# Identification of the Substance/ Preparation and Company

<table>
<thead>
<tr>
<th>Product Information: Diisobutyl Ketone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested Use and Prohibitions:</td>
</tr>
<tr>
<td>Solvents for paints, nitrocellulose lacquers.</td>
</tr>
<tr>
<td>Information on Producer/Supplier Name, Addresses, Phone: Linyuan Factory, LCY Chemical Corp. / No.11, Shihhua 3rd Rd., Linyuan District, Kaohsiung City</td>
</tr>
<tr>
<td>Emergency Phone / Fax: (07) 6419966-137 / (07) 6410537</td>
</tr>
</tbody>
</table>

## Hazard Identification:

<table>
<thead>
<tr>
<th>Hazard Category: Class 2 flammable liquids, Class 4 acute toxic substance (inhalation), Class 3 skin corrosion/irritation substance, Class 2 severe injury/eye irritation substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labeled Contents:</td>
</tr>
<tr>
<td>Symbols: Flames, Exclamation Point, Health hazard</td>
</tr>
<tr>
<td>Warning: Danger</td>
</tr>
<tr>
<td>Hazard Warning Information:</td>
</tr>
<tr>
<td>Highly flammable gas and vapor</td>
</tr>
<tr>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>Causes slight skin irritation</td>
</tr>
<tr>
<td>Causes eye irritation</td>
</tr>
<tr>
<td>Hazard Prevention Measures:</td>
</tr>
<tr>
<td>Place the container in a well-ventilated area.</td>
</tr>
<tr>
<td>Keep away from inflammables. – Smoking prohibited.</td>
</tr>
<tr>
<td>For contact with eyes, wash with large amount of water and then seek medical help.</td>
</tr>
<tr>
<td>Prevent static electricity build-up</td>
</tr>
<tr>
<td>Other Hazards:</td>
</tr>
</tbody>
</table>

## Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Name: Diisobutyl Ketone</td>
</tr>
</tbody>
</table>
### Synonyms:
- DIBK
- 2,6-Dimethyl-4-heptanone
- sym-Diisopropyl-acetone
- Isovalerone
- Isobutylketone
- 2,6-Dimethyl-hept-4-one
- s-Dissopropylacetone

### Chemical Abstracts Number (CAS No.): 108–83–8

### Percentage for Chemical Ingredient (%): 100

## IV. First Aid Measures:

### Emergency and First Aid Procedures:

#### Inhalation:
1. Move the patient immediately to an area with plenty of fresh air.  
2. If breathing stops, apply artificial respiration or CPR.  
3. Seek medical attention immediately.

#### Skin Contact:
1. Immediately wash with large amount of water for more than 10 minutes.  
2. If irritation persists, seek medical attention immediately.  
3. Contaminated clothing must be washed thoroughly before disposal.

#### Eye Contact:
1. Immediately lift eyelids, wash with warm water for more than 20 minutes.  
2. Seek medical attention immediately.

#### Ingestion:
1. Seek medical attention.

**First-Aid Personal Protection:** Must wear Class C protective gear and perform emergency rescue in safe area.

## V. Fire Fighting Measure:

### Suitable Extinguishing Media:
- Chemical powder, carbon dioxide, water fog, alcohol-resistant foam

### Special Exposure Hazards:
1. Vapor is heavier than air and may travel to far places and flashback from ignition sources.  
2. Fire site may produce poisonous gases.  
3. Container may crack violently when heated.

### Special Extinguishing Procedure:
- Wear Self-contained breathing apparatus and protective clothing. USE WATER WITH CAUTION. Material will float and may ignite on surface of water. Use water spray to keep fire-exposed containers cool.

### Special Protection Equipment:
- Fire fighters must wear air respirators, protective gloves, and fire fighting coats.

## VI. Accidental Release Measures:

### Personal Protection:
1. Before the polluted area is cleaned up completely, access to the area should be restricted.  
2. Make sure the cleaning work is performed by trained personnel.  
3. The personnel should wear appropriate personal protective equipment.

### Environmental Protection:
1. The air in the area should be well ventilated.
2. All flammable sources should be extinguished or eliminated.
3. Report the accident to the safety, health, and environmental protection authorities of the government.
4. Do not let the spill get into sewers or closed spaces.

