



Preparing for the New Era of Laboratories

MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

CHLOROFORM 99,8% AR

PRODUCT CODE : B-3020

CAS No : 67-66-3

FORMULA : CHCl_3

UN No : 1888

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

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MSDS Number : 0107

Date : Aug 28th, 2024

Version : 1.0

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

- 1.1 Product Name** : CHLOROFORM 99,8% AR
Synonyms : Trichloromethane, Methylidyne trichloride
CAS No. : 67-66-3
HS Code : 2903 13 00
Chemical Formula : CHCl₃
Molecular Weight : 119.38 g/mol
Product Code : B-3020
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, General Chemical reagent

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity, Oral (Category 4), H302
 Acute toxicity, Inhalation (Category 3), H331
 Skin irritation (Category 2), H315 Eye irritation (Category 2), H319
 Carcinogenicity (Category 2), H351
 Reproductive toxicity (Category 2), H361d
 Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
 Specific target organ toxicity - repeated exposure, Oral (Category 1), Liver, Kidney, H372

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)

H302

Harmful if swallowed.

H315

Causes skin irritation.

H319

Causes serious eye irritation.

H331

Toxic if inhaled.

H336

May cause drowsiness or dizziness.

H351

Suspected of causing cancer.

H361d

Suspected of damaging the unborn child.

H372

Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed.

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Precautionary statement(s)

P202

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

P301 + P312

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

P302 + P352

IF ON SKIN: Wash with plenty of water.

P304 + P340 + P311

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuing to rinse.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements

none

For use in industrial installations only.

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.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	: TCM, Trichloromethane, Methylidyne trichloride
Formula	: CHCl ₃
Molecular weight	: 119.38 g/mol
CAS-No.	: 67-66-3
EC-No.	: 200-663-8
Index-No.	: 602-006-00-4

3.2 Mixture

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

Component	Classification	Concentration
Chloroform CAS-No. 67-66-3 EC-No. 200-663-8 Index-No. 602-006-00-4	Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; H302, H331, H315, H319, H351, H361d, H336, H372 Concentration limits: 20 %: STOT SE 3, H336;	<=100 %
ethanol CAS-No. 64-17-5 EC-No. 200-578-6 Index-No. 603-002-00-5	Flam. Liq. 2; Eye Irrit. 2; H225, H319 Concentration limits: >= 50 %: Eye Irrit. 2A, H319;	>= 1 - < 10 %

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

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

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**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.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

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.

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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. Keep away from heat and sources of ignition. 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. Risk of explosion.

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 with liquid-absorbent material (e.g. Chemizorb®). 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.

Advice on protection

against fire and explosion Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing.

Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

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

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	333 mg/m3

Worker longterm	DNEL,	inhalation	Systemic effects	2,5 mg/m ³
Worker longterm	DNEL,	dermal	Systemic effects	
Worker longterm	DNEL,	inhalation	Local effects	2,5 mg/m ³
Consumer longterm	DNEL,	inhalation	Systemic effects	0,18 mg/m ³

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0,146 mg/l
Fresh water sediment	0,45 mg/kg
Sea water	0,015 mg/l
Sea sediment	0,09 mg/kg
Aquatic intermittent release	0,133 mg/l
Soil	0,56 mg/kg
Sewage treatment plant	0,048 mg/l

8.2 Exposure controls**Personal protective equipment****Appropriat engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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®

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,4 mm

Break through time: 10 min

Material tested: Camatril®

Body Protection

Flame retardant antistatic 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.

