

40% Acetonitrile / 40% IPA / 20% Acetone (v/v) (825)

Version 1

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 40% Acetonitrile / 40% IPA / 20% Acetone (v/v) (825)
MSDS Number : 000000013561
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 +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 : Extremely 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.

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- 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

Component	CAS-No.	Weight %
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Propan-2-ol	67-63-0	40.00
Acetonitrile	75-05-8	39.90
Acetone	67-64-1	20.10

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. 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 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 : -10 °C (14 °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.
- Specific hazards during fire fighting : Extremely flammable.
Vapours may form explosive mixtures with air.

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

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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:
Solvent-resistant apron
Flame retardant antistatic protective clothing

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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/m3
		NIOSH	STEL	500 ppm	1,225 mg/m3
		OSHA Z1	PEL	400 ppm	980 mg/m3
		OSHA Z1A	TWA	400 ppm	980 mg/m3
		OSHA Z1A	STEL	500 ppm	1,225 mg/m3
		US CA OEL	TWA PEL	400 ppm	980 mg/m3
		US CA OEL	STEL	500 ppm	1,225 mg/m3
		ACGIH	TWA		200 ppm
		ACGIH	STEL		400 ppm
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.

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		OSHA Z1	PEL	40 ppm	70 mg/m ³
		OSHA Z1A	TWA	40 ppm	70 mg/m ³
		OSHA Z1A	STEL	60 ppm	105 mg/m ³
Acetone	67-64-1	ACGIH	TWA		500 ppm
		ACGIH	STEL		750 ppm
		NIOSH	REL	250 ppm	590 mg/m ³
		OSHA Z1	PEL	1,000 ppm	2,400 mg/m ³
		OSHA Z1A	TWA	750 ppm	1,800 mg/m ³
		OSHA Z1A	STEL	1,000 ppm	2,400 mg/m ³
		US CA OEL	TWA PEL	500 ppm	1,200 mg/m ³
		US CA OEL	Ceiling		3,000 ppm
		US CA OEL	STEL	750 ppm	1,780 mg/m ³

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: liquid, clear
Color	: colourless
Odor	: sweet ether-like
pH	: not applicable
Freezing point	: not determined
Boiling point/boiling range	: 65 °C (149 °F)
Vapor pressure	: not determined
Relative vapour density	: not determined
Density	: 0.7829 g/cm ³ at 20 °C (68 °F)
Density	: 0.7778 g/cm ³ at 25 °C (77 °F)
Water solubility	: completely soluble

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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 (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), 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 oral toxicity : LD50 rat
Dose: 5,800 mg/kg
Test substance: Acetone
- 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 dermal toxicity : LD50 guinea pig
Dose: 7,426 mg/kg
Test substance: Acetone

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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
Acute inhalation toxicity	:	LC50 rat Dose: 32000 ppm Exposure time: 4 h Test substance: Acetone
Skin irritation	:	rabbit Mild skin irritation Test substance: Isopropanol
Skin irritation	:	rabbit Mild skin irritation Test substance: Acetone
Eye irritation	:	rabbit Severe eye irritation Test substance: Isopropanol
Eye irritation	:	rabbit irritating Test substance: Acetone
Repeated dose toxicity	:	rat 8-Week Inhalation Toxicity Study, 5 days/week for 8 weeks, Slightly reduced weight gain compared to controls NOEL: 19000 ppm Test substance: Acetone
Repeated dose toxicity	:	rat 90-Day Oral Toxicity Study, increased liver and kidney weights, NOEL 100mg/kg/d Test substance: Acetone
Repeated dose toxicity	:	rat 90-Day Oral Toxicity Study, increased liver and kidney weights, LOEL (Lowest observable effect level) 500mg/kg/d Test substance: Acetone
Genotoxicity in vitro	:	negative Mutagenicity (Salmonella typhimurium - reverse mutation assay) Test substance: Acetone

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Genotoxicity in vitro : negative
 Chromosome aberration test in vitro
 Test substance: Acetone

Genotoxicity in vitro : Mouse lymphoma cells
 negative
 Point mutation
 Test substance: Acetone

Genotoxicity in vitro : negative
 DNA cell-binding Assay
 Test substance: Acetone

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 :
 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 fish : LC50
 Species: Oncorhynchus mykiss (rainbow trout)

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		Dose: 5,540 mg/l Exposure time: 96 h Test substance: Acetone
Toxicity to fish	:	LC50 Species: Bluegill sunfish Dose: 8,300 mg/l Exposure time: 96 h Test substance: Acetone
Toxicity to daphnia and other aquatic invertebrates.	:	LC50 Species: Daphnia magna (Water flea) Dose: > 100 mg/l Exposure time: 48 h Test substance: Isopropanol
Toxicity to daphnia and other aquatic invertebrates.	:	LC50 Species: Daphnia magna (Water flea) Dose: 10 mg/l Exposure time: 24 h Test substance: Acetone
Toxicity to algae	:	LC50 Species: Scenedesmus subspicatus Dose: > 2,000 mg/l Exposure time: 72 h Test substance: Isopropanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 35,390 mg/l Exposure time: 5 min Test substance: Isopropanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 14,500 mg/l Exposure time: 15 min Test substance: Acetone

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.

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	(Acetonitrile , Isopropanol , Acetone)
Class	3
Packing group	II
Hazard Label	3

IATA	UN Number	: 1993
	Description of the goods	: FLAMMABLE LIQUID, N.O.S. (Acetonitrile, Isopropanol , Acetone)
	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 , ACETONE)
	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

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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
: Acetonitrile 75-05-8

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

CERCLA Reportable Quantity : 250 lbs

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California Prop. 65	:	WARNING! This product contains a chemical known in the State of California to cause cancer. Acrylonitrile	107-13-1
Massachusetts RTK	:	Isopropanol Acetone Acetonitrile	67-63-0 67-64-1 75-05-8
New Jersey RTK	:	Isopropanol Acetone Acetonitrile	67-63-0 67-64-1 75-05-8
Pennsylvania RTK	:	Isopropanol Acetone Acetonitrile	67-63-0 67-64-1 75-05-8
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