Methods for Cleaning Up:
1. Do not come in contact with the released chemical.
2. Stop or reduce the spill under safe conditions if possible.
3. Use soil, sand or similar stable non-combustible substances that will not react with the spill to surround the spill.
4. For small spills, absorb using an absorbent that will not react with the spill. Contaminated absorbent is as dangerous as the spill and must be kept in properly sealed and labeled containers. Use water to wash and clean the spill area.
5. For large spills, contact the fire department, emergency rescue units and supplier for assistance.

VII. Handling and Storage:

Handling:
1. Use restricted amount in specified areas.
2. Containers must be kept tightly sealed, even when not in use.

Storage:
1. Store in cool, dry and well-ventilated locations.
2. Keep heat sources and sparks from the storage area. Fans must also be fireproof.

VIII. Exposure Control / Personal Protection:

<table>
<thead>
<tr>
<th>Control Factor</th>
<th>TWA</th>
<th>STEL</th>
<th>CEILING</th>
<th>BEIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25ppm</td>
<td>37.5ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Personal Protection Equipment:

**Respiratory Protection:**
- **Below 500ppm:** 1. Chemical filter cartridge type breathing apparatus with organic vapor filter cartridge, supplied air type breathing apparatus or air respirator (self-contained breathing apparatus)
- **Unknown concentration:** 1. Positive-pressure self-contained breathing apparatus, positive-pressure full air-supply respiratory apparatus with positive-pressure self-contained respiratory apparatus
- **Escape:** 1. (a) Full front and back gas mask with air purifying and organic vapor absorption function. (b) Any type of respirator for escaping.

**Hand Protection:**
1. Impermeable gloves made from Responder, Teflon, 4H and Tychem 10000 are preferable; however, prolonged use is not recommended. Wash properly and dry after use.

**Eye Protection:**
1. Do not wear contact lens when using safety goggles or face masks.

**Skin & Body Protection:**
1. Wear one-piece protective work clothing, work boots.

**Hygiene Procedures:**
1. Polluted clothes should be removed as soon as the work is completed. The clothes should be worn or discarded only after being washed. The washing staff should be informed of the harmful effects of the pollution.
2. Eating, drinking, and smoking are strictly prohibited in the work area.
3. Wash hands thoroughly after handling the substance.
4. Keep the work area clean.

### IX. Physical and Chemical Properties / Characteristics:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>colorless liquid</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>&lt; 0.11 ppm</td>
</tr>
<tr>
<td>pH value</td>
<td>-</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>-</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>-</td>
</tr>
<tr>
<td>Spontaneous Temperature</td>
<td>396 °C</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>1.7mmHg @20°C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.8 (water=1)</td>
</tr>
<tr>
<td>Log Kow</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>mild</td>
</tr>
<tr>
<td>Melting point</td>
<td>-42°C</td>
</tr>
<tr>
<td>Boiling Point / Boiling Range</td>
<td>168°C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>49 °C</td>
</tr>
<tr>
<td>Test Method</td>
<td>Tag closed cup</td>
</tr>
<tr>
<td>Exposure Limits</td>
<td>0.8% ~ 7.1% @ 93.3 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>4.9 (Air=1)</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>negligible</td>
</tr>
<tr>
<td>Percent volatile</td>
<td></td>
</tr>
</tbody>
</table>

### X. Stability and Reactivity:

**Stability:** Stable under ordinary conditions.

**Special Conditions of Hazardous Reaction:**
Material can decompose at elevated temperatures. On long term storage, materials containing similar functional groups from peroxides of unknown stability.