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Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid, clear
	Colour: colourless
Odour	No data available
Odour Threshold	No data available
pH	neutral
Melting point/freezingpoint	Melting point/range: -63 °C - lit.
Initial boiling point and boiling range	60,5 - 61,5 °C - lit.
Flash point	- Regulation (EC) No. 440/2008, Annex, A.9 does not flash
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	210 hPa at 20 °C
Vapour density	4,12 - (Air = 1.0)
Relative density	1,492 g/mL at 25 °C - lit. 1,48 g/mL at 25 °C
Water solubility	8,7 g/l at 23 °C - OECD Test Guideline 105
Partition coefficient: octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

Solubility in other solvents	organic solvent at 20 °C - miscible
Relative vapor density	4,12 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

Sensitivity to light heat-sensitive The product is chemically stable under standard ambient conditions (room temperature) . Contains the following stabilizer(s): ethanol ($\geq 0,5$ - ≤ 1 %)

10.3 Possibility of hazardous reactions

Risk of explosion with:

Ammonia, Amines, nitrogen oxides, bases, Oxygen, alkali, amides, organic, nitro compounds, strong alkalis, Fluorine, peroxi compounds, Alkaline earth metals, Alkali metals, Powdered metals, Methanol with alcoholates, Methanol with strong alkalis, Iron in powder form, various alloys, sensitive to shock Methanol with Sodium hydroxide, magnesium in powder form, Oxygen with alkali compounds, Aluminum in powder form, Acetone with alkali compounds, Potassium, sensitive to shock sodium, sensitive to shock,

Violent reactions possible with: phosphines, bis(dimethylamino)dimethyl tin, nonmetallic hydrogen compounds, Powdered metals, Light metals, Ketones, mineral acids, Strong oxidizing agents semimetallic hydrogen compounds

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10.4 Conditions to avoid

no information available

10.5 Incompatible materials

rubber, various plastics

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**

Acute toxicity estimate Oral - 912,56 mg/kg (Calculation method)

LD50 Oral - Rat - male - 908 mg/kg (OECD Test Guideline 401)

Acute toxicity estimate Oral - 908 mg/kg (ATE value derived from LD50/LC50 value)

Acute toxicity estimate Inhalation - 4 h - 3,12 mg/l - vapor (Calculation method)

LC50 Inhalation - Rat - 6 h - 9,17 mg/l - vapor

Acute toxicity estimate Inhalation - Expert judgment - 4 h - 3,1 mg/l - vapor

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

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

Result: slight irritation Remarks: (IUCLID)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes.

Remarks: (ECHA)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitisation

Maximization Test - Guinea pig

Result: negative (Regulation (EC) No. 440/2008, Annex, B.6)

Germ cell mutagenicity

Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: unscheduled

DNA synthesis assay Test system: Liver

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Micronucleus test

Species: Rat Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Test Type: unscheduled DNA synthesis assay

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Species: Rat Cell type: Liver cells
Application Route: Oral
Method: OECD Test Guideline 486

Result: negative
Test Type: in vivo assay Species: Mouse
Application Route: Inhalation
Result: negative
Remarks: (ECHA)

Carcinogenicity

The National Cancer Institute (NCI) has found clear evidence for carcinogenicity.
Limited evidence of a carcinogenic effect.(Chloroform)
IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

Reproductive toxicity

Suspected of damaging the unborn child. Suspected human reproductive toxicant(Chloroform)

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.(Chloroform)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity - Rat - female - Oral - NOAEL (No observed adverse effect level) - 34 mg/kg
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Vomiting, Cough, irritant effects, Shortness of breath, respiratory arrest, narcosis, Dizziness, Nausea, agitation, spasms, inebriation, Headache, Stomach/intestinal disorders, ataxia (impaired locomotor coordination), cardiovascular disorders Drying-out effect resulting in rough and chapped skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to algae
static test ErC50 - Chlamydomonas reinhardtii (green algae) - 13,3 mg/l - 72 h
Remarks: (ECHA) (Chloroform)

Toxicity to bacteria
Remarks: (ECHA) (Chloroform)

Toxicity to fish(Chronic toxicity)
flow-through test NOEC - Oryzias latipes - 0,15 mg/l - 9 Months
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)
semi-static test NOEC - Daphnia magna (Water flea) - 6,3 mg/l - 21 d
Remarks: (ECHA)

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12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

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

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: 1888

IMDG: 1888

IATA 1888

14.2 UN proper shipping name

ADR/RID: CHLOROFORM

IMDG: CHLOROFORM

IATA: CHLOROFORM

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

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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.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

- H225 Highly flammable liquid and vapor.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H361d Suspected of damaging the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.

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

Health: 2

Flammability: 0

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.

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