

Safety Data Sheet

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Product identifier

Product code	TS-48999
Product name	Tri-Sil HTP Reagent
Chemical Name	Not Applicable
REACH registration number	No registration number is given yet for this substance / substances in this mixture since the annual import quantity is less than one tonnage per annum or the transition period for its registration according to Article 23 of REACH has not yet expired.

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

Relevant identified uses	For research use only
Use Description Code	SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen), PROC15 - Use as laboratory reagent, PC21 - Laboratory chemicals, SU24 - Scientific research and development
Uses advised against	Not for consumer use.

Details of the supplier of the safety data sheet

Manufacturer / Supplier

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NETHERLANDS
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24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident. Spill, Leak, Fire, Exposure, or Accident. Call CHEMTREC Within the USA + Canada: 1-800-424-9300 and 1-703-527-3887
Outside the USA + Canada: 1-703-741-5970

Country Specific Emergency Number (if available):

CHEMTREC Ireland (Dublin)	+(353)-19014670 (Greeting Language: English and Irish)
CHEMTREC UK (London)	+(44)-870-8200418 (Greeting Language: English)

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards

Flammable liquids	Category 2
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Health hazards

Acute oral toxicity	Category 4
Acute dermal toxicity	Category 3
Acute inhalation toxicity	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Environmental hazards

Not Hazardous

Additional information

No information available

Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapour
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled

Precautionary Statements

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P270 - Do not eat, drink or smoke when using this product

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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 sand, dry chemical or alcohol-resistant foam for extinction

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

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

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards

Not Applicable

SECTION 3: Composition/information on ingredients

Chemical Name	CAS No	EINECS-No.	Weight-%	REACH registration number	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	999-97-3	-	10-20	-	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Corr. 1B (H314)
Trimethylchlorosilane	75-77-4	-	5-7	-	Flamm. Liq.2 - H225 Skin Corr.1 - H314 Acute Tox.3 - H301 Acute Tox. 4 - H312 Acute Tox. 3 - H331
Pyridine	110-86-1	203-809-9	65-80	-	Flam. Liq. 2 - H225 Acute Tox. 4 - H332 Acute Tox. 4 - H312 Acute Tox. 4 - H302

SECTION 4: First aid measures

Description of first aid measures

Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Immediate medical attention is required.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Get medical attention if symptoms occur.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If symptoms persist, call a doctor.
Notes to Physician	Treat symptomatically.

Most important symptoms and effects, both acute and delayed

H225 - Highly flammable liquid and vapour H302 - Harmful if swallowed H311 - Toxic in contact with skin H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H332 - Harmful if inhaled

Indication of any immediate medical attention and special treatment needed

If skin irritation occurs: Get medical advice/ attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media
Unsuitable extinguishing media

Water spray. Carbon dioxide (CO₂). Foam. Dry chemical.
No information available.

Special hazards arising from the substance or mixture

None known

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation
Avoid contact with skin, eyes or clothing
Use personal protection equipment
See section 8 for more information

Environmental precautions

No special environmental precautions required. Avoid discharge into drains and waterways whenever possible.

Methods and material for containment and cleaning up

Soak up with inert absorbent material.

Reference to other sections

See section 8 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Always wear recommended Personal Protective Equipment. See section 8 for more information. Do not get in eyes, on skin, or on clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use adequate ventilation and/or wear appropriate respirator.

Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers. Store in accordance with local regulations.

Storage Conditions

2 to 8°C (35.6 to 46.4°F).

Specific end use(s)

For research use only.

