

Creation Date 22-Jun-2009

Revision Date 16-May-2024

Revision Number 2

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: **TRIMETHYLTIN CHLORIDE, 1M (25 WT.%) SOLUTION IN HEXANES**
Cat No. : **S37047**
Molecular Formula **C3 H9 Cl Sn**

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
Erlenbachweg 2, 76870 Kandel, Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

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Flammable liquids	Category 2 (H225)
<u>Health hazards</u>	
Aspiration Toxicity	Category 1 (H304)
Acute oral toxicity	Category 2 (H300)
Acute dermal toxicity	Category 1 (H310)
Acute Inhalation Toxicity - Vapors	Category 1 (H330)
Skin Corrosion/Irritation	Category 2 (H315)
Reproductive Toxicity	Category 2 (H361f)
Specific target organ toxicity - (single exposure)	Category 3 (H336)
Specific target organ toxicity - (repeated exposure)	Category 2 (H373)
<u>Environmental hazards</u>	
Acute aquatic toxicity	Category 1 (H400)
Chronic aquatic toxicity	Category 1 (H410)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor
H300 + H310 + H330 - Fatal if swallowed, in contact with skin or if inhaled
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H336 - May cause drowsiness or dizziness
H361f - Suspected of damaging fertility
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life

Precautionary Statements

P201 - Obtain special instructions before use
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Hexane	110-54-3	EEC No. 203-777-6	75	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Repr. 2 (H361f) STOT RE 2 (H373) Aquatic Chronic 2 (H411)
Trimethyltin chloride	1066-45-1	EEC No. 213-917-8	25	Acute Tox. 2 (H300) Acute Tox. 1 (H310) Acute Tox. 2 (H330) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Hexane	STOT RE 2 (H373) :: C>=5%	-	-

Note

Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
Inhalation	Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration. Risk of serious damage to the lungs (by aspiration).
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

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4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Metal oxides, Hydrogen chloride gas.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid ingestion and inhalation. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of

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the equipment must be grounded.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Flammables area. Store under an inert atmosphere. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

Technical Rules for Hazardous Substances (TRGS) 510
Storage Class (LGK) (Germany)

Class 3

Switzerland - Storage of hazardous substances

Storage class - SC 3

<https://www.kvu.ch/de/themen/stoffe-und-produkte>

<https://www.kvu.ch/fr/themes/substances-et-produits>

<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Hexane	TWA: 20 ppm (8hr) TWA: 72 mg/m ³ (8hr)	TWA: 72 mg/m ³ TWA: 20 ppm STEL: 60 ppm STEL: 216 mg/m ³	TWA / VME: 20 ppm (8 heures). restrictive limit TWA / VME: 72 mg/m ³ (8 heures). restrictive limit TWA / VME: 1000 mg/m ³ (8 heures). STEL / VLCT: 1500 mg/m ³ .	TWA: 20 ppm 8 uren TWA: 72 mg/m ³ 8 uren	TWA / VLA-ED: 20 ppm (8 horas) TWA / VLA-ED: 72 mg/m ³ (8 horas)
Trimethyltin chloride		STEL: 0.2 mg/m ³ 15 min TWA: 0.1 mg/m ³ 8 hr Skin	TWA / VME: 0.1 mg/m ³ (8 heures). STEL / VLCT: 0.2 mg/m ³ .		STEL / VLA-EC: 0.2 mg/m ³ (15 minutos). TWA / VLA-ED: 0.1 mg/m ³ (8 horas) Piel

Component	Italy	Germany	Portugal	The Netherlands	Finland
Hexane	TWA: 20 ppm 8 ore. Time Weighted Average TWA: 72 mg/m ³ 8 ore. Time Weighted Average	TWA: 180 mg/m ³ TWA: 50 ppm	TWA: 20 ppm 8 horas TWA: 72 mg/m ³ 8 horas Pele	STEL: 144 mg/m ³ 15 minuten TWA: 72 mg/m ³ 8 uren	TWA: 20 ppm 8 tunteina TWA: 72 mg/m ³ 8 tunteina Iho
Trimethyltin chloride		TWA: 0.001 ppm (8 Stunden). AGW - exposure factor 4 TWA: 0.005 mg/m ³ (8 Stunden). AGW - exposure factor 4	STEL: 0.2 mg/m ³ 15 minutos TWA: 0.1 mg/m ³ 8 horas Pele		

