

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 29.01.2024

Version number 5 (replaces version 4)

Revision: 29.01.2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Trihexyl(tetradecyl)phosphonium chloride > 97%

Article number: PH0601C

CAS Number:

258864-54-9

EC number:

684-206-1

1.2 Relevant identified uses of the substance or mixture and uses advised against No other important information available.

- **Sector of Use** SU24 Scientific research and development

- **Product category** PC21 Laboratory chemicals

Application of the substance / the mixture This product is intended for the exclusive use of Research and Development.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Solvionic SA

11 chemin des Silos

31100 TOULOUSE

FRANCE

☎ : +33 (0)32.26.20.20

✉: contact@solvionic.com

Further information obtainable from: Department of Regulatory affairs

1.4 Emergency telephone number:

- United Kingdom: Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust, +44 20 7188 7188.

- Ireland: National Poisons Information Centre Beaumont Hospital, +353 1 809 2566 (Healthcare professionals 24/7), +353 1 809 2166 (public, 8am - 10pm, 7/7).

- France ORFILA (INRS): +33 (0)1.45.42.59.59.

- Belgique, Belgie/Belgium: Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid

Rue Bruyn 1 - 1120 Bruxelles/Brussel. Toutes les questions urgentes concernant une intoxication: 070 245 245 (gratuit, 24/7), si pas accessible 02 264 96 30 (tarif normal). Alle dringende vragen over vergiftiging: 070 245 245 (gratis, 24/7), of indien onbereikbaar tel. 02 264 96 30 (normaal tarief).

- Sverige/ Sweden: Giftinformationscentralen Box 60 500 : 112 – begär Giftinformation, +46 10 456 6700 (Från utlandet)

- Ελλάδα / Greece: Poisons Information Centre Children's Hospital P&A Kyriakou, +30 21 07 79 37 77.

- Italia/Italy: Centro Antiveleni di Roma CAV Policlinico "A. Gemelli", Dipartimento di Tossicologia Clinica Università Cattolica del Sacro Cuore, +39 06 305 4343.

- España/ Spain: Servicio de Información Toxicológica Instituto Nacional de Toxicología y Ciencias Forenses, Departamento de Madrid, +34 91 562 04 20 (solo emergencias toxicológicas), Información en español (24h/365 días).

- Nederland/ Netherlands (NVIC): Uitsluitend bestemd om professionele hulpverleners te informeren bij acute vergiftiging, +31 (0)88 755 8000.

- Norge/ Norway: Giftinformasjonen: +47 22 59 13 00.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302 Harmful if swallowed.

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

Hazard pictograms


GHS05



GHS07



GHS09

Signal word Danger

Hazard-determining components of labelling:

Trihexyl(tetradecyl)phosphonium chloride

triphenylphosphine oxide

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Hazard statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****3.1 Substances****- CAS No. / Description**

CAS: 258864-54-9 Trihexyl(tetradecyl)phosphonium chloride

- Identification number(s)**EC number:** 684-206-1**Molecular formula:** C₃₂ H₆₈ Cl P**Molar mass:** 519,31 g/mol**- Dangerous components:**

CAS: 258864-54-9	Trihexyl(tetradecyl)phosphonium chloride	97%
EC number: 684-206-1	Skin Corr. 1B, H314; Aquatic Chronic 2, H411; Acute Tox. 4, H302	
CAS: 791-28-6	triphenylphosphine oxide	≤2,5%
EINECS: 212-338-8	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	

SECTION 4: First aid measures**4.1 Description of first aid measures****- General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

. **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.. **After skin contact:** Immediately wash with water and soap and rinse thoroughly.. **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.. **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.**SECTION 5: Firefighting measures****5.1 Extinguishing media**. **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.**5.2 Special hazards arising from the substance or mixture** During heating or in case of fire poisonous gases are produced.**5.3 Advice for firefighters**. **Protective equipment:** No special measures required.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Use individual protective gear.

6.2 Environmental precautions:

Do not discharge into the sewer or the natural environment.

Inform respective authorities in case of seepage into water course or sewage system.