SECTION 8: Exposure controls/personal protection

Control parameters

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	None	None	None

Chemical Name	Austria	Belgium (TWA)	Czech Republic
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	5 ppm 15 mg/m ³	1 ppm 3.3 mg/m ³	5 mg/m ³ TWA 10 mg/m ³ Ceiling Potential for cutaneous absorption

Chemical Name	Denmark (TWA)	Finland OEL (TWA)	France OEL (VME)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	5 ppm 15 mg/m ³	16 mg/m ³ 5 ppm	5 ppm 15 mg/m ³

Chemical Name	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	None	5 ppm 15 mg/m ³	None

Chemical Name	Lithuania OEL (TWA)	Netherlands OEL (MAC)	Norway
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	2 mg/m ³	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	5 ppm 15 mg/m ³	0.9 mg/m ³	5 ppm TWA 15 mg/m ³ TWA 10 ppm STEL 22.5 mg/m ³ STEL

Chemical Name	Poland	Portugal	Spain OEL (TWA)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	5 mg/m ³ TWA Skin Notation	5 ppm TWA 15 mg/m ³ TWA A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	1 ppm 3 mg/m ³

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	United Kingdom
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- 999-97-3	None	None	None
Trimethylchlorosilane 75-77-4	None	None	None
Pyridine 110-86-1	2 ppm TLV NGV; 7 mg/m ³ TLV NGV	10 ppm STEL 30 mg/m ³ STEL 5 ppm TWA 15 mg/m ³ TWA	5 ppm TWA; 16 mg/m ³ TWA

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Exposure controls

Personal protection equipment

Respiratory protection In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

Hand protection Wear suitable gloves Glove material: Compatible chemical-resistant gloves.

Eye protection Tight sealing safety goggles.

Skin and Body Protection Wear suitable protective clothing.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No special environmental precautions required.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	liquid	
Colour	Colourless, light yellow	
Odour	No data	
Odour Threshold	No data	
Molecular Weight	No data	
Melting point / melting range	°C No data	°F No data
Boiling point / boiling range	°C No data	°F No data
Flash point	°C 22.222	°F 71.9996
Autoignition Temperature	°C No data	°F No data
Decomposition temperature	°C No data	°F No data
Evaporation rate	No data	
Flammability (solid, gas)	Highly flammable in the presence of open flames, sparks and static discharge and heat.	
Upper explosion limit	No data	
Lower explosion limit	No data	
Vapour Pressure	No data	
Vapour density	No data	
Relative density	No data	
Specific gravity	No data	
Solubility	No data	
Partition coefficient: n-octanol/water	No data	
Viscosity	No data	
Explosive properties	No data	
Oxidising properties	No data	
Other information	No data.	

SECTION 10: Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous reaction has not been reported.
Conditions to avoid	Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	No dangerous reaction known under conditions of normal use.
Hazardous decomposition products	No known hazardous decomposition products.

SECTION 11: Toxicological information

Information on toxicological effects

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	= 813 mg/kg (Rat)	No data available	=8700mg/m ³ (Rat) =1516ppm(Rat)
Trimethylchlorosilane	= 5660 µL/kg (Rat)	No data available	=12.9mg/L(Rat)
Pyridine	= 891 mg/kg (Rat) = 866 mg/kg (Rat)	No data available	=28500mg/m ³ (Rat) =12.898mg/L(Rat)

Principal Routes of Exposure

Skin corrosion/irritation	Causes severe burns
Serious eye damage/irritation	Causes serious eye damage
Respiratory or skin sensitisation	Data are conclusive but insufficient for classification
Specific target organ toxicity (STOT) – single exposure	Data are conclusive but insufficient for classification
Specific target organ toxicity (STOT) – repeated exposure	Data are conclusive but insufficient for classification
Carcinogenicity	Data are conclusive but insufficient for classification
Germ cell mutagenicity	Data are conclusive but insufficient for classification
Reproductive Toxicity	Data are conclusive but insufficient for classification
Aspiration Hazard	Data are conclusive but insufficient for classification

SECTION 12: Ecological information

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	No data available	Daphnia magna EC50=186 mg/L (48 h)	No data available	No data available	No data available
Trimethylchlorosilane	No data available	No data available	No data available	No data available	logPow3
Pyridine	Tetrahymena pyriformis EC50=520 mg/L (24 h)	Daphnia magna EC50=520 mg/L (24 h)	No data available	No data available	logPow0.65

Mobility in soil No information available.

