

Chloroform (With Ethanol) (048)

Version 1

Revision Date 04/01/2008

Print Date 04/11/2008

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Chloroform (With Ethanol)
MSDS Number : 000000011341
Product Use Description : Solvent

Company : Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442

For more information call : 1-800-368-0050
(Monday-Friday, 9:00am-5:00pm)

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

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : ether-like

Hazard Summary : May be harmful if swallowed. May be harmful if inhaled. Irritating to respiratory system. The product may be absorbed through the skin. Causes headache, drowsiness or other effects to the central nervous system. May irritate eyes. May cause irritation of the gastrointestinal tract. May irritate skin. Repeated exposure may cause skin dryness or cracking. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing. Possible risk of harm to the unborn child. Avoid exposure to pregnant women especially. Contains material which may cause cancer based on animal data. Use of alcoholic beverages may enhance toxic effects.

Potential Health Effects

Skin : May irritate skin.
The product may be absorbed through the skin. Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering. May cause systemic poisoning with symptoms paralleling those of inhalation.

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	May cause systemic poisoning with symptoms paralleling those of ingestion.
Eyes	: May irritate eyes. Signs/symptoms can include redness, swelling, pain, and tearing.
Ingestion	: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause systemic poisoning with symptoms paralleling those of inhalation. Repeated or prolonged exposure to the substance can produce kidney damage. Repeated or prolonged exposure to the substance can produce liver damage. Use of alcoholic beverages may enhance toxic effects.
Inhalation	: May be harmful if inhaled. Irritating to respiratory system. Causes headache, drowsiness or other effects to the central nervous system. May cause cardiac arrhythmia. Vapours may cause drowsiness and dizziness. High concentration of vapours may induce unconsciousness. Repeated or prolonged exposure to the substance can produce kidney damage. Repeated or prolonged exposure to the substance can produce liver damage.
Chronic Exposure	: Repeated and prolonged exposure to solvents may cause brain and nervous system damage. May cause cardiac arrhythmia. Repeated or prolonged exposure to the substance can produce kidney damage. Repeated or prolonged exposure to the substance can produce liver damage. Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering. Possible risk of harm to the unborn child. Potential embryo-foetal toxicity and teratogenicity. Contains material which may cause cancer based on animal data. Use of alcoholic beverages may enhance toxic effects.
Aggravated Medical Condition	: Eye disorders Skin disorders Kidney disorders Liver disorders Respiratory disorders Neurological disorders

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Heart disease
Do not use if pregnant.

Target Organs : Liver
Kidney
Heart
Eyes
Skin
Central nervous system

Carcinogenicity

NTP:	Chloroform	67-66-3
IARC:	Chloroform	67-66-3
ACGIH:	Chloroform	67-66-3

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Chloroform	67-66-3	98.99
Ethanol	64-17-5	1.00
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 if irritation develops or persists.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.

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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Treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : does not flash
- Ignition temperature : >1,000 °C (1,832 °F)
- Lower explosion limit : not applicable
- Upper explosion limit : not applicable
- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)
Foam
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire fighting : The product is not flammable.
Cool closed containers exposed to fire with water spray.
Do not allow run-off from fire fighting to enter drains or water courses.
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 (Cl₂)
Carbon monoxide
Carbon dioxide (CO₂)
- Special protective equipment for fire-fighters : In the event of fire and/or explosion do not breathe fumes.
Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Wear personal protective equipment. Unprotected persons must be kept away.
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.

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- Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Discharge into the environment must be avoided.
Do not let product enter drains.
Do not flush into surface water or sanitary sewer system.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- 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.

SECTION 7. HANDLING AND STORAGE**Handling**

- Handling : Handle with care.
Wear personal protective equipment.
Keep away from fire, sparks and heated surfaces.
Keep container tightly closed.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Do not swallow.
Avoid breathing vapors, 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 : Storage rooms must be properly ventilated.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
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.
Store away from incompatible substances.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Do not swallow.
Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.
- Engineering measures : Use with local exhaust ventilation.
Prevent vapor 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 and boots
Solvent-resistant gloves
If splashes are likely to occur, wear:
Protective suit
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
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 : Handle in accordance with good industrial hygiene and safety practice.
When using, do not eat, drink or smoke.
Wash hands before breaks and immediately after handling the product.
Remove and wash contaminated clothing before re-use.
Keep working clothes separately.
Do not swallow.
Avoid breathing vapors, 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/1documents/Committees/ERP-erpglevels.pdf>.

