

90/10/1 Dichloromethane - Methanol - Ammonium Hydroxide Solution (v/v/v) (471)

Version 1

Revision Date 02/19/2008

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 90/10/1 Dichloromethane - Methanol - Ammonium Hydroxide Solution (v/v/v)
MSDS Number : 000000012510
Product Use Description : Laboratory Use

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 : mild sweet

Hazard Summary : This product is not flammable at ambient temperatures and atmospheric pressure. May be fatal if swallowed. May be fatal if inhaled. May be harmful if absorbed through skin. Irritating to eyes, respiratory system and skin. Causes headache, drowsiness or other effects to the central nervous system. May cause blindness. The product may be absorbed through the skin. Repeated exposure may cause skin dryness or cracking. Do not swallow. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Potential cancer hazard. Confirmed animal carcinogen with unknown relevance to humans. This product may cause adverse reproductive effects. Possible risk of harm to the unborn child. Avoid exposure to pregnant women especially.

Potential Health Effects

Skin : Irritating to skin.
May be harmful if absorbed through skin.

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- May cause systemic poisoning with symptoms paralleling those of inhalation.
May cause burns or external ulcers.
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
- Eyes** : Irritating to eyes.
Causes itching, burning, redness and tearing.
May cause blindness.
May cause irreversible eye damage.
May cause corneal injury.
- Ingestion** : May be fatal if swallowed.
May cause irritation of the gastrointestinal tract.
May cause systemic poisoning with symptoms paralleling those of inhalation.
May cause blindness if swallowed.
Repeated or prolonged exposure to the substance can produce kidney damage.
Repeated or prolonged exposure to the substance can produce liver damage.
- Inhalation** : May be fatal if inhaled.
Causes respiratory tract irritation.
Causes headache, drowsiness or other effects to the central nervous system.
Vapours may cause drowsiness and dizziness.
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
High concentration of vapours may induce unconsciousness.
May cause blindness.
Repeated or prolonged exposure to the substance can produce liver damage.
Repeated or prolonged exposure to the substance can produce kidney damage.
Exposure to high concentrations can lead to increased carboxyhemoglobin levels in the blood. Carboxyhemoglobin can lead to central nervous system depression, respiratory failure and death by decreasing the oxygen carrying capacity of blood.
- Chronic Exposure** : Causes damage to the kidneys/liver/eyes/brain/respiratory system/central nervous system through prolonged or repeated exposure.
Chronic exposure may cause headache, confusion, tremors, memory loss, slurred speech and anorexia.
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
Exposure to high concentrations can lead to increased carboxyhemoglobin levels in the blood. Carboxyhemoglobin

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can lead to central nervous system depression, respiratory failure and death by decreasing the oxygen carrying capacity of blood.

Potential cancer hazard.

Confirmed animal carcinogen with unknown relevance to humans.

This product may cause adverse reproductive effects.

Possible risk of harm to the unborn child.

Aggravated Medical Condition : Respiratory disorders
 Eye disorders
 Blood disorders
 Kidney disorders
 Liver disorders
 Neurological disorders
 Skin disorders
 Heart disease
 Do not use if pregnant.

Target Organs : Eyes
 Skin
 Cardiovascular system
 Respiratory system
 Central nervous system
 Heart
 Liver
 Kidney
 Gastrointestinal tract

Carcinogenicity

NTP:	Dichloromethane	75-09-2
IARC:	Dichloromethane	75-09-2
OSHA:	Dichloromethane	75-09-2
ACGIH:	Dichloromethane	75-09-2

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Dichloromethane	75-09-2	<=93.80
Methanol	67-56-1	<=6.20
Ammonia, aqueous solution	1336-21-6	0.07

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SECTION 4. FIRST AID MEASURES

- Inhalation : Call a physician immediately. 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.
- 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 : Call a physician immediately. Do not induce vomiting without medical advice. Immediate medical attention is required. Never give anything by mouth to an unconscious person.