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Results of PBT and vPvB assessment

No information available.

Other adverse effects

No information available.

SECTION 13: Disposal considerations

Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

SECTION 14: Transport information

IATA / ADR / DOT-US / IMDG

This product is subject to the de minimis exceptions for dangerous goods / hazardous materials in accordance with the following regulations: IATA 2.6.10, ADR 3.5.1.4, and U.S. DOT 49 CFR 173.4b.

UN number	2924
UN proper shipping name	Flammable liquid, corrosive, n.o.s. (Pyridine, 1,1,1,3,3,3-Hexamethyldisilazane)
Transport hazard class(es)	3 (8)
Packing group	II

Environmental hazards

Not Applicable

Special precautions for user

Not Applicable

Transport in bulk according to Annex II of MARPOL and the IBC Code

Not Applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture**Substances of Very High Concern**

None.

Substance subject to authorisation per REACH Annex XIV

None

Restricted substances under EC 1907/2006, Annex XVII

None.

Substances listed under Annex I of Regulation (EC) No 689/2008

None.

Restricted substances under Annex V of Regulation (EC) No 689/2008

None.

Substances under Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

None.

German Water hazard classes (Wassergefährdungsklassen)

Chemical Name	Weight-%	Water hazard class (WGK)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	10-20	hazard class 2 - obviously hazardous to water
Trimethylchlorosilane	5-7	hazard class 1 - slightly hazardous to water
Pyridine	65-80	hazard class 2 - obviously hazardous to water

Other International Inventories

Chemical Name	EINECS (European Union)	ELINCS (European List of Notified Chemical Substances)	ENCS (Japan)	PICCS (Philippines)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	Listed	-	Listed	Listed
Trimethylchlorosilane	Listed	-	Listed	Listed
Pyridine	Listed	-	Listed	Listed

Chemical Name	AICS (Australia)	South Korea (KECL)	Canada (DSL)	NDSL
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	Listed	-	Listed	Listed
Trimethylchlorosilane	Listed	-	Listed	Listed
Pyridine	Listed	-	Listed	Listed

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Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-	Listed	Listed	Listed	-
Trimethylchlorosilane	Listed	Listed	Listed	-
Pyridine	Listed	Listed	Listed	-

Chemical safety assessment

No Chemical safety assessment has been carried out.

SECTION 16: Other information

Reason for revision	Update according to Commission Regulation (EU) No 830/2015
Revision number	2
Revision date	30-Jun-2020

References

- ECHA: <http://echa.europa.eu/>
- TOXNET: <http://toxnet.nlm.nih.gov/>
- eChemPortal: <http://www.echemportal.org/>
- LOLI database: <https://www.chemadvisor.com/loli-database>

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

Flammable liquids	Category 2	Calculation method
Acute oral toxicity	Category 4	Calculation method
Acute dermal toxicity	Category 3	Calculation method
Acute inhalation toxicity	Category 4	Calculation method
Skin corrosion/irritation	Category 1	Calculation method
Serious eye damage/eye irritation	Category 1	Calculation method

Abbreviations and acronyms

TWA - Time-Weighted Average

OELs - Occupational Exposure Limits

STEL - Short Term Exposure Limit

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

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

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

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

CEPA - Canadian Environmental Protection Act

EPA - Environmental Protection Agency

OSHA - Occupational Safety and Health Administration of the US Department of Labour

IATA - International Air Transport Association

DOT - Department of Transportation

IMDG - International Maritime Dangerous Goods

ACGIH - American Conference of Governmental Industrial Hygienists

NIOSH - National Institute for Occupational Safety and Health

AIHA - American Industrial Hygiene Association

HMIS - Department of Defense Hazardous Materials Information System

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"