

**0.1% Ammonium Hydroxide in Water (v/v) (472)**

Version 1

Revision Date 05/30/2008

Print Date 05/30/2008

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : 0.1% Ammonium Hydroxide in Water (v/v) (472)  
MSDS Number : 000000012982  
Product Use Description : Laboratory chemicals

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 : ammoniacal

Hazard Summary : May be harmful if inhaled. May be harmful if swallowed. May irritate eyes. May cause respiratory tract irritation. May cause irritation of the gastrointestinal tract. May irritate skin. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

**Potential Health Effects**

Skin : May irritate skin.

Eyes : May irritate eyes.

Ingestion : May be harmful if swallowed.  
May cause irritation of the gastrointestinal tract.

Inhalation : May be harmful if inhaled.  
May cause

Chronic Exposure : None known.

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**Carcinogenicity**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

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

Component	CAS-No.	Weight %
Water	7732-18-5	>99.00
Ammonium hydroxide	1336-21-6	<1.00

**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**

- Treatment : Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES**

- Flash point : not applicable
- Lower explosion limit : not applicable
- Upper explosion limit : not applicable
- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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- Water spray  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Specific hazards during fire fighting : The product is not flammable.  
In case of fire hazardous decomposition products may be produced such as:  
Ammonia  
nitrogen oxides (NO<sub>x</sub>)
- 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.  
Ensure adequate ventilation.  
Do not swallow.  
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 flush into surface water or sanitary sewer system.  
Prevent product from entering drains.
- Methods for cleaning up : Ventilate the area.  
Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).

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

- Handling : Handle with care.  
Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Do not swallow.

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Avoid breathing vapors, mist or gas.  
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

**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.  
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.  
Avoid contact with skin, eyes and clothing.  
Avoid breathing vapors, mist or gas.

Engineering measures : Use with local exhaust ventilation.  
Prevent vapor buildup by providing adequate ventilation during and after use.

Eye protection : Wear as appropriate:  
Safety glasses with side-shields  
Goggles  
If splashes are likely to occur, wear:  
Goggles or face shield, giving complete protection to eyes

Hand protection : Protective gloves  
Gloves must be inspected prior to use.  
Replace when worn.

Skin and body protection : Wear as appropriate:  
Rubber or plastic apron  
Rubber or plastic boots  
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.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.  
Use NIOSH approved respiratory protection.

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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 at the end of workday.  
 Keep working clothes separately.  
 Remove and wash contaminated clothing before re-use.  
 Do not swallow.  
 Avoid breathing vapors, mist or gas.  
 Avoid contact with skin, eyes and clothing.

**Exposure Guidelines**

Ammonia	7664-41-7	ACGIH	TWA		25 ppm
		ACGIH	STEL		35 ppm
		NIOSH	REL	25 ppm	18 mg/m3
		NIOSH	STEL	35 ppm	27 mg/m3
		US CA OEL	TWA PEL	25 ppm	18 mg/m3
		US CA OEL	STEL	35 ppm	27 mg/m3
		OSHA Z1	PEL	50 ppm	35 mg/m3
		OSHA Z1A	STEL	35 ppm	27 mg/m3

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form : liquid, clear

Color : colourless

Odor : ammoniacal

pH : 10.9

Melting point/range : not determined

Boiling point/boiling range : not determined

Vapor pressure : not determined

Relative vapour density : not determined

Density : 0.9979 g/cm<sup>3</sup>  
at 20 °C (68 °F)

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Water solubility : completely soluble

**SECTION 10. STABILITY AND REACTIVITY**Conditions to avoid : Heat, flames and sparks.  
Keep away from direct sunlight.Materials to avoid : Halogens  
Nitromethane  
Acids  
Bases  
Metals  
Metal halides  
Dimethyl sulfate  
Silver nitrate  
Propylene oxideHazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:  
Ammonia  
nitrogen oxides (NO<sub>x</sub>)Hazardous reactions : Hazardous polymerisation does not occur.  
Stable under normal conditions.**SECTION 11. TOXICOLOGICAL INFORMATION**Acute oral toxicity (Component) : Component: 1336-21-6 Ammonium hydroxide  
LD50 rat  
Dose: 350 mg/kgAcute inhalation toxicity (Component) : Component: 1336-21-6 Ammonium hydroxide  
LC50 rat  
Dose: 5.1 mg/l  
Exposure time: 1 h**SECTION 12. ECOLOGICAL INFORMATION**Toxicity to fish (Component) : Component: 1336-21-6 Ammonium hydroxide  
LC50  
Species: Oncorhynchus mykiss (rainbow trout)  
Dose: > 0.1 mg/l  
Exposure time: 96 h

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Toxicity to fish (Component)	:	Component: 1336-21-6 Ammonium hydroxide LC50 Species: Bluegill sunfish Dose: > 0.2 mg/l Exposure time: 96 h
Toxicity to fish (Component)	:	Component: 1336-21-6 Ammonium hydroxide LC50 Species: Fathead minnow Dose: > 0.7 mg/l Exposure time: 96 h
Toxicity to fish (Component)	:	Component: 1336-21-6 Ammonium hydroxide LC50 Species: Cyprinus carpio (Carp) Dose: 1.1 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates. (Component)	:	Component: 1336-21-6 Ammonium hydroxide LC50 Species: Daphnia Dose: 25.4 mg/l Exposure time: 48 h

**SECTION 13. DISPOSAL CONSIDERATIONS**

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

**SECTION 14. TRANSPORT INFORMATION**

<b>DOT</b>	Not dangerous goods
<b>TDG</b>	Not dangerous goods
<b>IATA</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods

**SECTION 15. REGULATORY INFORMATION****Inventories**

EU. EINECS	:	On the inventory, or in compliance with the inventory
US. Toxic Substances Control Act	:	On TSCA Inventory

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- 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.
- 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

**National regulatory information**

- SARA 313 Components** : Ammonium hydroxide 1336-21-6
- SARA 311/312 Hazards** : Acute Health Hazard
- CERCLA Reportable Quantity** : 100000 lbs
- California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.
- Massachusetts RTK** : Ammonium hydroxide 1336-21-6
- New Jersey RTK** : Water 7732-18-5  
: Ammonium hydroxide 1336-21-6
- Pennsylvania RTK** : Water 7732-18-5  
: Ammonium hydroxide 1336-21-6

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**WHMIS Classification** : Not Rated

**SECTION 16. OTHER INFORMATION**

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