



**INDENTA™**  
**Chemicals (India) Pvt. Ltd.**  
**(ISO 9001:2008 Certified Company)**



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## Material Safety Data Sheet Chloroform

### SECTION 1.1 – PRODUCT IDENTIFICATION

Product name : Chloroform  
Molecular formula : C H Cl<sub>3</sub>  
Molecular weight : 119.38  
CAS no. : 67-66-3

### SECTION: 1.2 – COMPANY IDENTIFICATION

**Company Name: Indenta Chemicals (India) Pvt. Ltd.**

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### SECTION 2: HAZARD IDENTIFICATION

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Acute Inhalation Toxicity – Vapors	Category 3
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system, Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Heart, Liver, Kidney, Blood.	

#### Label Elements

**Signal Word**

Danger

### **Hazard Statements**

Harmful if swallowed  
Causes skin irritation  
Causes serious eye irritation  
Toxic if inhaled  
May cause respiratory irritation  
May cause drowsiness or dizziness  
Suspected of causing cancer  
Suspected of damaging the unborn child  
May cause damage to organs through prolonged or repeated exposure

### **Precautionary Statements**

#### **Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray

#### **Response**

IF exposed or concerned: Get medical attention/advice

#### **Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

#### **Skin**

IF ON SKIN: Wash with plenty of soap and water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash before reuse

#### **Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

#### **Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

#### **Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### **Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

None identified

#### **Other hazards**

**WARNING!** This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

**WARNING!** This product contains a chemical known in the State of California to cause cancer.

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Component	CAS No	Weight %
Chloroform	67-66-3	>99
Ethyl alcohol	64-17-5	<0.8

**SECTION 4: FIRST AID MEASURES**

**General Advice:** Inhalation may cause anesthesia. Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion:** Do not induce vomiting. Drink 1 or 2 glasses of water. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects:** Breathing difficulties. May cause cardiac arrhythmia. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: May cause decreases in blood pressure and other cardiac effects: Symptoms may be delayed.

**Notes to Physician:** Treat symptomatically

**SECTION 5: FIRE FIGHTING MEASURES**

**Suitable Extinguishing Media:** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

**Unsuitable Extinguishing Media:** No information available.

**Flash Point:** None

**Method** - No information available

**Autoignition Temperature:** Not applicable

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact:** No information available

**Sensitivity to Static Discharge:** No information available

**Specific Hazards Arising from the Chemical:** Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

**Hazardous Combustion Products:** Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>) Hydrogen chloride gas phosgene.

**Protective Equipment and Precautions for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA:** Health 2 Flammability 1 Instability 1 Physical Hazards N/A

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:** Ensure adequate ventilation. Use personal protective equipment. Wear respiratory protection. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

**Environmental Precautions:** Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information

**Methods for Containment and Clean Up:** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**SECTION 7: HANDLING AND STORAGE**

**Handling:** Wear personal protective equipment. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition.

**Storage:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Store under an inert atmosphere. Protect from moisture

**SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION****Exposure Guidelines:**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chloroform	TWA: 10 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 9.78 mg/m <sup>3</sup> Ceiling: 50 ppm Ceiling: 240 mg/m <sup>3</sup>	IDLH: 500 ppm STEL: 2 ppm STEL: 9.78 mg/m <sup>3</sup>
Ethyl alcohol	STEL: 1000 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m <sup>3</sup> TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWA/EV
Chloroform	TWA: 5 ppm TWA: 24.4 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup> STEL: 50 ppm STEL: 225 mg/m <sup>3</sup>	TWA: 10 ppm
Ethyl alcohol	TWA: 1000 ppm TWA: 1880 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	STEL: 1000 ppm

**Engineering Measures:** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles. Face-shield.

**Skin and body protection:** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Physical State	Liquid
Appearance	Colourless
Odor	Aromatic, Slight sweet
Odor Threshold	No information available
pH	No information available

<b>Melting Point / Range</b>	-63 °C / -81.4 °F
<b>Boiling Point / Range</b>	61 - 61.5 °C / 141.8 - 142.7 °F
<b>Flash Point</b>	None
<b>Evaporation Rate</b>	11.6 (Butyl Acetate = 1.0)
<b>Flammability (Solid, Gas)</b>	Not applicable
<b>Flammability or Explosive Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	213 mbar @ 20 °C
<b>Vapor Density</b>	4.12 (Air = 1.0)
<b>Relative Density</b>	1.480
<b>Solubility</b>	Slightly soluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	0.56 mPa.s @ 20 °C
<b>Molecular Formula</b>	C H Cl <sub>3</sub>
<b>Molecular Weight</b>	119.38

## SECTION 10: STABILITY AND REACTIVITY

### Reactive Hazard

**Stability:** Stable under normal conditions. Unstable upon depletion of inhibitor. Light sensitive.

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

**Incompatible Materials:** Strong oxidizing agents, Alkali metals, Aluminium, Acetone

**Hazardous Decomposition Products:** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen chloride gas, phosgene

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Hazardous Reactions:** None under normal processing.

