

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : 2-Propanol  
MSDS Number : 000000011223  
Product Use Description : Solvent

Company : Honeywell International Inc.  
1953 South Harvey Street  
Muskegon, MI 49442

For more information call :  
(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 : slight alcoholic

Hazard Summary : Flammable. In use, may form flammable/explosive vapour-air mixture. May be harmful if swallowed. Irritating to eyes. May cause skin irritation. May cause respiratory tract irritation. May cause irritation of the gastrointestinal tract. Can be absorbed through skin. Repeated exposure may cause skin dryness or cracking. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

**Potential Health Effects**

Skin : May irritate skin.  
May cause systemic poisoning with symptoms paralleling those of inhalation.  
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 irreversible eye damage.

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

- Ingestion** : May be harmful if swallowed.  
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.  
May cause systemic poisoning with symptoms paralleling those of inhalation.
- Inhalation** : May cause respiratory tract irritation.  
Vapours may cause drowsiness and dizziness.  
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
- Chronic Exposure** : Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.  
Repeated or prolonged exposure to the substance can produce liver damage.  
Repeated or prolonged exposure to the substance can produce kidney damage.
- Aggravated Medical Condition** : Cardiac irregularities  
Liver disorders  
Kidney disorders  
Neurological disorders  
Respiratory disorders  
Skin disorders
- Target Organs** : Eyes  
Central nervous system  
Gastrointestinal tract  
Heart  
Skin  
Respiratory system  
Kidney  
Liver

**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 % |
|-------------|---------|----------|
| Propan-2-ol | 67-63-0 | 100.00   |

**SECTION 4. FIRST AID MEASURES**

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

- 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.
- Ingestion : Do not induce vomiting without medical advice. Immediate medical attention is required. 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 : 12 °C (54 °F)  
closed cup
- Ignition temperature : 399 °C (750 °F)
- Lower explosion limit : 2.0 %(V)
- Upper explosion limit : 12.0 %(V)
- Suitable extinguishing media : Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Extinguishing media which shall not be used for safety reasons : Water may be ineffective.  
Do not use a solid water stream as it may scatter and spread fire.
- 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.  
Cool closed containers exposed to fire with water spray.  
Do not allow run-off from fire fighting to enter drains or water courses.  
In case of fire hazardous decomposition products may be

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

- produced such as:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</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.
- Additional advice : Standard procedure for chemical fires.

**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.  
Remove all sources of ignition.  
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.  
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 : 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.

## 2-Propanol (323)

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

Keep away from fire, sparks and heated surfaces.  
 Take precautionary measures against static discharges.  
 Ensure all equipment is electrically grounded before beginning transfer operations.  
 No sparking tools should be used.  
 Use explosion-proof equipment.  
 Do not smoke.  
 Do not swallow.  
 Avoid breathing vapors, mist or gas.  
 Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Vapours may form explosive mixtures with air.  
 Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits.  
 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.  
 Container hazardous when empty.  
 Keep product and empty container away from heat and sources of ignition.  
 Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.  
 Take measures to prevent the build up of electrostatic charge.  
 To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded.  
 Electrical equipment should be protected to the appropriate standard.  
 No sparking tools should be used.  
 Use explosion-proof equipment.  
 No smoking.

### Storage

Requirements for storage areas and containers : Storage rooms must be properly ventilated.  
 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 in area designed for storage of flammable liquids. Protect from physical damage.  
 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

## 2-Propanol (323)

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

- the workstation location.  
 Do not swallow.  
 Avoid breathing vapors, mist or gas.  
 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  
 Flame retardant antistatic protective clothing  
 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.
- 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.  
 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

|             |         |          |      |         |                         |
|-------------|---------|----------|------|---------|-------------------------|
| Propan-2-ol | 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>   |

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

|           |         |         |                         |
|-----------|---------|---------|-------------------------|
| 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                 |
| ACGIH     | STEL    |         | 400 ppm                 |

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                             |   |
|-----------------------------|---|
| Form                        | : liquid, clear                               |
| Color                       | : colourless                                  |
| Odor                        | : slight alcoholic                            |
| Molecular Weight            | : 60.11 g/mol                                 |
| pH                          | : not applicable                              |
| Melting point/range         | : -88 °C (-126 °F)                            |
| Boiling point/boiling range | : 82.3 °C (180.1 °F)                          |
| Vapor pressure              | : 44 hPa                                      |
| Relative vapour density     | : 2.1<br>(Air = 1.0)                          |
| Density                     | : 0.785 g/cm <sup>3</sup><br>at 25 °C (77 °F) |
| Water solubility            | : completely soluble                          |
| Viscosity, dynamic          | : 2.1 mPa.s<br>at 25 °C (77 °F)               |

