No information available.
Flash point	54.00 °C
Evaporation rate	No information available.
Flammability state	Highly
Flammability limit - lower(%)	No information available.
Flammability limit - upper(%)	No information available.
Vapour pressure	0.87 mm Hg 20.00 °C
Vapour density (air=1)	No information available.
Relative density	0.969g/cm ³ @ 20.00 °C
Bulk density	No information available.
Solubility	(Solubility in / Miscibility with water at 25 °C) 14800 mg/l.
Decomposition temperature	No information available.
Partition coefficient; n-Octanol/Water	log Pow 0.74
Auto ignition temperature (°C)	No information available.
Viscosity	No information available.
Explosive properties	Above 54 °C explosive vapour/air mixtures may be formed.
Oxidising properties	No information available.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

9.2 Other information

Molecular weight	No information available.
Volatile organic compound	No information available.
Other information	Ignition temperature: 250 °C. Surface tension: 24.26 g/s ² at 20 °C.

Section 10: Stability and reactivity

10.1 Reactivity

Reactivity	Stable under recommended transport and storage conditions and under recommended use.
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10.2 Chemical stability

Stability	Stable under normal temperature conditions and recommended use.
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10.3 Possibility of hazardous reactions

Hazardous reactions	Reacts with oxygen at low temperatures to form an explosive product. Reacts with water, acids, and strong oxidants, causing fire and explosion hazard.
Hazardous polymerisation	No information available.
Polymerisation description	No information available.

10.4 Conditions to Avoid

Conditions to avoid	Protect from air, light and moisture. Avoid heat, sparks, open flames and other ignition sources.
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10.5 Incompatible materials

Materials to avoid	Avoid contact with oxidising substances and acids. Water, moisture.
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10.6 Hazardous decomposition products

Hazardous decomposition products	The thermal decomposition may release/form: Carbon monoxide (CO), carbon dioxide (CO ₂). Phosphorous oxides.
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Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicological information	No toxicological information for the overall finished product.
Acute toxicity (Oral LD50)	3720.00mg/kg Mouse
Acute toxicity (Dermal LD50)	2800.00mg/kg Rabbit
Acute toxicity (Inhalation LD50)	LC50 (6 h): 11063 mg/m ³ (rat), 6203 mg/m ³ (mouse).
Serious eye damage/irritation	May cause temporary eye irritation.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Skin corrosion/irritation	No information available.
Respiratory sensitisation	No information available.
Skin sensitisation	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Specific target organ toxicity - Single exposure:	
STOT - Single exposure	No information available.
Specific target organ toxicity - Repeated exposure:	
STOT - Repeated exposure	No information available.
Inhalation	Exposure to high concentrations may cause headache, nausea, and dizziness due to reduced cholinesterase activity.
Ingestion	Abdominal pain may occur after ingestion.
Skin contact	May cause irritation, redness, and pain.
Eye contact	May cause redness and pain.
Waste management	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Since emptied containers contain product residue, follow label warnings even after container is emptied.
Routes of entry	No information available.
Target organs	Eyes, skin, digestive system, respiratory system, central nervous system.
Aspiration hazards:	No information available.
Reproductive toxicity:	No information available.

Section 12: Ecological information

12.1 Toxicity

Acute toxicity - Fish	LC50 96 Hours 1631.00 ppm Freshwater Fish
Acute toxicity - Aquatic invertebrates	LC50 48 Hours 764.00 ppm Daphnia magna
Acute toxicity - Aquatic plants	EC50 (96 h): 210.153 mg/L (Green Algae).
Acute toxicity - Microorganisms	No information available.
Chronic toxicity - Fish	No information available.
Chronic toxicity - Aquatic invertebrates	No information available.
Chronic toxicity - Aquatic plants	No information available.
Chronic toxicity - Microorganisms	No information available.
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Eco toxilogical information	No ecological toxicity available on the overall finished product.

12.2 Persistence and degradability

Degradability	Half-life for triethyl phosphite in water is 15 days which is estimated to be not persistent in the environment.
Biological oxygen demand	No information available.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Chemical oxygen demand No information available.

12.3 Bioaccumulative potential

Bioaccumulative potential Bioconcentration Factor (BCF) of triethyl phosphite is 3.162 L/kg at 25°C.
Bioaccumulation factor No information available.
Partition coefficient; n-Octanol/Water log Pow 0.74

12.4 Mobility in soil

Mobility Adsorption coefficient (Koc) value of triethyl phosphite is 1337 at 25 deg C.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Product is not identified as PBT or vPvB.

12.6 Other adverse effects

Other adverse effects None known.

Section 13: Disposal considerations

Waste management When handling waste, consideration should be made to the safety precautions applying to handling of the product. Since emptied containers contain product residue, follow label warnings even after container is emptied.

13.1 Waste treatment methods

Disposal methods Contact a licensed professional waste disposal service. Dispose of waste and residues in accordance with local authority requirements, and in accordance with all local, national and international regulations.

Section 14: Transport information

14.1 UN number

UN no. (ADR) UN2323
UN no. (IMDG) UN2323
UN no. (IATA) UN2323

14.2 UN proper shipping name

ADR proper shipping name TRIETHYL PHOSPHITE
IMDG proper shipping name TRIETHYL PHOSPHITE
IATA proper shipping name TRIETHYL PHOSPHITE

14.3 Transport hazard class(es)

ADR class 3
IMDG class 3
IATA class 3

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018

Transport labels



14.4 Packing group

ADR/RID/ADN packing group	III
IMDG packing group	III
IATA packing group	III

14.5 Environmental hazards

ADR	No
IMDG	No
IATA	No

14.6 Special precautions for user

EMS	F-E, S-D
Emergency action code	Not applicable.
Hazard no. (ADR)	30
Tunnel restriction code	(D/E)

14.7 Transport in bulk according to annex II of MARPOL73/78 and the IBC code

Not applicable.

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/Legislation specific for the substance or mixture

EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. The UN Globally Harmonized System (GHS) Safety Data Sheet format (Annex IV) is implemented as Annex II of REACH EU No 453/2010 of 20th May 2010 amending regulation (EC) No 1907/2006.
Approved code of practice	2016 Code of Practice for the Chemical Agents Regulations in accordance with section 60 of the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005).
Chemical safety assessment	No chemical safety assessment has been carried out.

International Inventories

EINECS/ELINCS/NLP	triethyl phosphite
DSL/NDSL	triethyl phosphite
TSCA	triethyl phosphite
KECI	triethyl phosphite
IECSC	triethyl phosphite
ENCS	triethyl phosphite
PICCS	triethyl phosphite
AICS	triethyl phosphite

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Version 3.0 Issue date: 29/05/2018

Revision date: 29/05/2018



Section 16: Other information

General information	This Safety Data Sheet is in accordance with Reach Regulation (EC) No 453/2010.
Revision comments	This is a third issue. 3.0.
Revision date	29 May 2018
Revision	3.0
Safety data sheet status	Approved.

Hazard statements in full

H226 Flammable liquid and vapour.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.