



Preparing for the New Era of Laboratories

MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

TRICHLOROETHYLENE 99,5% AR

PRODUCT CODE : B-3075

CAS No : 79-01-6

FORMULA : C_2HCl_3

UN No : 1710

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

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

- 1.1 Product Name** : TRICHLOROETHYLENE 99,5% AR
- Synonyms** : TCE, Trichloroethene
- CAS No.** : 79-01-6
- HS Code** : 2903 22 00
- Chemical Formula** : C₂HCl₃
- Molecular Weight** : 131.39 g/mol
- Product Code** : B-3075
- Brand** : Labotiq
- 1.2 Manufacturer** : Labotiq
- Address** : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111
- Website** : www.labotiq.net
- Email** : labotiq.id@gmail.com
- For information** : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710
- Emergency number** : +6281316894650
- 1.3 Application** : Laboratory chemicals, Manufacture of substances

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Skin irritation, (Category 2)	H315: Causes skin irritation.
Eye irritation, (Category 2)	H319: Causes serious eye irritation.
Skin sensitization, (Sub-category 1B)	H317: May cause an allergic skin reaction.
Germ cell mutagenicity, (Category 2)	H341: Suspected of causing genetic defects.
Carcinogenicity, (Category 1B)	H350: May cause cancer.
Specific target organ toxicity - single exposure, (Category 3), Central nervous system	H336: May cause drowsiness or dizziness.
Long-term (chronic) aquatic hazard, (Category 3)	H412: Harmful to aquatic life with long lasting effects.

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H412	Harmful to aquatic life with long lasting effects.

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

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MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

Precautionary statement(s)

P202

Do not handle until all safety precautions have been read and understood.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P302 + P352

IF ON SKIN: Wash with plenty of 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.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements

none

Restricted to professional users.

Reduced labelling (≤125 ml)**Hazard pictograms****Signal word**

Danger

Hazard statements

H317

May cause an allergic skin reaction.

H341

Suspected of causing genetic defects.

H350

May cause cancer.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statements

P202

Do not handle until all safety precautions have been read and understood.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P302 + P352

IF ON SKIN: Wash with plenty of water.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



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Date : Nov 15th, 2024

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3.1 Substances

Synonyms : TCE, Trichloroethene
 Formula : C₂HCl₃
 Molecular weight : 131,39 g/mol
 CAS-No. : 79-01-6
 EC-No. : 201-167-4
 Index-No. : 602-027-00-9

3.2 Mixture

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
trichloroethylene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH) CAS-No. 79-01-6 EC-No. 201-167-4 Index-No. 602-027-00-9	Skin Irrit. 2; Eye Irrit. 2; Skin Sens. 1B; Muta. 2; Carc. 1B; STOT SE 3; Aquatic Chronic 3; H315, H319, H317, H341, H350, H336, H412 Concentration limits: >= 20 %: STOT SE 3, H336;	<=100 %

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

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

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

MATERIAL SAFETY DATA SHEET (SDS/MSDS)
TRICHLOROETHYLENE 99,5% AR

MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

5.1 Extinguishing media**Suitable extinguishing media**Water Foam Carbon dioxide (CO₂) Dry powder**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas, Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire

5.3 Advice for firefighters

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

5.4 Further information

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

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

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

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2 dalam SDS

7.2 Conditions for safe storage, including any incompatibilities**Storage conditions**

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Light sensitive. Handle and store under inert gas.

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

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Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, acute	inhalation	Systemic effects	164,1 mg/m ³
Worker DNEL, acute	inhalation	Local effects	164,1 mg/m ³
Worker DNEL, longterm	dermal	Systemic effects	
Worker DNEL, longterm	inhalation	Systemic effects	54,7 mg/m ³

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0,115 mg/l
Sea water	0,0115 mg/l
Aquatic intermittent release	0,208 mg/l
Sewage treatment plant	2,6 mg/l
Fresh water sediment	2,04 mg/kg
Sea sediment	0,204 mg/kg
Soil	0,344 mg/kg
oral	13,8 mg/kg

8.2 Exposure control

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

Handle with gloves. Gloves must be inspected prior to use. 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. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Viton®

Minimum layer thickness: 0,7 mm

Break through time: 480 min

Material tested: Vitoject®

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TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