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		<p>TWA: 0.001 ppm (8 Stunden). MAK can occur as vapor and aerosol at the same time</p> <p>TWA: 0.005 mg/m³ (8 Stunden). MAK can occur as vapor and aerosol at the same time</p> <p>Höhepunkt: 0.004 ppm</p> <p>Höhepunkt: 0.02 mg/m³</p> <p>Haut</p>			
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Component	Austria	Denmark	Switzerland	Poland	Norway
Hexane	<p>MAK-KZGW: 80 ppm 15 Minuten</p> <p>MAK-KZGW: 288 mg/m³ 15 Minuten</p> <p>MAK-TMW: 20 ppm 8 Stunden</p> <p>MAK-TMW: 72 mg/m³ 8 Stunden</p>	<p>TWA: 20 ppm 8 timer</p> <p>TWA: 72 mg/m³ 8 timer</p> <p>STEL: 40 ppm 15 minutter</p> <p>STEL: 144 mg/m³ 15 minutter</p>	<p>Haut/Peau</p> <p>STEL: 400 ppm 15 Minuten</p> <p>STEL: 1440 mg/m³ 15 Minuten</p> <p>TWA: 50 ppm 8 Stunden</p> <p>TWA: 180 mg/m³ 8 Stunden</p>	<p>TWA: 72 mg/m³ 8 godzinach</p>	<p>TWA: 20 ppm 8 timer</p> <p>TWA: 72 mg/m³ 8 timer</p> <p>TWA: 40 ppm 8 timer</p> <p>TWA: 275 mg/m³ 8 timer</p> <p>STEL: 30 ppm 15 minutter. value calculated</p> <p>STEL: 108 mg/m³ 15 minutter. value calculated</p>
Trimethyltin chloride	<p>Haut</p> <p>MAK-KZGW: 0.2 mg/m³ 15 Minuten</p> <p>MAK-TMW: 0.1 mg/m³ 8 Stunden</p>		<p>Haut/Peau</p> <p>STEL: 0.2 mg/m³ 15 Minuten</p> <p>STEL: 0.024 ppm 15 Minuten</p> <p>STEL: 0.12 mg/m³ 15 Minuten</p> <p>TWA: 0.1 mg/m³ 8 Stunden</p> <p>TWA: 0.003 ppm 8 Stunden</p> <p>TWA: 0.015 mg/m³ 8 Stunden</p>		<p>TWA: 0.1 mg/m³ 8 timer</p> <p>Hud</p>

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Hexane	<p>TWA: 20 ppm</p> <p>TWA: 72.0 mg/m³</p>	<p>kože</p> <p>TWA-GVI: 20 ppm 8 satima.</p> <p>TWA-GVI: 72 mg/m³ 8 satima.</p>	<p>TWA: 20 ppm 8 hr.</p> <p>TWA: 72 mg/m³ 8 hr.</p> <p>STEL: 60 ppm 15 min</p> <p>STEL: 216 mg/m³ 15 min</p> <p>Skin</p>	<p>TWA: 20 ppm</p> <p>TWA: 72 mg/m³</p>	<p>TWA: 70 mg/m³ 8 hodinách.</p> <p>Potential for cutaneous absorption</p> <p>Ceiling: 200 mg/m³</p>

