

**Chloroform****BDH1109**

Version 1.4

Revision Date 03/25/2015

Print Date 05/08/2015

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Chloroform

MSDS Number : 000000011712

Product Use Description : Solvent

Manufactured for : VWR International LLC  
Radnor Corporate Center  
Building One  
Suite 200  
100 Matsonford Road  
Radnor PA 19087

For more information call : (Monday-Friday, 8:00am-5:00pm)  
1-800-932-5000

In case of emergency call : (24 hours/day, 7 days/week)  
1-800-424-9300 (USA Only)  
**For Transportation Emergencies:**  
1-800-424-9300 (CHEMTREC - Domestic)  
1-613-996-6666 (CANUTEC - Canada)

**SECTION 2. HAZARDS IDENTIFICATION****Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : sweet

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**Classification of the substance or mixture**

Classification of the substance or mixture : Acute toxicity, Category 4, Oral  
Skin irritation, Category 2  
Eye irritation, Category 2A  
Carcinogenicity, Category 2  
Reproductive toxicity, Category 2  
Specific target organ toxicity - single exposure, Category 1,  
Liver, Kidney, Central nervous system  
Specific target organ toxicity - repeated exposure, Category 1

**GHS Label elements, including precautionary statements**

Symbol(s)



Signal word

: Danger

Hazard statements

: Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye irritation.  
Suspected of causing cancer.  
Suspected of damaging fertility or the unborn child.  
Causes damage to organs.  
Causes 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.  
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/ eye protection/ face protection.

**Response:**

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

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IF ON SKIN: Wash with plenty of soap and water.  
 IF IN EYES: Rinse cautiously with water for several minutes.  
 Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed: Call a POISON CENTER or doctor/ physician.  
 Rinse mouth.  
 If skin irritation occurs: Get medical advice/ attention.  
 If eye irritation persists: Get medical advice/ attention.  
 Take off contaminated clothing and wash before reuse.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with local, state &amp; federal regulations.

**Carcinogenicity**

NTP: Chloroform 67-66-3  
 Reasonably Anticipated to be a Human Carcinogen.

IARC: Chloroform 67-66-3  
 Group 2B: Possibly carcinogenic to humans

ACGIH: Chloroform 67-66-3  
 A3: Confirmed animal carcinogen

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

Formula :  $\text{CHCl}_3$   
 Chemical nature : Substance

Chemical Name	CAS-No.	Concentration
Chloroform	67-66-3	100.00 %

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**SECTION 4. FIRST AID MEASURES**

- Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

**Notes to physician**

- Treatment : Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Dry chemical  
Carbon dioxide (CO<sub>2</sub>)  
Foam  
Cool closed containers exposed to fire with water spray.
- Specific hazards during firefighting : The product is not flammable.  
Exposure to decomposition products may be a hazard to health.  
In case of fire hazardous decomposition products may be produced such as:  
Gaseous hydrogen chloride (HCl).  
Phosgene  
Chlorine (Cl<sub>2</sub>)  
Carbon monoxide

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Carbon dioxide (CO<sub>2</sub>)

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Wear personal protective equipment.  
Immediately evacuate personnel to safe areas.  
Keep people away from and upwind of spill/leak.  
Isolate the affected area. Confine entry into the affected area to those persons properly protected (see Section 8 of MSDS).  
Ensure adequate ventilation.  
Avoid accumulation of vapours in low areas.  
Remove all sources of ignition.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.

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.  
Do not flush into surface water or sanitary sewer system.  
Do not allow run-off from fire fighting to enter drains or water courses.

Methods for cleaning up : Ventilate the area.  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Shovel into suitable container for disposal.  
Dispose of absorbed material in accordance with the regulations.

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**SECTION 7. HANDLING AND STORAGE****Handling**

Handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : The product is not flammable.  
Normal measures for preventive fire protection.  
Keep product and empty container away from heat and sources of ignition.  
Fire or intense heat may cause violent rupture of packages.  
Container hazardous when empty.

**Storage**

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep away from heat and sources of ignition.  
Keep away from direct sunlight.  
Protect from physical damage.  
Store away from incompatible substances.  
Container hazardous when empty.  
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

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- Engineering measures : Use with local exhaust ventilation.  
Prevent vapour buildup by providing adequate ventilation during and after use.
- Eye protection : Do not wear contact lenses.  
Wear as appropriate:  
Safety glasses with side-shields  
If splashes are likely to occur, wear:  
Goggles or face shield, giving complete protection to eyes
- Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.  
Replace when worn.
- Skin and body protection : Wear as appropriate:  
Solvent-resistant apron  
Solvent-resistant gloves  
If splashes are likely to occur, wear:  
Protective suit
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.  
Wear a positive-pressure supplied-air respirator.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.  
Use NIOSH approved respiratory protection.
- Hygiene measures : When using, do not eat, drink or smoke.  
Wash hands before breaks and immediately after handling the product.  
Keep working clothes separately.  
Remove and wash contaminated clothing before re-use.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.  
This material has an established AIHA ERPG exposure limit.  
The current list of ERPG exposure limits can be found at [http://www.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/2011erpgweelhandbook\\_table-only.pdf](http://www.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/2011erpgweelhandbook_table-only.pdf).