**SECTION 10. STABILITY AND REACTIVITY**

|                     |   |
|---------------------|---|
| Conditions to avoid | : Heat, flames and sparks.<br>Keep away from direct sunlight.                       |
| Materials to avoid  | : Strong acids<br>Strong oxidizing agents<br>Keep away from metals.<br>Acetaldehyde |

## 2-Propanol (323)

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

|                                  |   |
|----------------------------------|---|
|                                  | Aluminium<br>Chlorine<br>Ethylene oxide<br>Isocyanates<br>Oxygen<br>May attack many plastics, rubbers and coatings.                 |
| Hazardous decomposition products | : In case of fire hazardous decomposition products may be produced such as:<br>Carbon monoxide<br>Carbon dioxide (CO <sub>2</sub> ) |
| Hazardous reactions              | : Hazardous polymerisation does not occur.<br>Stable under recommended storage conditions.  |

### SECTION 11. TOXICOLOGICAL INFORMATION

|                           |   |
|---------------------------|---|
| Acute oral toxicity       | : LD50 rat<br>Dose: 5,045 mg/kg                     |
| Acute dermal toxicity     | : LD50 rabbit<br>Dose: 12,800 mg/kg                 |
| Acute inhalation toxicity | : LC50 rat<br>Dose: 16000 ppm<br>Exposure time: 8 h |
| Skin irritation           | : rabbit<br>Mild skin irritation                    |
| Eye irritation            | : rabbit<br>Severe eye irritation                   |

### SECTION 12. ECOLOGICAL INFORMATION

|  |   |
|--|---|
| Biodegradability                                     | : Biochemical Oxygen Demand (BOD) Biochemical oxygen demand within 5 days<br>58 %                   |
| Toxicity to fish                                     | : LC50<br>Species: Pimephales promelas (fathead minnow)<br>Dose: 10,400 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates. | : EC50<br>Species: Daphnia magna (Water flea)   |



## 2-Propanol (323)

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

|                                   |  |
|-----------------------------------|--|
|                                   | Dose: > 100 mg/l<br>Exposure time: 48 h  |
| Toxicity to algae                 | : LC50<br>Species: Scenedesmus subspicatus<br>Dose: > 2,000 mg/l<br>Exposure time: 72 h          |
| Additional ecological information | : Should not be released into the environment.<br>Accumulation in aquatic organisms is unlikely. |

### SECTION 13. DISPOSAL CONSIDERATIONS

Waste Information: Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of according to all federal, state and local applicable regulations.

Other Disposal Considerations: Observe all Federal, State, and Local Environmental regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

### SECTION 14. TRANSPORT INFORMATION

|             |  |               |
|-------------|--|---------------|
| <b>DOT</b>  | Proper shipping name                     | : Isopropanol |
|             | UN-Number                                | : 1219        |
|             | Class                                    | : 3           |
|             | Packing group                            | : II          |
| <b>IATA</b> | UN Number                                | : 1219        |
|             | Description of the goods                 | : Isopropanol |
|             | Class                                    | : 3           |
|             | Packaging group                          | : II          |
|             | Hazard Label                             | : 3           |
|             | Packing instruction (cargo aircraft)     | : 307         |
|             | Packing instruction (passenger aircraft) | : 305         |
| <b>IMDG</b> | Packing instruction (passenger aircraft) | : Y305        |
|             | Substance No.                            | : UN 1219     |
|             | Description of the goods                 | : Isopropanol |
|             | Class                                    | : 3           |
|             | Packaging group                          | : II          |

**2-Propanol (323)**

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

|                  |       |
|------------------|-------|
| Hazard Label     | : 3   |
| EmS Number       | : F-E |
| 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 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 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                       |
| Switzerland. Consolidated Inventory   | : On or in compliance with the inventory                       |
| New Zealand. Interim Inventory of Chemicals (as published by ERMA new Zealand)                                      | : On or in compliance with the inventory                       |

**National regulatory information**

|                            |               |         |
|----------------------------|---------------|---------|
| <b>SARA 313 Components</b> | : Propan-2-ol | 67-63-0 |
|----------------------------|---------------|---------|

## 2-Propanol (323)

Version 1

Revision Date 10/22/2007

Print Date 01/25/2008

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

**CERCLA Reportable Quantity** : 100 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** : Propan-2-ol 67-63-0

**New Jersey RTK** : Propan-2-ol 67-63-0

**Pennsylvania RTK** : Propan-2-ol 67-63-0

**WHMIS Classification** : B2  
 D2B  
 D2A

### SECTION 16. OTHER INFORMATION

|                 | <b>HMIS III</b> | <b>NFPA</b> |
|-----------------|-----------------|-------------|
| Health Hazard   | : 2*            | 1           |
| Flammability    | : 3             | 3           |
| Physical Hazard | : 0             |             |
| Instability     | :               | 0           |

#### Further information

\* - Chronic health hazard