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Hexane	<p>TWA: 20 ppm 8 tundides.</p> <p>TWA: 72 mg/m³ 8 tundides.</p>	<p>TWA: 20 ppm 8 hr</p> <p>TWA: 72 mg/m³ 8 hr</p>	<p>TWA: 20 ppm</p> <p>TWA: 72 mg/m³</p>	<p>TWA: 72 mg/m³ 8 órában. AK</p> <p>lehetséges borön keresztüli felszívódás</p>	<p>TWA: 20 ppm 8 klukkustundum.</p> <p>TWA: 72 mg/m³ 8 klukkustundum.</p> <p>Ceiling: 40 ppm</p> <p>Ceiling: 144 mg/m³</p>

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Hexane	<p>TWA: 20 ppm</p> <p>TWA: 72 mg/m³</p>	<p>TWA: 20 ppm IPRD</p> <p>TWA: 72 mg/m³ IPRD</p>	<p>TWA: 20 ppm 8 Stunden</p> <p>TWA: 72 mg/m³ 8 Stunden</p>	<p>TWA: 20 ppm</p> <p>TWA: 72 mg/m³</p>	<p>TWA: 20 ppm 8 ore</p> <p>TWA: 72 mg/m³ 8 ore</p>

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Hexane	<p>TWA: 300 mg/m³ 0780</p> <p>MAC: 900 mg/m³</p>	<p>Ceiling: 140 mg/m³</p> <p>TWA: 20 mg/m³</p> <p>TWA: 72 mg/m³</p>	<p>TWA: 20 ppm 8 urah</p> <p>TWA: 72 mg/m³ 8 urah</p> <p>STEL: 576 mg/m³ 15 minutah</p> <p>STEL: 160 ppm 15 minutah</p>	<p>Binding STEL: 50 ppm 15 minuter</p> <p>Binding STEL: 180 mg/m³ 15 minuter</p> <p>TLV: 20 ppm 8 timmar. NGV</p> <p>TLV: 72 mg/m³ 8 timmar. NGV</p>	<p>TWA: 20 ppm 8 saat</p> <p>TWA: 72 mg/m³ 8 saat</p>

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Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Hexane			2,5-Hexanedione: 5 mg/g creatinine urine end of shift	2,5-Hexanedione: 0.2 mg/L urine end of workweek	2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis): 5 mg/L urine (end of shift)

Component	Italy	Finland	Denmark	Bulgaria	Romania
Hexane					2,5-Hexandione: 5 mg/g Creatinine urine end of shift

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Hexane			2,5-Hexanedione: 5 mg/L urine end of exposure or work shift 4,5-Dihydroxy-2-hexanone: 5 mg/L urine end of exposure or work shift		

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry

MDHS 99 Metals in air by ICP-AES

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Hexane 110-54-3 (75)				DNEL = 11mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Hexane 110-54-3 (75)				DNEL = 75mg/m ³

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

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Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Viton (R)	recommendations			

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown conforming to EN14387

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State

Liquid

Appearance

Colorless

Odor

No information available

Odor Threshold

No data available

Melting Point/Range

No data available

Softening Point

No data available

Boiling Point/Range

No information available

Flammability (liquid)

Highly flammable

On basis of test data

Flammability (solid,gas)

Not applicable

Liquid

Explosion Limits

No data available

Flash Point

-23 °C / -9.4 °F

Method - No information available

Autoignition Temperature

No data available

Decomposition Temperature

No data available

pH

No information available

Viscosity

No data available

Water Solubility

No information available

Solubility in other solvents

No information available

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Partition Coefficient (n-octanol/water)

Component	log Pow	
Hexane	4.11	
Vapor Pressure	No data available	
Density / Specific Gravity	0.797	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	(liquid) Not applicable	

9.2. Other information

Molecular Formula	C3 H9 Cl Sn
Molecular Weight	199.25
Explosive Properties	Vapors may form explosive mixtures with air

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Moisture sensitive. Air sensitive.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Exposure to moist air or water.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Metal oxides. Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral	Category 2 ATE = 20 mg/kg
Dermal	Category 1 ATE = 19.9 mg/kg
Inhalation	Category 1 ATE = 0.2 mg/l

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexane	LD50 = 25 g/kg (Rat)	LD50 = 3000 mg/kg (Rabbit)	LC50 = 48000 ppm (Rat) 4 h

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Trimethyltin chloride	LD50 = 12600 µg/kg (Rat)	-	-
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(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;
Reproductive Effects

Category 2
Experiments have shown reproductive toxicity effects on laboratory animals.

