

**Chloroform****AH049-4**

Version 1.1

Revision Date 08/10/2018

Print Date 08/10/2018

**SECTION 1. IDENTIFICATION**

Product name : Chloroform

Number : 000000022830

Product Use Description : Solvent

Manufacturer or supplier's details : Manufactured by:  
Honeywell International Inc.  
1953 South Harvey Street  
Muskegon, MI 49442  
USA

Distributed by:  
VWR International  
2360 Argentia Road  
Mississauga, Ontario L5N 5Z7  
CANADA

For more information call : 1-800-932-5000  
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**  
: **Transportation (CHEMTREC): 1-800-424-9300 or**  
: **+1-703-527-3887**  
:  
: (24 hours/day, 7 days/week)

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

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Form : liquid, clear  
Color : colourless  
Odor : sweet

**Classification of the substance or mixture**

Classification of the substance or mixture : Acute toxicity, Category 4, Oral  
Acute toxicity, Category 4, Inhalation  
Skin irritation, Category 2  
Eye irritation, Category 2A  
Carcinogenicity, Category 2  
Reproductive toxicity, Category 2  
Specific target organ toxicity - single exposure, Category 3, Central nervous system  
Specific target organ toxicity - repeated exposure, Category 1, Liver, Kidney

**GHS Label elements, including precautionary statements**

Symbol(s) : 

Signal word : Danger

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

Precautionary statements : **Prevention:**

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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.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

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

IF ON SKIN: Wash with plenty of soap and water.

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

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

IF exposed or concerned: Get medical advice/ attention.

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

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity**

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

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

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

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

Formula : CHCl<sub>3</sub>  
Chemical nature : Substance

Chemical name	CAS-No.	Concentration
Chloroform	67-66-3	99.99 %
2-Methylbut-2-ene (Amylene)	513-35-9	<0.01 %

**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**

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Indication of immediate medical attention and special treatment needed, if necessary : 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  
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, protective equipment and emergency procedures : 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.

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Remove all sources of ignition.  
Do not swallow.  
Do not breathe vapours or spray mist.  
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 and materials for containment and 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.

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

Precautions for safe handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Do not breathe vapours or spray mist.  
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**

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Conditions for safe storage, including any incompatibilities : 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.

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.

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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.  
 Do not breathe vapours or spray mist.  
 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 parameters	Update	Basis
Chloroform	67-66-3	TWA : Time weighted average	49 mg/m <sup>3</sup> (10 ppm)	10 2006	CAD AB OEL:Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)



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Chloroform	67-66-3	TWA : Time weighted average	(2 ppm)	07 2007	CAD BC OEL:Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)
Chloroform	67-66-3	TWA : Time weighted average	(10 ppm)	03 2011	CAD MB OEL:Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)
Chloroform	67-66-3	TWA : Time weighted average	(10 ppm)	11 2010	CAD ON OEL:Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)
Chloroform	67-66-3	:	Recirculation prohibited	09 2017	OEL (QUE):Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

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Chloroform	67-66-3	TWA : Time weighted average	24.4 mg/m3 (5 ppm) Exposure must be minimized.	09 2017	OEL (QUE):Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)
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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Color	: colourless
Odor	: sweet
Odor threshold	: Note: no data available
pH	: Note: Not applicable
Melting point/range	: -64 °C
Boiling point/boiling range	: 62 °C
Flash point	: Note: does not flash
Evaporation rate	: 0.6 Method: Compared to Ether (anhydrous).
Lower explosion limit	: Note: Not applicable

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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
Partition coefficient: n-octanol/water	: Note: no data available
Ignition temperature	: > 1,000 °C
Decomposition temperature	: Note: no data available
Viscosity, dynamic	: Note: no data available
Viscosity, kinematic	: Note: no data available
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	: 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	: Acute toxicity estimate: 11 mg/l , vapour Exposure time: 4 h Method: Calculation method
Acute dermal toxicity	: LD50: 20 g/kg Species: Rabbit
Skin irritation	: Species: Rabbit Result: Irritating to skin.

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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, 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.

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**SECTION 12. ECOLOGICAL INFORMATION****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	: Observe all Federal, State, and Local Environmental regulations.
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**SECTION 14. TRANSPORT INFORMATION**

<b>TDG</b>	UN/ID No.	: UN 1888
	Proper shipping name	: CHLOROFORM
	Class	: 6.1
	Packing group	: III
	Hazard Labels	: 6.1
<b>IATA</b>	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
<b>IMDG</b>	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 : On TSCA Inventory  
Control Act

Australia. Industrial : On the inventory, or in compliance with the inventory

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**Chemical (Notification and Assessment) Act**

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. Existing Chemicals Inventory (KECI) : 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

**WHMIS Components** : Chloroform 67-66-3

**NPRI**



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**Components** : Chloroform 67-66-3**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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