### Conditions to Avoid:
- Fire, sparks, static electricity, heat, ignition sources

### Incompatibility:
- Material reacts with strong oxidizing.

### Hazardous Decomposition Products:
- Will not occur.

## XI. Toxicological Information

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Skin contact, inhalation, ingestion, eye contact</th>
</tr>
</thead>
</table>

### Symptoms:
- Irritation, nausea, vomiting, lack of appetite, dysentery, headache, sleep.

#### Acute Toxicity:

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>1. Direct contact may cause slight irritation.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>1. Irritates nose and pharynx, induces nausea, vomiting, diarrhea, headache, dizziness, and lack of appetite.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>1. May induce stomachache, nausea, vomiting, diarrhea and suppresses the nervous system.</td>
</tr>
<tr>
<td>Eye</td>
<td>1. Vapor may irritate eyes and induce burning sensation. Liquid may cause pain, swelling and tears.</td>
</tr>
</tbody>
</table>

**LD50 (Test animal, absorption route):** 5750 mg/kg (rat, ingestion)

**LC50 (Test animal, absorption route):** 10 mg/24H (rabbit, skin): caused slight irritation

## XII. Ecological Information:

### Eco-toxicity:

- LC50 (Fish): -
- EC50 (aquatic invertebrates): -
- Bio-concentration Factor (BCF): 7

### Durability and Degradability:

1. Released in water, this material may evaporate, decompose by photolysis, bioaccumulation inside organic organisms in the water, or adsorb to dirt and settle.
2. When released to air, this material is expected to be readily decomposed by photolysis or react with free hydroxyl radicals.

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half-life (air):</td>
<td>-</td>
</tr>
<tr>
<td>Half-life (water surface):</td>
<td>-</td>
</tr>
<tr>
<td>Half-life (underground water):</td>
<td>-</td>
</tr>
<tr>
<td>Half-life (soil):</td>
<td>-</td>
</tr>
</tbody>
</table>

### Biological Accumulation:
- This material will transform into other substances and not accumulate inside the body.

### Fluidity in the Soil:
- When released to the soil, this material will decompose through photolysis, evaporate and decompose by decomposition of aerobic organisms.

### Other adverse effects:
- -
XIII. Disposal Information:

Disposal Information:
1. Dispose according to current laws and regulations.
2. For small amounts, absorb using paper napkin and burn in approved solvent incinerator.
3. For large amounts, collect and then dispose using specified incinerating method.

XIV. Transport Information:

<table>
<thead>
<tr>
<th>The United Nations Number (Un-No): 1157</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Transport Name: Diisobutyl Ketone</td>
</tr>
<tr>
<td>Transport Hazard Classification: Class 3 Flammable Liquids - Class 8: Corrosive substances</td>
</tr>
<tr>
<td>Packaging Category: III</td>
</tr>
<tr>
<td>Marine Pollutant (Yes/No): No</td>
</tr>
<tr>
<td>Special Transport Way and Note: -</td>
</tr>
</tbody>
</table>

XV. Regulation Information:

Apply Regulation:
1. Enforcement Rules of the Labor Safety and Health Act
2. Regulations of Hazard Communication on Dangerous and Harmful Material
3. Toxic Chemical Substances Control Act
4. Standards of Tolerable Hazardous Substance Concentration in the Air of Labor Working Environment
5. Traffic Safety Regulations
6. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations

XVI. Other Information:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>“《Chinese Toxic Substances Registry》, Taiwan-America Collaboration Project”, Department of Health, Executive Yuan, March, 1997, R.O.C.</td>
</tr>
<tr>
<td>2.</td>
<td>Chinese Toxicology Database, Department of Health, Executive Yuan</td>
</tr>
<tr>
<td>4.</td>
<td>MSDS CD data, Center for Industrial Safety and Health Technology of ITRI.</td>
</tr>
<tr>
<td>5.</td>
<td>Handbook of Toxic and Hazardous Chemicals and Carcinogens</td>
</tr>
<tr>
<td>6.</td>
<td>Hazardous Substances Database (HSDB), ChemKnowledge CD, Volume 65, 2005</td>
</tr>
<tr>
<td>7.</td>
<td>ChemWatch Database, 2005-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responsible</th>
<th>Name: Linyuan Factory, LCY Chemical Corp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Address/Tel: No.11, Shihhua 3rd Rd., Linyuan District, Kaohsiung City / (07) 6419966-137</td>
</tr>
<tr>
<td>Prepared by</td>
<td>Job title : Industrial Safety Engineer.</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Date</td>
<td>March 1, 2011</td>
</tr>
<tr>
<td>Note</td>
<td>This MSDS version is intended for reference only.</td>
</tr>
</tbody>
</table>