SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methanol (230, 232, 233)
MSDS Number  : 000000011383
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 : slight alcoholic

Hazard Summary : Flammable. In use, may form flammable/explosive vapour-air mixture. May be fatal if swallowed. May be fatal if inhaled. May be harmful if absorbed through skin. Irritating to eyes, respiratory system and skin. May cause blindness. May cause irritation of the gastrointestinal tract. Can be absorbed through skin. Repeated exposure may cause skin dryness or cracking. This product may cause adverse reproductive effects. Possible risk of harm to the unborn child.

Potential Health Effects
Skin : Irritating to skin.
       Can be absorbed through skin.
       May be harmful if absorbed through 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 blindness.

Ingestion

: Ingestion may cause gastrointestinal irritation, nausea,
vomiting and diarrhoea.
Causes headache, drowsiness or other effects to the central
nervous system.
May cause systemic poisoning with symptoms paralleling
those of inhalation.

Inhalation

: Causes respiratory tract irritation.
Causes headache, drowsiness or other effects to the central
nervous system.
Inhalation of high vapour concentrations can cause CNS-
depression and narcosis.
May cause blindness.

Chronic Exposure

: 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.
This product may cause adverse reproductive effects.
Possible risk of harm to the unborn child.

Aggravated Medical Condition

: Liver disorders
Eye disorders
Skin disorders
Neurological disorders
Kidney disorders
Do not use if pregnant.

Target Organs

: Eyes
Skin
Respiratory system
Central nervous system
Gastrointestinal tract

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
AH230-4PC METHANOL AH PLASTIC COATED

Component          | CAS-No.  | Weight %
--------------------|----------|----------
Methanol            | 67-56-1  | 100.00   

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. FIRE-FIGHTING MEASURES

**Flash point**
11 °C (52 °F) closed cup

**Ignition temperature**
464 °C (867 °F)

**Lower explosion limit**
6 % (V)

**Upper explosion limit**
36 % (V)

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

**Extinguishing media which shall not be used for safety**
Do not use a solid water stream as it may scatter and spread fire.
Material Safety Data Sheet

AH230-4PC METHANOL AH PLASTIC COATED

Version 1
Revision Date 03/26/2009
Print Date 01/03/2011

reasons
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/flash back 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 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.
- 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.
- 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.
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

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
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 http://www.aiha.org/1documents/Committees/ERP-erpglevels.pdf.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH</th>
<th>TWA</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>250</td>
</tr>
</tbody>
</table>

Skin designation:
Can be absorbed through the skin.

<table>
<thead>
<tr>
<th></th>
<th>NIOSH</th>
<th>REL</th>
<th>ppm</th>
<th>mg/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>250</td>
<td>325</td>
</tr>
</tbody>
</table>

Skin designation:
Can be absorbed through the skin.

|                    | US CA OEL | TWA PEL   | ppm   | mg/m3 |
|--------------------|           |           | 200   | 260   |
|                    |           | Ceiling   |       | 1,000 |
|                    |           | STEL      | 250   | 325   |

Skin designation:
Can be absorbed through the skin.
AH230-4PC METHANOL AH PLASTIC COATED

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid, clear</td>
</tr>
<tr>
<td>Color</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>slight alcoholic</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>34.04 g/mol</td>
</tr>
<tr>
<td>pH</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>not applicable</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>64.7 °C (148.5 °F)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>129.32 hPa</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>(Air = 1.0)</td>
</tr>
<tr>
<td>Density</td>
<td>0.792 g/cm³</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>completely soluble</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid: Heat, flames and sparks. Keep away from direct sunlight.

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

Hazardous reactions: Hazardous polymerisation does not occur.
Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

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

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

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

Skin irritation: rabbit
Irritating
Exposure time: 24 h

Eye irritation: rabbit eye
Irritating

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish: LC50
Species: Fathead minnow
Dose: 29,400 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: LC50
Species: Daphnia
Dose: 10,000 mg/l
Exposure time: 24 h

Toxicity to bacteria: EC50
Species: Photobacterium phosphoreum
Dose: 43,000 mg/l
Exposure time: 5 min
Toxicity to bacteria: EC50
Species: Photobacterium phosphoreum
Dose: 40,000 mg/l
Exposure time: 15 min

Toxicity to bacteria: EC50
Species: Photobacterium phosphoreum
Dose: 39,000 mg/l
Exposure time: 25 min

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

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

SECTION 14. TRANSPORT INFORMATION

DOT
- UN-Number: 1230
- Proper shipping name: Methanol
- Class: 3
- Packing group: II
- Hazard Label: 3

IATA
- UN Number: 1230
- Description of the goods: Methanol
- Class: 3
- Packaging group: II
- Hazard Label: 3 (6.1)
- Packing instruction (cargo aircraft): 307
- Packing instruction (passenger aircraft): 305
- Packing instruction (passenger aircraft): Y305

IMDG
- Substance No.: UN 1230
- Description of the goods: Methanol
- Class: 3
- Packaging group: II
- Hazard Label: 3 (6.1)
- EmS Number: F-E
- Marine pollutant: no
## SECTION 15. REGULATORY INFORMATION

### Inventories

<table>
<thead>
<tr>
<th>Country/Act</th>
<th>Compliance Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU. EINECS</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>US. Toxic Substances Control Act</td>
<td>On TSCA Inventory</td>
</tr>
<tr>
<td>Australia. Industrial Chemical (Notification and Assessment) Act</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Japan. Kashin-Hou Law List</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Korea. Toxic Chemical Control Law (TCCL) List</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>China. Inventory of Existing Chemical Substances</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>CH INV - Switzerland</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>NZIOC - New Zealand</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
</tbody>
</table>

### National regulatory information

- **SARA 313 Components**: Methanol 67-56-1
- **SARA 311/312 Hazards**: Fire Hazard Acute Health Hazard Chronic Health Hazard
- **CERCLA Reportable**: 5000 lbs
AH230-4PC METHANOL AH PLASTIC COATED

Quantity

**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**

: Methanol 67-56-1

**New Jersey RTK**

: Methanol 67-56-1

**Pennsylvania RTK**

: Methanol 67-56-1

**WHMIS Classification**

: B2
  : D1B
  : D2A
  : D2B

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></td>
</tr>
<tr>
<td>Instability</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Further information

* - Chronic health hazard