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Exposure Guidelines

Chloroform	67-66-3	ACGIH	TWA		10 ppm
		NIOSH	STEL	2 ppm	9.78 mg/m ³
		OSHA Z1	Ceiling	50 ppm	240 mg/m ³
		OSHA Z1A	TWA	2 ppm	9.78 mg/m ³
		US CA OEL	TWA PEL	2 ppm	9.78 mg/m ³
Ethanol	64-17-5	ACGIH	TWA		1,000 ppm
		NIOSH	REL	1,000 ppm	1,900 mg/m ³
		OSHA Z1	PEL	1,000 ppm	1,900 mg/m ³
		OSHA Z1A	TWA	1,000 ppm	1,900 mg/m ³
		US CA OEL	TWA PEL	1,000 ppm	1,900 mg/m ³

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid, clear
Color	:	colourless
Odor	:	ether-like
Molecular Weight	:	119.37 g/mol
pH	:	not applicable
Melting point/range	:	-64 °C (-83 °F)
Boiling point/boiling range	:	62 °C (144 °F)
Vapor pressure	:	212 hPa at 20 °C (68 °F)
Relative vapour density	:	4.12 at 20 °C (68 °F)
Density	:	1.49 g/cm ³ at 20 °C (68 °F)
Water solubility	:	8 g/l at 20 °C (68 °F)

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SECTION 10. STABILITY AND REACTIVITY

- Conditions to avoid : Heat, flames and sparks.
Protect from heat/overheating.
Keep away from direct sunlight.
- 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 (Cl₂)
Carbon monoxide
Carbon dioxide (CO₂)
- Hazardous reactions : Hazardous polymerisation does not occur.
Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

- Acute oral toxicity : LD50 rat
Dose: 908 mg/kg
- Acute dermal toxicity : LD50 rabbit
Dose: 20 g/kg
- Acute inhalation toxicity : LC50 rat
Dose: 47.7 mg/l
Exposure time: 4 h
- Skin irritation : rabbit
Mild skin irritation
- Eye irritation : rabbit
Moderate eye irritation
- Repeated dose toxicity : Inhalation rat (50 ppm; 7 hours/day, 5 days/week for 6 months),
Causes damage to the following organs: liver, kidneys.
- Repeated dose toxicity : Oral gavage bioassay male rat (70 g/kg for 78 weeks), Kidney tumors

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Repeated dose toxicity	: Oral gavage bioassay both male and female mouse (127 g/kg for 92 weeks), Liver tumors
Repeated dose toxicity	: Drinking Water Study male rat (160 mg/kg/d for 104 days), Kidney tumors
Repeated dose toxicity	: Inhalation rat Embryotoxicity, (30 ppm; 7 hours/day during gestation days 6-15)
Repeated dose toxicity	: Inhalation rat Teratogenicity, (100 ppm; 7 hours/day during gestation days 6-15)
Additional advice	: Contains material which may cause cancer based on animal data.

SECTION 12. ECOLOGICAL INFORMATION

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

SECTION 13. DISPOSAL CONSIDERATIONS

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Waste Information: Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

UN-Number	:	1888
Proper shipping name	:	Chloroform
Class	:	6.1
Packing group	:	III
Hazard Label	:	6.1

IATA

UN Number	:	1888
Description of the goods	:	Chloroform
Class	:	6.1
Packaging group	:	III
Hazard Label	:	6.1
Packing instruction (cargo aircraft)	:	612
Packing instruction (passenger aircraft)	:	610
Packing instruction (passenger aircraft)	:	Y610

IMDG

Substance No.	:	UN 1888
Description of the goods	:	Chloroform
Class	:	6.1
Packaging group	:	III
Hazard Label	:	6.1
EmS Number	:	F-A
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION
Inventories

EU. EINECS : On the inventory, or in compliance with the inventory

US. Toxic Substances Control Act : On TSCA Inventory

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

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133) : All components of this product are on the Canadian DSL list.

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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

SARA 302 Components : Chloroform 67-66-3

SARA 313 Components : Chloroform 67-66-3

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

California Prop. 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
Chloroform 67-66-3

Massachusetts RTK : Chloroform 67-66-3
: Ethanol 64-17-5

New Jersey RTK : Chloroform 67-66-3
: Ethanol 64-17-5

Pennsylvania RTK : Chloroform 67-66-3
: Ethanol 64-17-5

WHMIS Classification : D1B
D2A
D2B

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SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health Hazard	: 2*	2
Flammability	: 0	0
Physical Hazard	: 0	
Instability	:	0

Further information

* - Chronic health hazard