SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 50% Methanol / 50% Water (400)

MSDS Number : 000000011287

Product Use Description : Solvent

Manufacturer or supplier's details : Honeywell International Inc.
                                101 Columbia Road
                                Morristown, NJ 07962-1057

For more information call : 1-800-368-0050
                          +1-231-726-3171
                          (Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701 or +1-303-389-1414
                          Transportation (CHEMTREC): 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 : slight alcohol-like

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 3
                                           Eye irritation, Category 2A
                                           Reproductive toxicity, Category 2
                                           Specific target organ toxicity - single exposure, Category 1,
                                           Eyes, Nervous system, Systemic toxicity
GHS Label elements, including precautionary statements

Symbol(s) : ![Flammable](image1) ![Eye Irritation](image2) ![Caution](image3)

Signal word : Danger

Hazard statements : Flammable liquid and vapour.\nCauses serious eye irritation.\nSuspected of damaging fertility or the unborn child.\nCauses damage to organs.

Precautionary statements : **Prevention:**\nObtain special instructions before use.\nDo not handle until all safety precautions have been read and understood.\nKeep away from heat/sparks/open flames/hot surfaces. - No smoking.\nKeep container tightly closed.\nGround/bond container and receiving equipment.\nUse explosion-proof electrical/ ventilating/ lighting/ equipment.\nUse only non-sparking tools.\nTake precautionary measures against static discharge.\nDo not breathe dust/ fume/ gas/ mist/ vapours/ spray.\nWash skin thoroughly after handling.\nDo not eat, drink or smoke when using this product.\nWear protective gloves/ eye protection/ face protection.

Response: \nIF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.\nIF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.\nIF exposed: Call a POISON CENTER or doctor/ physician.\nIf eye irritation persists: Get medical advice/ attention.\nIn case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage: \nStore in a well-ventilated place. Keep cool.
Store locked up.

**Disposal:**
Dispose of contents/container to an approved waste disposal plant.

**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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>55.80 %</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>44.20 %</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**Inhalation**: Call a physician immediately. 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.

**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 immediately. Do NOT induce vomiting.
Immediate medical attention is required. Never give anything by mouth to an unconscious person.

**Notes to physician**

Treatment : Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Alcohol-resistant foam  
Carbon dioxide (CO2)  
Dry chemical  
Cool closed containers exposed to fire with water spray.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during firefighting : 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/flashback to vapor source.  
In case of fire hazardous decomposition products may be produced such as:  
Carbon monoxide  
Carbon dioxide (CO2)  
Formaldehyde

Special protective equipment for firefighters : 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.  
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.

Environmental precautions:
- Prevent further leakage or spillage if safe to do so.
- Prevent product from entering drains.
- Discharge into the environment must be avoided.
- Do not flush into surface water or sanitary sewer system.
- Do not allow run-off from fire fighting to enter drains or water courses.

Methods for cleaning up:
- Ventilate the area.
- No sparking tools should be used.
- Use explosion-proof equipment.
- Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national 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.
- Do not breathe vapours or spray mist.
- 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**

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Ensure that eyewash stations and safety showers are close to the workstation location.</th>
</tr>
</thead>
</table>
| Engineering measures | Use with local exhaust ventilation.
Prevent vapour 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
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.
Do not swallow.
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.
This material has an established AIHA ERPG exposure limit.
The current list of ERPG exposure limits can be found at

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>TWA: time weighted average (200 ppm)</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>SKIN_DES: Skin designation: Can be absorbed through the skin.</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>STEL: Short term exposure limit (250 ppm)</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>REL: Recommended exposure limit (REL): 260 mg/m3 (200 ppm)</td>
<td>2005</td>
<td>NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards</td>
<td></td>
</tr>
</tbody>
</table>
### Methanol 67-56-1

**SKIN DESIGNATION:** Can be absorbed through the skin.  
**PEL:** Permissible exposure limit  
**260 mg/m³ (200 ppm)**  
**02 2006**  
**OSHA TRANS:** US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

**TWA:** Time weighted average  
**260 mg/m³ (200 ppm)**  
**1989**  
**Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)**

**STEL:** Short term exposure limit  
**325 mg/m³ (250 ppm)**  
**1989**  
**Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)**

**SKIN FINAL:** Skin designation (Final Rule Limit applies): Can be absorbed through the skin.  
**1989**  
**Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)**

