

0.1% Ammonium Hydroxide in 95/5 Acetonitrile-Water (v/v) (829)

Version 1

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 0.1% Ammonium Hydroxide in 95/5 Acetonitrile-Water (v/v) (829)
MSDS Number : 000000013626
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 +1-703-527-3887**
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : sweet ether-like

Hazard Summary : Flammable. In use, may form flammable/explosive vapour-air mixture. May be harmful if inhaled. May be harmful if absorbed through skin. May be harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause irritation of the gastrointestinal tract. Can cause fatal cyanide poisoning. May cause convulsions. Symptoms may be delayed. Can be absorbed through skin. Repeated exposure may cause skin dryness or cracking.

Potential Health Effects

Skin : Irritating to skin.
Can be absorbed through skin.
May be harmful if absorbed through skin.
Can cause fatal cyanide poisoning.
Symptoms may be delayed.
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

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- Eyes** : Irritating to eyes.
Causes itching, burning, redness and tearing.
- Ingestion** : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
May cause systemic poisoning with symptoms paralleling those of inhalation.
Can cause fatal cyanide poisoning.
Symptoms may be delayed.
- Inhalation** : Causes respiratory tract irritation.
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
Causes headache, drowsiness or other effects to the central nervous system.
Can cause fatal cyanide poisoning.
Symptoms may be delayed.
- Chronic Exposure** : Can cause fatal cyanide poisoning.
Causes damage to the kidneys/liver/eyes/brain/respiratory system/central nervous system through prolonged or repeated exposure.
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
- Aggravated Medical Condition** : People suffering from pre-existing thyroid conditions may experience adverse effects.
Neurological disorders
Heart disease
Respiratory disorders
Liver disorders
Kidney disorders
Skin disorders
Eye disorders
- Target Organs** : Respiratory system
Cardiovascular system
Central nervous system
Liver
Kidney

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

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Component	CAS-No.	Weight %
Acetonitrile	75-05-8	93.70
Water	7732-18-5	6.30
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.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- Ingestion : Call a physician. Immediate medical attention is required. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Notes to physician

- Treatment : Treat as cyanide poisoning. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : 6.1 °C (43.0 °F)
closed cup
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Suitable extinguishing media : Carbon dioxide (CO₂)
Dry chemical
Alcohol-resistant foam
Cool closed containers exposed to fire with water spray.
- Extinguishing media which shall not be used for safety reasons : Do not use a solid water stream as it may scatter and spread fire.

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- Specific hazards during fire fighting : Flammable.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Hydrogen cyanide (hydrocyanic acid)
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.

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.
Ensure adequate ventilation.
Remove all sources of ignition.
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.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Methods for cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
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 : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Do not smoke.
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 : Keep away from fire, sparks and heated surfaces.
 Take precautionary measures against static discharges.
 Ensure all equipment is electrically grounded before beginning transfer operations.
 Use explosion-proof equipment.
 Keep product and empty container away from heat and sources of ignition.
 No sparking tools should be used.
 No smoking.

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids. Protect from physical damage.
 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.
 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 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:

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- Solvent-resistant apron and boots
 Flame retardant antistatic protective clothing
 If splashes are likely to occur, wear:
 Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
 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 vapors, mist or gas.
 Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Acetonitrile	75-05-8	ACGIH	TWA		20 ppm
		Skin designation: Can be absorbed through the skin.			
		NIOSH	REL	20 ppm	34 mg/m3
		US CA OEL	TWA PEL	40 ppm	70 mg/m3
		US CA OEL	STEL	60 ppm	105 mg/m3
		Skin designation: Can be absorbed through the skin.			
		OSHA Z1	PEL	40 ppm	70 mg/m3
		OSHA Z1A	TWA	40 ppm	70 mg/m3
		OSHA Z1A	STEL	60 ppm	105 mg/m3
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

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US CA OEL	STEL	35 ppm	27 mg/m ³
OSHA Z1	PEL	50 ppm	35 mg/m ³
OSHA Z1A	STEL	35 ppm	27 mg/m ³

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: liquid, clear
Color	: colourless
Odor	: sweet ether-like
pH	: 9.4 (as aqueous solution)
Boiling point/boiling range	: 70 °C (158 °F)
Vapor pressure	: 97.325 hPa at 20 °C (68 °F) The physical data is that of the main component.
Density	: 0.7949 g/cm ³ at 20 °C (68 °F)
Density	: 0.7896 g/cm ³ at 25 °C (77 °F)
Water solubility	: completely soluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Materials to avoid	: Acids Bases Oxidizing agents Reducing agents Sulfites Perchlorates May attack many plastics, rubbers and coatings.
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Hydrogen cyanide (hydrocyanic acid) Carbon dioxide (CO ₂), carbon monoxide (CO), oxides of

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nitrogen (NO_x), dense black smoke.

Hazardous reactions : Hazardous polymerisation does not occur.
Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity (Component)	Component: 75-05-8 Acetonitrile LD50 rat Dose: 2,460 mg/kg
Acute oral toxicity (Component)	Component: 1336-21-6 Ammonium hydroxide LD50 rat Dose: 350 mg/kg
Acute dermal toxicity (Component)	Component: 75-05-8 Acetonitrile LD50 rabbit Dose: > 2,000 mg/kg
Acute inhalation toxicity (Component)	Component: 75-05-8 Acetonitrile LC50 rat Dose: 7551 ppm Exposure time: 8 h
Acute 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: 75-05-8 Acetonitrile flow-through test LC50 Species: Pimephales promelas (fathead minnow) Dose: 1,640 mg/l Exposure time: 96 h
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
Toxicity to fish (Component)	: Component: 1336-21-6 Ammonium hydroxide LC50 Species: Bluegill sunfish

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	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

DOT	UN-Number	: 1648
	Proper shipping name	: Acetonitrile solution
	Class	: 3
	Packing group	: II
	Hazard Label	: 3
IATA	UN Number	: 1648
	Description of the goods	: Acetonitrile solution
	Class	: 3
	Packaging group	: II
	Hazard Label	: 3
	Packing instruction (cargo aircraft)	: 307
	Packing instruction (passenger aircraft)	: 305
Packing instruction (passenger aircraft)	: Y305	
IMDG	Substance No.	: UN 1648
	Description of the goods	: Acetonitrile solution

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Class	: 3
Packaging group	: II
Hazard Label	: 3
EmS Number	: F-E
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.
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
Switzerland. Consolidated Inventory	: 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
TSCA 12B	: US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

Acetonitrile

75-05-8

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National regulatory information

SARA 313 Components	: Acetonitrile	75-05-8
	: Ammonium hydroxide	1336-21-6
SARA 311/312 Hazards	: Fire Hazard	
	: Acute Health Hazard	
	: Chronic Health Hazard	
CERCLA Reportable Quantity	: 5000 lbs	
California Prop. 65	: WARNING! This product contains a chemical known in the State of California to cause cancer.	
	: Acrylonitrile	107-13-1
Massachusetts RTK	: Acetonitrile	75-05-8
	: Ammonium hydroxide	1336-21-6
New Jersey RTK	: Acetonitrile	75-05-8
	: Ammonium hydroxide	1336-21-6
Pennsylvania RTK	: Acetonitrile	75-05-8
	: Ammonium hydroxide	1336-21-6
WHMIS Classification	: B2	
	: D1A	
	: D2B	

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health Hazard	: 2*	2
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

Further information

* - Chronic health hazard

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