
Material Safety Data Sheet

Product Name	<u>Chloroform</u>
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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:**Product Description:** Chloroform**Synonyms:** Methyl trichloride, Trichloromethane**CAS-No:** 67-66-3**EC-No.:** 200-663-8**Molecular Formula:** CHCl₃**REACH Registration No:** A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.**1.2. Relevant identified uses of the substance or mixture and uses advised against:****Recommended Use:** Laboratory chemicals**1.3. Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**
184-186/P, Chacharwadi Vasna,
Sarkhej-Bavla Highway,
Ta.: Sanand, Dist.: Ahmedabad,
Email: info@finarchemicals.com
Web: www.finarchemicals.com
- **E-Mail Address** safety@finarchemicals.com; info@finarchemicals.com

1.4. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717
- Registered office No: +91 - 79 – 40040085

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture:****Classification (REGULATION (EC) No 1272/2008)**

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 (Category 1), Liver, Kidney, H372

Long-term (chronic) aquatic hazard (Category 3), H412

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

2.2. Label Elements:**Labeling 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.

H412 Harmful to aquatic life with long lasting effects.

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

Precautionary statement(s)

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

Rinse mouth.

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.

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: Chloroform

3.2. Mixtures:

Component	CAS-No	EC-No.	Weight %
Chloroform	67-66-3	200-663-8	>99

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

- If inhaled**

Remove to fresh air. If not breathing, give artificial respiration. 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.

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

- **If Contact with skin**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

- **In case of eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- **If swallowed**

Do NOT induce vomiting. Call a physician or poison control center immediately.

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

Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: Causes central nervous system depression

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- Use Water Spray, 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:

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Carbon monoxide (CO). Carbon dioxide (CO₂). Phosgene. Hydrogen chloride gas.

5.3. Advice for firefighters:

Special protective equipment 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.

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures:**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see section 8.

6.2. Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up:

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling:**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed, then seek immediate medical assistance.

7.2. Conditions for safe storage, including any incompatibilities:

Keep containers tightly closed in a dry and well-ventilated place. Protect from direct sunlight.

Store under an inert atmosphere. Protect from moisture. Keep away from heat, sparks and open flame.

Keep away from incompatible materials.

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

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

8.2. Exposure Controls:

- **Appropriate Engineering Controls:**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal Protective Equipment:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye & Face Protection

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

Hand 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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental Exposure Controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties:**

- **Appearance:** Colorless
- **Physical State:** Liquid
- **Odor:** Sweet
- **pH:** No data available
- **Melting Point:** -63 °C
- **Ignition Temperature:** No data available
- **Decomposition Temperature:** Distillable in an undecomposed state at normal pressure.
- **Vapor Pressure:** 213 hPa at 20°C
- **Vapor Density:** 4.12 - (Air = 1.0)
- **Relative Density:** 1.48 g/mL at 25 °C
- **Volatility:** No data available
- **Bulk Density:** ca.700 kg/m³
- **Odor Threshold:** No data available
- **Viscosity:** 0.56 mPa s at 20 °C
- **Water/Oil Dist. Co eff.:** No data available
- **Ionicity (in Water):** No data available
- **Partition Co-efficient: n-octanol/water:** No data available
- **Boiling Point/Range:** 61 °C
- **Flash Point:** No data available
- **Sublimation Point:** No data available
- **Specific Gravity:** 1.48
- **Water Solubility:** Slightly soluble

9.2. Other information:**Molecular Formula:** CHCl₃**Molecular Weight:** 119.38 g/mol

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

No data available

10.2. Chemical stability:

Stable under normal conditions. UNSTABLE (REACTIVE) UPON DEPLETION OF INHIBITOR.

Light sensitive.