Notes to physician

- Treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : closed cup
None
- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)
Alcohol-resistant foam
- Specific hazards during fire fighting : This product is not flammable at ambient temperatures and atmospheric pressure.
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)

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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. No unprotected exposed skin areas.

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. 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. 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. Use only in well-ventilated areas. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not swallow. Do not breathe vapours or spray mist.

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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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Do not swallow.
Do not breathe vapours or spray mist.
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

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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. Do not breathe vapours or spray mist. 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>.

Exposure Guidelines

Dichloromethane	75-09-2	ACGIH	TWA	50 ppm
		OSHA	TWA	25 ppm
		OSHA	STEL	125 ppm
		OSHA	OSHA_ACT	12.5 ppm

Skin designation:
 Can be absorbed through the skin.

US CA OEL	TWA PEL	25 ppm	87 mg/m3
US CA OEL	STEL	125 ppm	435 mg/m3
US CA OEL	TWA A LV		12.5 ppm
TX ESL	ST ESL	75 ppm	260 ug/m3
TX ESL	AN ESL	7.5 ppm	26 ug/m3

Methanol	67-56-1	ACGIH	TWA	200 ppm
		ACGIH	STEL	250 ppm

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Skin designation:
Can be absorbed through the skin.

NIOSH	REL	200 ppm	260 mg/m ³
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NIOSH	STEL	250 ppm	325 mg/m ³
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Skin designation:
Can be absorbed through the skin.

US CA OEL	TWA PEL	200 ppm	260 mg/m ³
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US CA OEL	Ceiling		1,000 ppm
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US CA OEL	STEL	250 ppm	325 mg/m ³
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Skin designation:
Can be absorbed through the skin.

OSHA Z1	PEL	200 ppm	260 mg/m ³
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OSHA Z1A	TWA	200 ppm	260 mg/m ³
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OSHA Z1A	STEL	250 ppm	325 mg/m ³
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Skin designation (Final Rule Limit applies):
Can be absorbed through the skin.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid, clear

Color : colourless

Odor : mild sweet

pH : 11.0

Boiling point/boiling range : 40.56 °C (105.01 °F)

Density : 1.2665 g/cm³
at 20 °C (68 °F)

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Heat, flames and sparks.

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	Protect from extreme heat and cold. Keep away from direct sunlight.
Materials to avoid	: Oxidizing agents Strong acids and strong bases Metals Aluminium Lithium Magnesium Sodium May attack many plastics, rubbers and coatings.
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Gaseous hydrogen chloride (HCl). Phosgene Chlorine (Cl ₂) Carbon monoxide Carbon dioxide (CO ₂)
Hazardous reactions	: Hazardous polymerisation does not occur. Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity (Component)	Component: 75-09-2 Dichloromethane LD50 rat Dose: 1,600 mg/kg
Acute oral toxicity (Component)	Component: 67-56-1 Methanol LD50 rat Dose: 5,628 mg/kg
Acute oral toxicity (Component)	Component: 1336-21-6 Ammonia, aqueous solution LD50 rat Dose: 350 mg/kg
Acute dermal toxicity (Component)	Component: 75-09-2 Dichloromethane LD50 rat Dose: > 2,000 mg/kg
Acute dermal toxicity (Component)	Component: 67-56-1 Methanol LD50 rabbit Dose: 15,800 mg/kg
Acute inhalation toxicity (Component)	Component: 75-09-2 Dichloromethane LC50 rat Dose: 88 mg/l