Splash contact

Material: Nitrile rubber
 Minimum layer thickness: 0,4 mm
 Break through time: 10 min
 Material tested: Lapren®

Body Protection

protective clothing

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid, clear
	Colour: colourless
Odour	characteristic
Odour Threshold	No data available
pH	No data available
Melting point/freezingpoint	Melting point/range: -84,8 °C - lit
Initial boiling point and boiling range	86,7 °C - lit.
Flash point	- closed cup does not flash
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or	Upper explosion limit: > 99 %(V) –
	(Saturation - at high volume fractions, explosion turns into a
	decomposition reaction) Lower explosion limit: 7,9 %(V)
explosive limits	No data available
Vapour pressure	81,3 hPa at 20,0 °C
Vapour density	No data available
Density	1,463 g/mL at 25 °C - lit.
Relative density	1,46 at 20 °C
Water solubility	1,1 g/l at 20 °C
Partition coefficient: octanol/water	log Pow: 2,53 at 20 °C - Bioaccumulation is not expected.
Auto-ignition temperature	410,0 °C
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available
	Viscosity, dynamic: 0,58 mPa.s at 20 °C
Explosive properties	No data available
Oxidizing properties	none

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

MATERIAL SAFETY DATA SHEET (SDS/MSDS)
TRICHLOROETHYLENE 99,5% AR

MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

10.1 Reactivity

No data available

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Oxygen (as liquefied gas), Alkaline earth metals, alkali amides, semimetallic hydrogen compounds, perchloric acid, Light metals, aluminium chloride, Strong oxidizing agents, potassium nitrate

Risk of explosion with:

Alkali metals, Aluminum, Barium, alkali hydroxides, Lithium, magnesium, Powdered metals, sodium amide, Strong oxidizing agents, nitrogen dioxide, Boranes, Oxygen with alkali hydroxides, Oxygen with Pressure

Risk of ignition or formation of inflammable gases or vapours with:

Titanium, Beryllium, Epoxy constituents

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Oral: No data available

LC50 Inhalation - Rat - male - 4 h - 67,41 mg/l

Remarks: (ECHA)

LD50 Dermal - Rabbit - > 20.000 mg/kg

Remarks: (RTECS)

Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation - 4 h (OECD Test Guideline 404)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Remarks: Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation - 24 h

Remarks: (RTECS)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitisation

Local lymph node assay (LLNA) - Mouse

Result: positive (OECD Test Guideline 429)

MATERIAL SAFETY DATA SHEET (SDS/MSDS)
TRICHLOROETHYLENE 99,5% AR

MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

Germ cell mutagenicity

Suspected of causing genetic defects.

Test Type: Ames test

Test system: S. typhimurium

Metabolic activation: Metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: in vivo assay

Species: Mouse

Result: negative

Remarks: (ECHA)

Carcinogenicity

Presumed to have carcinogenic potential for humans

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Endocrine disrupting properties

Product: Assessment :

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: KX4550000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

12.1 Toxicity

Toxicity to fish

flow-through test LC50 - *Jordanella floridae* - 28,3 mg/l - 96 h (US-EPA)

Toxicity to algae

ErC50 - *Chlamydomonas reinhardtii* (green algae) - 36,5 mg/l - 72 h

Remarks: (ECHA) (trichloroethylene)

Toxicity to bacteria

Toxicity to fish(Chronic toxicity)

flow-through test NOEC - *Jordanella floridae* (flagfish) - 5,76 mg/l - 10 d Remarks: (ECHA)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d

Result: 19 % - Not readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

Bioaccumulation

Lepomis macrochirus - 14 d (trichloroethylene)

Bioconcentration factor (BCF): 17

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

Endocrine disrupting properties

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1710

IMDG: 1710

IATA: 1710

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

14.2 UN proper shipping name

ADR/RID: TRICHLOROETHYLENE

IMDG: TRICHLOROETHYLENE

IATA: Trichloroethylene

14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user**Further information**

No data available

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : trichloroethylene

This product contains a substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006. Listed substance / Sunset Date : trichloroethylene / 21.04.2016

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : trichloroethylene

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

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

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
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MATERIAL SAFETY DATA SHEET (SDS/MSDS)

TRICHLOROETHYLENE 99,5% AR



MSDS Number : 0400

Date : Nov 15th, 2024

Version : 1.0

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.

Version : 1.0

Revision Date : November 15, 2024