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Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

. **Information about fire - and explosion protection:** Keep respiratory protective device available.**7.2 Conditions for safe storage, including any incompatibilities** Shelf Life 3 months sealed.. **Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep container tightly sealed.**Maximum storage temperature:** Store at room temperature, not exceeding 35°C.**7.3 Specific end use(s)** No further relevant information available.**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**- **Ingredients with limit values that require monitoring at the workplace:** Not required.. **Additional information:** The lists valid during the making were used as basis.**8.2 Exposure controls****Appropriate engineering controls** No further data; see section 7.**Individual protection measures, such as personal protective equipment**. **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

. **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Hand protection

Protective gloves

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

Chloroprene rubber (Neopren)

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection

Tightly sealed goggles

. **Body protection:** Use protective suit.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- General Information

Physical state

Liquid

Color:

Yellow

. Odor:

Not determined.

. Odor threshold:

Not determined.

. Melting point/freezing point:

-66 °C

Boiling point or initial boiling point and boiling range

Undetermined.

Flammability

Not applicable.

Lower and upper explosion limit

. Lower:

Not determined.

. Upper:

Not determined.

- Flash point:

118 °C

. Decomposition temperature:

Not determined.

pH

Not determined

. at 25°C:

- Viscosity:

Kinematic viscosity

Not determined.

Viscosity at 25 °C (77 °F)

. Dynamic at 20 °C:

1.990 mPas

Solubility

. water:

Not miscible or difficult to mix.

Partition coefficient n-octanol/water (log value)

Not determined.

- Vapour pressure:

Not determined.

Density and/or relative density

- Density at 20 °C:

0,888 g/cm³

. Relative density

Not determined.

. Bulk density:

892 kg/m³

. Vapour density

Not determined.

9.2 Other information

. Appearance:

Form:

Liquid

Important information on protection of health and environment, and on safety.

- Auto-ignition temperature:

Not determined.

- Explosive properties:

Product does not present an explosion hazard.

- Solvent content:

. VOC (EC)

0,00 %

- Change in condition

. Evaporation rate

Not determined.

Information with regard to physical hazard classes

Explosives

Void

Flammable gases

Void

Aerosols

Void

Oxidising gases

Void

Gases under pressure

Void

Flammable liquids

Void

Flammable solids

Void

Self-reactive substances and mixtures

Void

Pyrophoric liquids

Void

Pyrophoric solids

Void

Self-heating substances and mixtures

Void

Substances and mixtures, which emit flammable gases in contact with water

Void

Oxidising liquids

Void

Oxidising solids

Void

Organic peroxides

Void

Corrosive to metals

Void

Desensitised explosives

Void

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials: Strong oxidizer and strong acid and base.

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10.6 Hazardous decomposition products: No dangerous decomposition products known.**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** Harmful if swallowed.**LD/LC50 values relevant for classification:****ATE (Acute Toxicity Estimates)**

Oral LD50 505 mg/kg

CAS: 258864-54-9 Trihexyl(tetradecyl)phosphonium chloride

Oral LD50 500 mg/kg (ATE)

Dermal LD50 >2.000 mg/kg (rabbit)

CAS: 791-28-6 triphenylphosphine oxide

Oral LD50 500 mg/kg (ATE)

. **Skin corrosion/irritation** Causes severe skin burns and eye damage.. **Serious eye damage/irritation** Causes serious eye damage.- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.. **Germ cell mutagenicity** Based on available data, the classification criteria are not met.. **Carcinogenicity** Based on available data, the classification criteria are not met.. **Reproductive toxicity** Based on available data, the classification criteria are not met.- **Specific target organ toxicity - single exposure** Based on available data, the classification criteria are not met.- **Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.- **Aspiration hazard** Based on available data, the classification criteria are not met.**11.2 Information on other hazards****Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:** No further relevant information available.**12.2 Persistence and degradability** No further relevant information available.**12.3 Bioaccumulative potential** No further relevant information available.**12.4 Mobility in soil** No further relevant information available.**12.5 Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.**12.7 Other adverse effects****Remark:** Toxic for fish**Additional ecological information:****General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Recommendation** Must not be disposed together with household garbage. Do not allow product to reach sewage system.**European waste catalogue**