10.3. Possibility of hazardous reactions:

Risk of explosion with: Methanol, with, alcoholates Methanol, with, strong alkalis Iron, in powder form various alloys, sensitive to shock Methanol, with, Sodium hydroxide powdered magnesium Oxygen, with, alkali compounds Aluminium, in powder form Acetone, with, alkali compounds Potassium, sensitive to shock sodium, sensitive to shock Violent reactions possible with: Light metals, Powdered metals, Ketones, phosphines, semi metallic hydrogen compounds, bis(dimethylamino)dimethyl tin, strong oxidising agents, non-metallic hydrogen compounds, mineral acids

10.4. Conditions to avoid:

Incompatible products. Heat, flames, and sparks. Excess heat. Exposure to light. Protect from moisture.

10.5. Incompatible materials:

Strong oxidizing agents, Alkali metals, Aluminium, Acetone, various plastics, Rubber Strong oxidizing agents

10.6. Hazardous decomposition products:

Carbon monoxide (CO), Carbon dioxide (CO₂), Phosgene, Hydrogen chloride gas

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chloroform	LD50 = 695 mg/kg (Rat) LD50 = 450 mg/kg (Rat)	LD50 > 20 g/kg (Rabbit)	47,702 mg/L (Rat) 4 h
1-Pentene	>2000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	LC50 = 175000 mg/m ³ (Rat) 4 h

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

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)

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

Sensitization

Maximization Test - Guinea pig

Result: negative

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

Germ cell mutagenicity

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

(ECHA)

unscheduled DNA synthesis assay

Liver

Result: negative

(ECHA)

OECD Test Guideline 474

Rat - male and female - Red blood cells (erythrocytes)

Result: negative

OECD Test Guideline 486

Rat - male - Liver cells

Result: negative

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

Mouse - female

Result: negative

(ECHA)

Carcinogenicity

Suspected of causing cancer.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

Reproductive toxicity

Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Oral - Causes damage to organs through prolonged or repeated exposure. - Liver, Kidney

Aspiration hazard

No data available

11.2 Further Information

Repeated dose toxicity - Rat - female - Oral - NOAEL (No observed adverse effect level) - 34 mg/kg

RTECS: FS9100000

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 fish:

LC50 *Lepomis macrochirus* (Bluegill sunfish): 18 mg/l; 96 h

(IUCLID)

Toxicity to daphnia and other aquatic invertebrates:

EC50 *Daphnia magna* (Water flea): 79 mg/l; 48 h

(IUCLID)

EC5 *E.sulcatum*: > 6,560 mg/l; 72 h

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

(IUCLID) (maximum permissible toxic concentration)

Toxicity to algae:

IC5 Scenedesmus quadricauda (Green algae): 1,100 mg/l; 8 d

(IUCLID) (maximum permissible toxic concentration)

Toxicity to bacteria:

EC5 Pseudomonas putida: 125 mg/l; 16 h

(IUCLID) (maximum permissible toxic concentration)

EC50 activated sludge: 1,010 mg/l; 3 h

OECD Test Guideline 209

12.2 Persistence and degradability:

Biodegradability: 0 %; 14 d

OECD Test Guideline 301C

Not readily biodegradable.

12.3 Bio accumulate potential:

Component	Log Pow
Chloroform	2

12.4 Mobility in soil:

Distribution among environmental compartments Adsorption/Soil

log Koc: 1.72

(experimental)

Mobile in soils

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

Henry constant

14084 Pa*m³/mol

Method: (experimental)

(IUCLID) Distribution preferentially in air.

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Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

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

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	UN1888		
14.2 Proper shipping name	CHLOROFORM		
14.3 Class	6.1		
14.4 Packing group	III		
14.5 Environmentally hazardous	No		
14.6 Special precautions for user	Yes Tunnel Restriction Code - E	No	Yes EmS F-A S-A
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			
Not Relevant			

SECTION 15: Regulatory information

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

National Legislation

Storage class 6.1 D

Material Safety Data Sheet

Product Name	<u>Chloroform</u>
--------------	-------------------

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.

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.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word: **Danger**

Hazard statement(s)

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Material Safety Data Sheet

Product Name	<u>Chloroform</u>
---------------------	--------------------------

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Rinse mouth.

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.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements: None

For use in industrial installations only.

References: Not available

Created: 01/09/2020

Disclaimer:

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