**Exposure Guidelines**

Components	CAS-No.	Value	Control	Upda	Basis
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			parameters	te	
Chloroform	67-66-3	TWA : time weighted average	(10 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
Chloroform	67-66-3	STEL : Short term exposure limit	9.78 mg/m3 (2 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
Chloroform	67-66-3	Ceiling : Ceiling Limit Value:	240 mg/m3 (50 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Chloroform	67-66-3	TWA : time weighted average	9.78 mg/m3 (2 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Color	: colourless
Odor	: sweet
pH	: Note: Not applicable
Melting point/freezing point	: -64 °C
Boiling point/boiling range	: 62 °C



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Flash point	: Note: does not flash
Evaporation rate	: 0.6 Method: Compared to Ether (anhydrous).
Lower explosion limit	: Note: Not applicable
Upper explosion limit	: Note: Not applicable
Vapor pressure	: 212 hPa at 20 °C(68 °F)
Vapor density	: 4.12 Note: (Air = 1.0)
Density	: 1.49 g/cm <sup>3</sup> at 20 °C
Water solubility	: 8 g/l at 20 °C
Ignition temperature	: > 1,000 °C
Molecular weight	: 119.37 g/mol

## SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under recommended storage conditions.
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Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks. Protect from heat/overheating. Keep away from direct sunlight.
Incompatible materials to avoid	: Metals Aluminium Magnesium Strong bases Strong oxidizing agents May attack many plastics, rubbers and coatings.
Hazardous decomposition products	: Gaseous hydrogen chloride (HCl). Phosgene Chlorine (Cl <sub>2</sub> ) Carbon monoxide Carbon dioxide (CO <sub>2</sub> )

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity	: LD50: 908 mg/kg Species: Rat
Acute inhalation toxicity	: LC50: 47.7 mg/l Exposure time: 4 h Species: Rat
Acute dermal toxicity	: LD50: 20 g/kg Species: Rabbit
Skin irritation	: Species: Rabbit Result: Mild skin irritation Exposure time: 24 h

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- Eye irritation : Species: Rabbit  
Result: Moderate eye irritation  
Exposure time: 24 h
- Repeated dose toxicity : Species: Rat  
Application Route: Inhalation  
Note: (50 ppm; 7 hours/day, 5 days/week for 6 months) Causes damage to the following organs: liver, kidneys.
- : Species: Rat, male  
Application Route: Oral gavage bioassay  
Note: Carcinogenicity (70 g/kg for 78 weeks) Kidney tumors
- : Species: Mouse, both male and female  
Application Route: Oral gavage bioassay  
Note: Carcinogenicity (127 g/kg for 92 weeks) Liver tumors
- : Species: Rat, male  
Application Route: Drinking Water Study  
Note: Carcinogenicity (160 mg/kg/d for 104 days) Kidney tumors
- : Species: Rat  
Application Route: Inhalation  
Note: Embryotoxicity at maternally toxic concentrations.
- : Species: Rat  
Application Route: Inhalation  
Note: Teratogenicity at maternally toxic concentrations.
- Further information : Note: Contains material which may cause cancer based on animal data.

**SECTION 12. ECOLOGICAL INFORMATION**

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**Ecotoxicity effects**

Toxicity to fish	: static test LC50: 43.8 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout)
	: static test LC50: 100 mg/l Exposure time: 96 h Species: Lepomis macrochirus (Bluegill sunfish)
Toxicity to daphnia and other aquatic invertebrates	: static test LC50: 28.9 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Toxicity to algae	: LC0: 185 mg/l Species: Microcystis aeruginosa (blue alge)
	: LC0: 1,110 mg/l Species: Scenedesmus quadricauda (Green algae)
Toxicity to bacteria	: LC0: 125 mg/l Species: Pseudomonas putida

**Further information on ecology****SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods	: Dispose of contents/ container in accordance with local, state, and federal regulations.
Contaminated packaging	: Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

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#### SECTION 14. TRANSPORT INFORMATION

**DOT** UN/ID No. : UN 1888  
Proper shipping name : CHLOROFORM  
Class : 6.1  
Packing group : III  
Hazard Labels : 6.1

**IATA** UN/ID No. : UN 1888  
Description of the goods : CHLOROFORM  
Class : 6.1  
Packaging group : III  
Hazard Labels : 6.1  
Packing instruction (cargo aircraft) : 680  
Packing instruction (passenger aircraft) : 680  
Packing instruction (passenger aircraft) : Y680

**IMDG** UN/ID No. : UN 1888  
Description of the goods : CHLOROFORM  
Class : 6.1  
Packaging group : III  
Hazard Labels : 6.1  
EmS Number : F-A, S-A  
Marine pollutant : no

#### SECTION 15. REGULATORY INFORMATION

##### Inventories

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory

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Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL.

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

**National regulatory information**

US. EPA CERCLA Hazardous Substances (40 CFR 302) :  
: The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 10 lbs  
: Chloroform 67-66-3

**SARA 302 Components** : The following components are subject to reporting levels established by SARA Title III, Section 302:  
: Chloroform 67-66-3

**SARA 313 Components** : The following components are subject to reporting levels established by SARA Title III, Section 313:

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	: Chloroform	67-66-3
<b>SARA 311/312 Hazards</b>	: Acute Health Hazard Chronic Health Hazard	
<b>CERCLA Reportable Quantity</b>	: 10 lbs	
<b>California Prop. 65</b>	: WARNING! This product contains a chemical known to the State of California to cause cancer. Chloroform	67-66-3
	: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chloroform	67-66-3
<b>Massachusetts RTK</b>	: Chloroform	67-66-3
<b>New Jersey RTK</b>	: Chloroform	67-66-3
<b>Pennsylvania RTK</b>	: Chloroform	67-66-3
<b>WHMIS Classification</b>	: D1B: Toxic Material Causing Immediate and Serious Toxic Effects D2A: Very Toxic Material Causing Other Toxic Effects D2B: Toxic Material Causing Other Toxic Effects This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.	

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**SECTION 16. OTHER INFORMATION**

	<b>HMIS III</b>	<b>NFPA</b>
Health hazard	: 2*	2
Flammability	: 0	0
Physical Hazard	: 0	
Instability	:	0

\* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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