HP6 Acute Toxicity

HP8 Corrosive

HP14 Ecotoxic

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Uncleaned packaging:**. Recommendation:** Disposal must be made according to official regulations.**SECTION 14: Transport information****14.1 UN number or ID number**

ADR/RID/ADN, IMDG, IATA

UN1760

14.2 UN proper shipping name

ADR/RID/ADN

IMDG

IATA

UN1760 CORROSIVE LIQUID, N.O.S. (Trihexyl(tetradecyl)phosphonium chloride), ENVIRONMENTALLY HAZARDOUS CORROSIVE LIQUID, N.O.S. (Trihexyl(tetradecyl)phosphonium chloride), MARINE POLLUTANT CORROSIVE LIQUID, N.O.S. (Trihexyl(tetradecyl)phosphonium chloride)

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG



Class

8

Label

8

IATA



Class

8

Label

8

14.4 Packing group

ADR/RID/ADN, IMDG, IATA

II

14.5 Environmental hazards:**Marine pollutant:****Special marking (ADR/RID/ADN):**

Product contains environmentally hazardous substances: Trihexyl(tetradecyl)phosphonium chloride
Symbol (fish and tree)
Symbol (fish and tree)

14.6 Special precautions for user**Hazard identification number (Kemler code):****EMS Number:****Stowage Category****Stowage Code**

Warning: Corrosive substances.
80
F-A,S-B
B
SW2 Clear of living quarters.

14.7 Maritime transport in bulk according to IMO instruments Not applicable.**Transport/Additional information:**

ADR/RID/ADN

Limited quantities (LQ)**Excepted quantities (EQ)**

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

Transport category**Tunnel restriction code****IMDG****Limited quantities (LQ)****Excepted quantities (EQ)**

2

E

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 1760 CORROSIVE LIQUID, N.O.S. (TRIHXYL(TETRADECYL)PHOSPHONIUM CHLORIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Labelling according to Regulation (EC) No 1272/2008** The substance is classified and labelled according to the CLP regulation.

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Hazard pictograms

GHS05

GHS07

GHS09

Signal word Danger**Hazard-determining components of labelling:**
 Trihexyl(tetradecyl)phosphonium chloride
 triphenylphosphine oxide
Hazard statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Directive 2012/18/EU**Named dangerous substances - ANNEX I** Substance is not listed.**Seveso category** E2 Hazardous to the Aquatic Environment**Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t**REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3**DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

REGULATION (EU) 2019/1148**Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

15.2 Chemical safety assessment:

For this product, no chemical safety assessment has been performed.

A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

For research and development use only.

Relevant phrases

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Department issuing SDS: Regulatory affairs department**Contact:**

Email: hse@solvionic.com

Phone number: +33 (0)5.34.63.35.35

Date of previous version: 18.06.2023**Version number of previous version:** 4

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Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods (Código Marítimo Internacional de Mercancías Peligrosas).
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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Annex: Exposure scenario

Short title of the exposure scenario
Sector of Use SU24 Scientific research and development

Product category PC21 Laboratory chemicals

Description of the activities / processes covered in the Exposure Scenario See section 1 of the annex to the Safety Data Sheet.

Conditions of use
Duration and frequency 5 workdays/week.

Physical parameters
Physical state Liquid

Concentration of the substance in the mixture Raw material.

Used amount per time or activity Smaller than 100 g per application.

Other operational conditions
Other operational conditions affecting environmental exposure Use only on hard ground.

Other operational conditions affecting worker exposure

Avoid contact with eyes.

Avoid contact with the skin.

Other operational conditions affecting consumer exposure No special measures required.

Other operational conditions affecting consumer exposure during the use of the product Not applicable.

Risk management measures
Worker protection
Organisational protective measures No special measures required.

Technical protective measures

Use product only in enclosed systems.

Ensure that suitable extractors are available on processing machines

Personal protective measures

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles

Protective gloves

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.

Measures for consumer protection Ensure adequate labelling.

Environmental protection measures
Water

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

Do not allow to reach sewage system.

Soil Prevent contamination of soil.

Disposal measures Ensure that waste is collected and contained.

Disposal procedures Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Waste type Partially emptied and uncleaned packaging

Exposure estimation
Consumer Not relevant for this Exposure Scenario.

Guidance for downstream users No further relevant information available.

UE