SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 95% Hexane / 5% Ethyl Acetate (819)
MSDS Number : 000000013437
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 : mild hydrocarbon-like

Hazard Summary : Extremely flammable. In use, may form flammable/explosive vapour-air mixture. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Aspiration hazard if swallowed - can enter lungs and cause damage. Irritating to eyes, respiratory system and skin. Contains a peripheral neurotoxin. Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet. May cause irritation of the gastrointestinal tract. Repeated exposure may cause skin dryness or cracking. This product may cause adverse reproductive effects. Possible risk of impaired fertility.

Potential Health Effects

Skin : Irritating to 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.
  - Causes blurred vision.
  - May cause corneal injury.

Ingestion

- Aspiration hazard if swallowed - can enter lungs and cause damage.
  - Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
  - May cause systemic poisoning with symptoms paralleling those of inhalation.

Inhalation

- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
  - Causes respiratory tract irritation.
  - Causes headache, drowsiness or other effects to the central nervous system.
  - Contains a peripheral neurotoxin.
  - Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet.
  - Vapours may cause drowsiness and dizziness.
  - Inhalation of high vapour concentrations can cause CNS-depression and narcosis.

Chronic Exposure

- Repeated and prolonged exposure to solvents may cause brain and nervous system damage.
  - Contains a peripheral neurotoxin.
  - Signs/symptoms include muscle weakness and a numbing or tingling sensation in the arms, legs or feet.
  - 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 impaired fertility.

Aggravated Medical Condition

- Eye disorders
- Respiratory disorders
- Liver disorders
- Kidney disorders
- Neurological disorders
- Skin disorders

Target Organs

- Eyes
- Skin
- Respiratory system
- Central nervous system
- Peripheral nervous system
- testes

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>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexane</td>
<td>110-54-3</td>
<td>93.30</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>141-78-6</td>
<td>6.70</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: Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately. Never give anything by mouth to an unconscious person.

Notes to physician

Treatment: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Flash point: -22.67 °C (-8.81 °F) closed cup

Ignition temperature: 225 °C (437 °F) The physical data is that of the main component.

Lower explosion limit: 1.2 %(V) The physical data is that of the main component.
### Upper explosion limit

7.7 %(V)

The physical data is that of the main component.

### Suitable extinguishing media

- Foam
- Carbon dioxide (CO2)
- Dry chemical
- 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.
- Vapours are heavier than air and may spread along floors.
- Vapors may travel to areas away from work site before igniting/flashign back to vapor source.
- In case of fire hazardous decomposition products may be produced such as:
  - Carbon monoxide
  - Carbon dioxide (CO2)

### 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**: 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.  
  - 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.  
  - Do not breathe vapours or spray mist.  
  - Avoid contact with skin, eyes and clothing.

## Advice on protection against fire and explosion

- **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.
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 and face before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH</th>
<th>TWA</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexane</td>
<td>110-54-3</td>
<td>TWA</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

Skin designation:
Can be absorbed through the skin.

<table>
<thead>
<tr>
<th></th>
<th>NIOSH REL</th>
<th>50 ppm</th>
<th>180 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>US CA OEL</td>
<td>TWA PEL</td>
<td>50 ppm</td>
<td>180 mg/m³</td>
</tr>
<tr>
<td>OSHA Z1</td>
<td>PEL</td>
<td>500 ppm</td>
<td>1,800 mg/m³</td>
</tr>
</tbody>
</table>
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid, clear
Color : colourless
Odor : mild hydrocarbon-like
pH : 6.1
Boiling point/boiling range : 60.56 °C (141.01 °F)
Vapor pressure : 165.32 hPa at 20 °C (68 °F)
Density : 0.6820 g/cm³ at 20 °C (68 °F)
Density : 0.6776 g/cm³ at 25 °C (77 °F)
Water solubility : partly soluble

SECTION 10. STABILITY AND REACTIVITY

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

Materials to avoid : Oxidizing agents
Halogens
Oxygen
May attack many plastics, rubbers and coatings.
### SECTION 11. TOXICOLOGICAL INFORMATION

**Acute oral toxicity**
- LD50 rat  
  - Dose: 25 g/kg  
  - Test substance: n-Hexane

**Acute oral toxicity**
- LD50 rat  
  - Dose: 5,620 mg/kg  
  - Test substance: Ethyl acetate

**Acute dermal toxicity**
- LD50 rabbit  
  - Dose: 3,000 mg/kg  
  - Test substance: n-Hexane

**Acute dermal toxicity**
- LD50 rabbit  
  - Dose: < 18,020 mg/kg  
  - Test substance: Ethyl acetate

**Acute inhalation toxicity**
- LC50 rat  
  - Dose: 48000 ppm  
  - Exposure time: 4 h  
  - Test substance: n-Hexane

**Acute inhalation toxicity**
- LC50 rat  
  - Dose: 200 mg/l  
  - Exposure time: 1 h  
  - Test substance: Ethyl acetate