(h) STOT-single exposure;

Category 3

Results / Target organs

Central nervous system (CNS).

(i) STOT-repeated exposure;

Category 2

Target Organs

None known, Peripheral Nervous System (PNS), Central nervous system (CNS).

(j) aspiration hazard;

Category 1

Other Adverse Effects

The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Hexane	LC50: 2.1 - 2.98 mg/L, 96h flow-through (Pimephales promelas)	EC50: 3.87 mg/L/48h	
Trimethyltin chloride	Oryzias latipes LC50: 5.62	EC50: 0.47 mg/L/24H	EC50: 0.214 mg/L/72H

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	mg/L/48H		
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12.2. Persistence and degradability	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary
Persistence	May persist.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential	Product has a high potential to bioconcentrate
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Component	log Pow	Bioconcentration factor (BCF)
Hexane	4.11	No data available

12.4. Mobility in soil	No information available .
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12.5. Results of PBT and vPvB assessment	No data available for assessment.
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12.6. Endocrine disrupting properties	
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects	
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains.
Switzerland - Waste Ordinance	Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600 https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

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14.1. UN number UN1992
14.2. UN proper shipping name Flammable liquid, toxic, n.o.s.
Technical Shipping Name Hexane, Trimethyltin chloride
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

ADR

14.1. UN number UN1992
14.2. UN proper shipping name Flammable liquid, toxic, n.o.s.
Technical Shipping Name Hexane, Trimethyltin chloride
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

IATA

14.1. UN number UN1992
14.2. UN proper shipping name Flammable liquid, toxic, n.o.s.
Technical Shipping Name Hexane, Trimethyltin chloride
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

14.5. Environmental hazards Dangerous for the environment
Product is a marine pollutant according to the criteria set by IMDG/IMO

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Hexane	110-54-3	203-777-6	438-390-3	-	X	X	KE-18626	X	X
Trimethyltin chloride	1066-45-1	213-917-8	-	-	X	X	-	-	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Hexane	110-54-3	X	ACTIVE	X	-	X	X	X
Trimethyltin chloride	1066-45-1	X	ACTIVE	-	X	X	X	X

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances	REACH (1907/2006) - Annex XVII - Restrictions	REACH Regulation (EC 1907/2006) article 59 -
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		Subject to Authorization	on Certain Dangerous Substances	Candidate List of Substances of Very High Concern (SVHC)
Hexane	110-54-3	-	Use restricted. See item 75. (see link for restriction details)	-
Trimethyltin chloride	1066-45-1	-	Use restricted. See item 20. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Hexane	110-54-3	Not applicable	Not applicable
Trimethyltin chloride	1066-45-1	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Hexane	WGK2	

Component	France - INRS (Tables of occupational diseases)
Hexane	Tableaux des maladies professionnelles (TMP) - RG 59,RG 84

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Hexane 110-54-3 (75)	Prohibited and Restricted Substances	Group I	

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Trimethyltin chloride 1066-45-1 (25)	Prohibited and Restricted Substances		
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15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

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

H225 - Highly flammable liquid and vapor
H300 - Fatal if swallowed
H304 - May be fatal if swallowed and enters airways
H310 - Fatal in contact with skin
H315 - Causes skin irritation
H330 - Fatal if inhaled
H336 - May cause drowsiness or dizziness
H361f - Suspected of damaging fertility
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H411 - Toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (volatile organic compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data

Health Hazards Calculation method

Environmental hazards Calculation method

Training Advice

Chemical incident response training.

Prepared By

Health, Safety and Environmental Department

Creation Date

22-Jun-2009

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16-May-2024

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Revision Summary

Initial Release.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text

End of Safety Data Sheet