## Section 11: TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Product Information

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chloroform	450 mg/kg ( Rat ) 695 mg/kg ( Rat )	20 g/kg ( Rabbit )	47,702 mg/L ( Rat ) 4 h
Ethyl alcohol	3450 mg/kg ( Mouse )	Not listed	20000 ppm/10H ( Rat )

**Toxicologically Synergistic Products:** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation:** Irritating to eyes and skin

**Sensitization:** No information available

**Carcinogenicity:** The table below indicates whether each agency has listed any ingredient as a carcinogen. Limited evidence of a carcinogenic effect. Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Chloroform	67-66-3	Group 2B	Reasonably Anticipated	A3	X	A3
Ethyl alcohol	64-17-5	Group 1	Not listed	A3	X	Not listed

**Mutagenic Effects:** No information available.

**Reproductive Effects:** No information available.

**Developmental Effects:** No information available.

**Teratogenicity:** No information available.

**STOT - single exposure:** Respiratory system Central nervous system (CNS)

**STOT - repeated exposure:** Heart Liver Kidney Blood

**Aspiration hazard:** No information available

**Symptoms / effects, both acute and delayed:** Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: May cause decreases in blood pressure and other cardiac effects: Symptoms may be delayed.

**Endocrine Disruptor Information:** No information available.

**Other Adverse Effects:** Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.

## Section 12: ECOLOGICAL INFORMATION

### Ecotoxicity

Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Fresh Water Algae	Freshwater Fish	Microtox	Water Flea
Chloroform	EC50 = 560 mg/L/48h	300 mg/L LC50 96 h 18 mg/L LC50 96 h 71 mg/L LC50 96 h	Photobacterium phosphoreum: EC50 = 520 mg/L/5 min Photobacterium phosphoreum: EC50 = 670 mg/L/15 min Photobacterium phosphoreum: EC50 = 670 mg/L/30min	EC50 = 28.9 mg/L/48h
Ethyl alcohol	EC50 (72h) = 275 mg/l (Chlorella vulgaris)	Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h	Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min	EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h

**Persistence and Degradability:** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation:** No information available.

**Mobility:** Will likely be mobile in the environment due to its volatility.

Component	log Pow
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Chloroform	2
Ethyl alcohol	-0.32

### Section 13: DISPOSAL CONSIDERATION

**Waste Disposal Methods:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Chloroform - 67-66-3	U044	-

### Section 14: TRANSPORT INFORMATION

#### **DOT**

UN-No UN1888  
 Proper Shipping Name CHLOROFORM  
 Hazard Class 6.1  
 Packing Group III

#### **TDG**

UN-No UN1888  
 Proper Shipping Name CHLOROFORM  
 Hazard Class 6.1  
 Packing Group III

#### **IATA**

UN-No UN1888  
 Proper Shipping Name CHLOROFORM  
 Hazard Class 6.1  
 Packing Group III

#### **IMDG/IMO**

UN-No UN1888  
 Proper Shipping Name CHLOROFORM  
 Hazard Class 6.1  
 Packing Group III

### 15: OTHER REGULATORY INFORMATION

#### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chloroform	X	X	-	200-663-8	-		X	X	X	X	X
Ethyl alcohol	X	X	-	200-578-6	-		X	X	X	X	X

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover

the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313:**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chloroform	67-66-3	>99	0.1

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard Yes

Chronic Health Hazard Yes

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard

**Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chloroform	X	10 lb	X	X

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chloroform	X		-

**OSHA Occupational Safety and Health Administration**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chloroform	10 lb 1 lb	10 lb

**California Proposition 65:** This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
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Chloroform	67-66-3	Carcinogen Developmental	20 µg/day 40 µg/day	Developmental Carcinogen
Ethyl Alcohol	64-17-5	Developmental	-	Developmental Carcinogen

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chloroform	X	X	X	X	X
Ethyl Alcohol	X	X	X	X	X

**U.S. Department of Transportation****Reportable Quantity (RQ):** Y**DOT Marine Pollutant** N**DOT Severe Marine Pollutant** N**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Chloroform	15000 lb STQ

**Other International Regulations****Mexico – Grade:** No information available**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

**WHMIS Hazard Class:** D1B Toxic materials

D2A Very toxic materials

**SECTION 16: ADDITIONAL INFORMATION**

This information is provided for documentation purposes only.

The information contained in this Certificate of Analysis and Material Safety Data Sheet is obtained from current and reliable sources. The information contained herein is true and to the best of Indenta Chemicals (India) Pvt. Ltd. knowledge. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any Laws or Regulation. Final determination of the suitability of the material is the sole responsibility of the user. Customers should purchase products from Indenta Chemicals (India) Pvt. Ltd. with the clear understanding that all products must be used at the customers own discretion and only after referencing Material Safety Data Sheets (MSDS) and all other relevant technical information specific to the product. Indenta Chemicals (India) Pvt. Ltd. shall not be held responsible for any damages to property or for any adverse physical effects (including injury or bodily harm) caused by insufficient knowledge or the improper use of a product. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As with any manufacturing process, Indenta Chemicals (India) Pvt. Ltd. strongly recommends small lab scale testing for evaluation purposes prior to full commercial manufacturing. The information on the Indenta Chemicals (India) Pvt. Ltd. website is obtained from current and reliable sources but makes no representation as to its comprehensiveness or accuracy. Nothing contained herein should be considered as a recommendation by Indenta Chemicals (India) Pvt. Ltd. as to the fitness for any use. As the ordinary or otherwise use(s) of this product is outside the control of Indenta Chemicals (India) Pvt. Ltd., no representation or warranty, expressed or implied is made as to the effect(s) of such use(s) (including damage or injury), or the results obtained. The liability of Indenta Chemicals (India) Pvt. Ltd. is limited to the value of the goods and does not include any consequential loss. Indenta Chemicals (India) Pvt. Ltd. shall not be liable for any errors

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