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** liquid, clear
- **Color:** colourless
- **Odor:** slight alcohol-like
- **pH:** Note: not determined
Melting point/freezing point : Note: not determined
Boiling point/boiling range : Note: not determined
Flash point : 84 °F (29 °C)
Evaporation rate : ca. 5
   Method: Compared to Butyl acetate.
Lower explosion limit : 6 %(V)
Upper explosion limit : 36 %(V)
Vapor pressure : 129 hPa
   at 20 °C(68 °F)
Vapor density : 1.11 Note: (Air = 1.0)
Density : 0.9264 g/cm³ at 25 °C
Water solubility : Note: completely soluble
Ignition temperature : 464 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under recommended storage conditions.
Possibility of hazardous : Hazardous polymerisation does not occur.
reactions
Conditions to avoid : Heat, flames and sparks. Keep away from direct sunlight.

Incompatible materials to avoid : Strong oxidizing agents Aluminium Magnesium May attack many plastics, rubbers and coatings.

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO2) Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity
Methanol : LD50: 5,628 mg/kg Species: rat

Acute inhalation toxicity
Methanol : LC50: 64000 ppm Exposure time: 4 h Species: rat

Acute dermal toxicity
Methanol : LD50: 15,800 mg/kg Species: rabbit

Skin irritation
Methanol : Species: rabbit Classification: irritating Exposure time: 24 h

Eye irritation
Methanol : Species: rabbit eye Classification: irritating
Repeated dose toxicity

Methanol: Species: rat
Application Route: Inhalation
Test substance: Methanol
Developmental Toxicity
NOAEL (maternal toxicity) 10,000 ppm
NOAEL (developmental toxicity) 5,000 ppm
Skeletal and visceral malformations.

Genotoxicity in vitro

Methanol: Note: In vitro tests did not show mutagenic effects

Genotoxicity in vivo

Methanol: Note: In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Methanol: LC50: 29,400 mg/l
Exposure time: 96 h
Species: Fathead minnow

Toxicity to daphnia and other aquatic invertebrates

Methanol: LC50: 10,000 mg/l
Exposure time: 24 h
Species: Daphnia

Toxicity to bacteria

Methanol: EC50: 43,000 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum
EC50: 40,000 mg/l  
Exposure time: 15 min  
Species: Photobacterium phosphoreum  

EC50: 39,000 mg/l  
Exposure time: 25 min  
Species: Photobacterium phosphoreum  

Further information on ecology  
Additional ecological information: Accumulation in aquatic organisms is unlikely.  
The product is readily degradable in the environment.  
Do not flush into surface water or sanitary sewer system.  

SECTION 13. DISPOSAL CONSIDERATIONS  
Disposal methods: Observe all Federal, State, and Local Environmental regulations.  

SECTION 14. TRANSPORT INFORMATION  
DOT  
UN/ID No.: UN 1230  
Proper shipping name: METHANOL SOLUTION  
Class: 3  
Packing group: II  
Hazard Labels: 3  

IATA  
UN/ID No.: UN 1230  
Description of the goods: METHANOL SOLUTION  
Class: 3  
Packaging group: II  
Hazard Labels: 3  
Packing instruction (cargo aircraft): 364  
Packing instruction (passenger aircraft): 352  
Packing instruction (passenger aircraft): Y341  

IMDG  
UN/ID No.: UN 1230
Description of the goods: METHANOL SOLUTION
Class: 3
Packaging group: II
Hazard Labels: 3 (6.1)
EmS Number: F-E, S-D
Marine pollutant: no

SECTION 15. REGULATORY INFORMATION

Inventories
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): All components of this product are on the Canadian DSL.
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
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand: On the inventory, or in compliance with the inventory

National regulatory information
US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 5000 lbs
- Methanol 67-56-1

SARA 302 Components : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:
- Methanol 67-56-1

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

California Prop. 65 : WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
- Methanol 67-56-1

Massachusetts RTK : Methanol 67-56-1
New Jersey RTK : Methanol 67-56-1
Pennsylvania RTK : Methanol 67-56-1

WHMIS Classification : B2: Flammable liquid
- D1B: Toxic Material Causing Immediate and Serious Toxic Effects
- D2A: Very Toxic Material Causing Other Toxic Effects
- D2B: Toxic Material Causing Other Toxic Effects
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.
SECTION 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>HMIS III</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard</td>
<td>2*</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Instability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by Honeywell Performance Materials and Technologies  Product Stewardship Group