**Repeated dose toxicity**
- Inhalation rat central nervous system effects, structural abnormalities in sperm  
  - 5,000 ppm  
  - Exposure time: 8 d  
  - Test substance: n-Hexane

**Repeated dose toxicity**
- Oral rat central nervous system effects, testicular effects, NOAEL (No observed adverse effect level)  
  - 1,140mg/kg/d  
  - Exposure time: 90 d  
  - Test substance: n-Hexane
Repeated dose toxicity : Oral rat central nervous system effects, testicular effects, LOAEL (Lowest observed adverse effect level) 4,000mg/kg/d Exposure time: 90 d Test substance: n-Hexane

Repeated dose toxicity : Inhalation rat Developmental Toxicity, NOAEL (maternal toxicity), 1000 ppm, NOAEL (developmental toxicity), 5,000 ppm Test substance: n-Hexane

Genotoxicity in vitro : Test substance: n-Hexane In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Test substance: n-Hexane In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish : LC50 Species: Oncorhynchus mykiss (rainbow trout) Dose: 4.14 mg/l Exposure time: 96 h Test substance: n-Hexane

Toxicity to fish : LC50 Species: Pimephales promelas (fathead minnow) Dose: 2.5 mg/l Exposure time: 96 h Test substance: n-Hexane

Toxicity to fish : LC50 Species: Bluegill sunfish Dose: 4.12 mg/l Exposure time: 96 h Test substance: n-Hexane

Toxicity to fish : LC50 Species: Pimephales promelas (fathead minnow) Dose: 220 mg/l Exposure time: 96 h Test substance: Ethyl acetate

Toxicity to daphnia and other aquatic invertebrates : LC50 Species: Daphnia magna (Water flea) Dose: 3.87 mg/l Exposure time: 96 h Test substance: n-Hexane
### Toxicity to algae
- **Species:** Microcystis aeruginosa (blue alge)
- **Dose:** 550 mg/l
- **Test substance:** Ethyl acetate

### Toxicity to bacteria
- **Species:** Pseudomonas putida
- **Dose:** 650 mg/l
- **Test substance:** Ethyl acetate

### Additional ecological information
- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Should not be released into the environment.

### 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. (n-Hexane, Ethyl acetate)
- **Class:** 3
- **Packing group:** II
- **Hazard Label:** 3

#### IATA
- **UN Number:** 1993
- **Description of the goods:** FLAMMABLE LIQUID, N.O.S. (n-Hexane, Ethyl acetate)
- **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. (N-HEXANE)
### SECTION 15. REGULATORY INFORMATION

#### Inventories

<table>
<thead>
<tr>
<th>Country/Act</th>
<th>Region/Aspect</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>Switzerland. Consolidated Inventory</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
</tbody>
</table>

**National regulatory information**
<table>
<thead>
<tr>
<th>SARA 313 Components</th>
<th>n-Hexane 110-54-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312 Hazards</td>
<td>Fire Hazard</td>
</tr>
<tr>
<td></td>
<td>Acute Health Hazard</td>
</tr>
<tr>
<td></td>
<td>Chronic Health Hazard</td>
</tr>
<tr>
<td>CERCLA Reportable Quantity</td>
<td>5359 lbs</td>
</tr>
<tr>
<td>California Prop. 65</td>
<td>WARNING! This product contains a chemical known in the State of California to cause cancer. Benzene 71-43-2</td>
</tr>
<tr>
<td></td>
<td>WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm. Benzene 71-43-2</td>
</tr>
<tr>
<td>Massachusetts RTK</td>
<td>n-Hexane 110-54-3</td>
</tr>
<tr>
<td></td>
<td>Ethyl acetate 141-78-6</td>
</tr>
<tr>
<td></td>
<td>Benzene 71-43-2</td>
</tr>
<tr>
<td>New Jersey RTK</td>
<td>n-Hexane 110-54-3</td>
</tr>
<tr>
<td></td>
<td>Ethyl acetate 141-78-6</td>
</tr>
<tr>
<td>Pennsylvania RTK</td>
<td>n-Hexane 110-54-3</td>
</tr>
<tr>
<td></td>
<td>Ethyl acetate 141-78-6</td>
</tr>
<tr>
<td>WHMIS Classification</td>
<td>B2 D2B</td>
</tr>
</tbody>
</table>

**SECTION 16. OTHER INFORMATION**

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>HMIS III</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1*</td>
<td>1</td>
</tr>
</tbody>
</table>
95% Hexane / 5% Ethyl Acetate (819)

Flammability : 3  3
Physical Hazard : 0
Instability : 0

Further information
* - Chronic health hazard