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	Exposure time: 30 min
Acute inhalation toxicity (Component)	Component: 67-56-1 Methanol LC50 rat Dose: 83.8 mg/l Exposure time: 4 h
Acute inhalation toxicity (Component)	Component: 1336-21-6 Ammonia, aqueous solution LC50 rat Dose: 5.1 mg/l Exposure time: 1 h
Skin irritation (Component)	Component: 67-56-1 Methanol rabbit irritating Exposure time: 24 h
Eye irritation (Component)	Component: 67-56-1 Methanol rabbit eye irritating
Additional advice	: This product may cause adverse reproductive effects. Confirmed animal carcinogen with unknown relevance to humans.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish (Component)	: Component: 75-09-2 Dichloromethane flow-through test LC50 Species: Fathead minnow Dose: 193 mg/l Exposure time: 96 h
Toxicity to fish (Component)	: Component: 67-56-1 Methanol LC50 Species: Fathead minnow Dose: 29,400 mg/l Exposure time: 96 h
Toxicity to fish (Component)	: Component: 1336-21-6 Ammonia, aqueous solution LC50 Species: Oncorhynchus mykiss (rainbow trout) Dose: > 0.1 mg/l Exposure time: 96 h
Toxicity to fish (Component)	: Component: 1336-21-6 Ammonia, aqueous solution LC50

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	Species: Bluegill sunfish Dose: > 0.2 mg/l Exposure time: 96 h
Toxicity to fish (Component)	: Component: 1336-21-6 Ammonia, aqueous solution LC50 Species: Fathead minnow Dose: > 0.7 mg/l Exposure time: 96 h
Toxicity to fish (Component)	: Component: 1336-21-6 Ammonia, aqueous solution LC50 Species: Cyprinus carpio (Carp) Dose: 1.1 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates. (Component)	: Component: 75-09-2 Dichloromethane static test LC50 Species: Daphnia magna (Water flea) Dose: 140 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates. (Component)	: Component: 67-56-1 Methanol LC50 Species: Daphnia Dose: 10 g/l Exposure time: 24 h
Toxicity to daphnia and other aquatic invertebrates. (Component)	: Component: 1336-21-6 Ammonia, aqueous solution LC50 Species: Daphnia Dose: 25.4 mg/l Exposure time: 48 h
Toxicity to bacteria (Component)	: Component: 75-09-2 Dichloromethane EC50 Species: Photobacterium phosphoreum Dose: 1,000 mg/l Exposure time: 15 min
Additional ecological information	: There is no data available for this product.

SECTION 13. DISPOSAL CONSIDERATIONS

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

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SECTION 14. TRANSPORT INFORMATION

DOT	UN-Number	: 2810
	Proper shipping name	: TOXIC LIQUID, ORGANIC, N.O.S. (Dichloromethane, Methanol)
	Class	: 6.1
	Packing group	: III
	Hazard Label	: 6.1
IATA	UN Number	: 2810
	Description of the goods	: TOXIC LIQUID, ORGANIC, N.O.S. (Dichloromethane, Methanol)
	Class	: 6.1
	Packaging group	: III
	Hazard Label	: 6.1
	Packing instruction (cargo aircraft)	: 618
	Packing instruction (passenger aircraft)	: 611
	Packing instruction (passenger aircraft)	: Y611
IMDG	Substance No.	: UN 2810
	Description of the goods	: TOXIC LIQUID, ORGANIC, N.O.S. (Dichloromethane, Methanol)
	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 or in compliance with the inventory
US. Toxic Substances Control Act	: On TSCA Inventory
Australia. Industrial Chemical (Notification and Assessment) Act	: On or in compliance with the inventory
Canada. Canadian	: All components of this product are on the Canadian DSL list.

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Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)

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

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

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

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

National regulatory information

SARA 313 Components : Dichloromethane 75-09-2
: Methanol 67-56-1

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

CERCLA Reportable Quantity : 1066 lbs

California Prop. 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
Dichloromethane 75-09-2

Massachusetts RTK : Dichloromethane 75-09-2
: Methanol 67-56-1

New Jersey RTK : Dichloromethane 75-09-2
: Methanol 67-56-1

Pennsylvania RTK : Dichloromethane 75-09-2
: Methanol 67-56-1

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WHMIS Classification : D1B
D2A
D2B

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health Hazard	: 2*	2
Flammability	: 1	1
Physical Hazard	: 0	
Instability	:	0

Further information

* - Chronic health hazard