

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : 50% Acetonitrile / 50% IPA w/0.1% TFA - (812)  
MSDS Number : 000000013345  
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 +1-703-527-3887**  
: (24 hours/day, 7 days/week)

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

Form : liquid, clear

Color : colourless

Odor : Product specific

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.

Eyes : Irritating to eyes.

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

- 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  
Eyes  
Skin

**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**

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Component	CAS-No.	Weight %
Propan-2-ol	67-63-0	50.00
Acetonitrile	75-05-8	49.90
Trifluoroacetic acid	76-05-1	0.10

**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 : 1.67 °C (35.01 °F)  
closed cup
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
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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Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

- 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 (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), 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.

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

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:

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Solvent-resistant apron  
 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**

Isopropanol	67-63-0	NIOSH	REL	400 ppm	980 mg/m <sup>3</sup>
		NIOSH	STEL	500 ppm	1,225 mg/m <sup>3</sup>
		OSHA Z1	PEL	400 ppm	980 mg/m <sup>3</sup>
		OSHA Z1A	TWA	400 ppm	980 mg/m <sup>3</sup>
		OSHA Z1A	STEL	500 ppm	1,225 mg/m <sup>3</sup>
		US CA OEL	TWA PEL	400 ppm	980 mg/m <sup>3</sup>
		US CA OEL	STEL	500 ppm	1,225 mg/m <sup>3</sup>
		ACGIH	TWA		200 ppm
Acetonitrile	75-05-8	ACGIH	STEL		400 ppm
		ACGIH	TWA		20 ppm
		ACGIH	TWA		20 ppm

Skin designation:  
 Can be absorbed through the skin.

NIOSH	REL	20 ppm	34 mg/m <sup>3</sup>
US CA OEL	TWA PEL	40 ppm	70 mg/m <sup>3</sup>
US CA OEL	STEL	60 ppm	105 mg/m <sup>3</sup>

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Skin designation:  
 Can be absorbed through the skin.

OSHA Z1	PEL	40 ppm	70 mg/m <sup>3</sup>
OSHA Z1A	TWA	40 ppm	70 mg/m <sup>3</sup>
OSHA Z1A	STEL	60 ppm	105 mg/m <sup>3</sup>

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: liquid, clear
Color	: colourless
Odor	: Product specific
pH	: 2.3 (as aqueous solution)
Melting point/range	: not determined
Boiling point/boiling range	: 67.78 °C (154.00 °F)
Vapor pressure	: not determined
Relative vapour density	: not determined, (Air = 1.0)
Density	: 0.7818 g/cm <sup>3</sup> at 20 °C (68 °F)
Density	: 0.7768 g/cm <sup>3</sup> 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. Keep away from metals.

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Acetaldehyde  
 Aluminum  
 Chlorine  
 Ethylene oxide  
 Isocyanates  
 Oxygen

- Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:  
 Hydrogen cyanide (hydrocyanic acid)  
 Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.
- Hazardous reactions : Hazardous polymerisation does not occur.  
 Stable under normal conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

- Acute oral toxicity : LD50 rat  
 Dose: 2,460 mg/kg  
 Test substance: Acetonitrile
- Acute oral toxicity : LD50 rat  
 Dose: 5,045 mg/kg  
 Test substance: Isopropanol
- Acute dermal toxicity : LD50 rabbit  
 Dose: > 2,000 mg/kg  
 Test substance: Acetonitrile
- Acute dermal toxicity : LD50 rabbit  
 Dose: 12,800 mg/kg  
 Test substance: Isopropanol
- Acute inhalation toxicity : LC50 rat  
 Dose: 7551 ppm  
 Exposure time: 8 h  
 Test substance: Acetonitrile
- Acute inhalation toxicity : LC50 rat  
 Dose: 16000 ppm  
 Exposure time: 8 h  
 Test substance: Isopropanol
- Skin irritation : rabbit  
 Mild skin irritation  
 Test substance: Isopropanol
- Eye irritation : rabbit

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Severe eye irritation  
Test substance: Isopropanol

**SECTION 12. ECOLOGICAL INFORMATION**

Biodegradability : Biochemical Oxygen Demand (BOD) Biochemical oxygen demand within 5 days  
Biodegradation: 58 %  
Test substance: Isopropanol

Toxicity to fish : flow-through test LC50  
Species: Pimephales promelas (fathead minnow)  
Dose: 1,640 mg/l  
Exposure time: 96 h  
Test substance: Acetonitrile

Toxicity to fish : LC50  
Species: goldfish  
Dose: > 5 g/l  
Exposure time: 24 h  
Test substance: Isopropanol

Toxicity to fish : LC50  
Species: Leuciscus idus (Golden orfe)  
Dose: 8,970 mg/l  
Exposure time: 48 h  
Test substance: Isopropanol

Toxicity to fish : LC50  
Species: Pimephales promelas (fathead minnow)  
Dose: 10,400 mg/l  
Exposure time: 96 h  
Test substance: Isopropanol

Toxicity to daphnia and other aquatic invertebrates. : EC50  
Species: Daphnia magna (Water flea)  
Dose: > 100 mg/l  
Exposure time: 48 h  
Test substance: Isopropanol

Toxicity to algae : LC50  
Species: Scenedesmus subspicatus  
Dose: > 2,000 mg/l  
Exposure time: 72 h  
Test substance: Isopropanol

Toxicity to bacteria : EC50

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

Species: Photobacterium phosphoreum  
 Dose: 35,390 mg/l  
 Exposure time: 5 min  
 Test substance: Isopropanol

**SECTION 13. DISPOSAL CONSIDERATIONS**

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

**SECTION 14. TRANSPORT INFORMATION**

**DOT** UN-Number : 1993  
 Proper shipping name : FLAMMABLE LIQUID, N.O.S.  
 (Acetonitrile  
 , Isopropanol  
 )  
 Class : 3  
 Packing group : II  
 Hazard Label : 3

**IATA** UN Number : 1993  
 Description of the goods : FLAMMABLE LIQUID, N.O.S.  
 (Acetonitrile, Isopropanol  
 )  
 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 1993  
 Description of the goods : FLAMMABLE LIQUID, N.O.S.  
 (ACETONITRILE  
 , ISOPROPANOL  
 )  
 Class : 3  
 Packaging group : II  
 Hazard Label : 3  
 EmS Number : F-E  
 Marine pollutant : no

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

Print Date 08/12/2008

**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

**National regulatory information**

**SARA 313 Components** : Isopropanol 67-63-0

**50% Acetonitrile / 50% IPA w/0.1% TFA - (812)**

Version 1

Revision Date 08/12/2008

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	: Acetonitrile	75-05-8
<b>SARA 311/312 Hazards</b>	: Fire Hazard Acute Health Hazard	
<b>CERCLA Reportable Quantity</b>	: 200 lbs	
<b>California Prop. 65</b>	: WARNING! This product contains a chemical known in the State of California to cause cancer. Acrylonitrile	107-13-1
<b>Massachusetts RTK</b>	: Isopropanol Acetonitrile	67-63-0 75-05-8
<b>New Jersey RTK</b>	: Isopropanol Acetonitrile	67-63-0 75-05-8
<b>Pennsylvania RTK</b>	: Isopropanol Acetonitrile	67-63-0 75-05-8
<b>WHMIS Classification</b>	: B2 D1A D2A	

**SECTION 16. OTHER INFORMATION**

	<b>HMIS III</b>	<b>NFPA</b>
Health Hazard	: 2*	2
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

**Further information**

\* - Chronic health hazard