1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Glyoxal 40%
Product Number: 50649
Brand: Zhonglan
Company: Zhonglan Industry Co., Ltd.
11/f Sanqing Fengrun BLDG, South Gongye Road No.100.
City: Jinan
China
Telephone: +86-531-88032799
Fax: +86-531-85821093
Emergency Phone #: 531 8803-1599

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Oxalaldehyde, Ethanedial
Formula: C₂H₂O₂

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethandial</td>
<td>107-22-2</td>
<td>203-474-9</td>
<td>605-016-00-7</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>-</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Emergency Overview
- OSHA Hazards
  - Toxic by inhalation
  - Toxic by ingestion
  - Skin sensitisers
  - Irritant
  - Mutagen

HMIS Classification
- Health Hazard: 0
- Chronic Health Hazard: *
- Flammability: 0
- Physical hazards: 0

NFPA Rating
- Health Hazard: 0
- Fire: 0
- Reactivity Hazard: 0
Inhalation  
Toxic if inhaled. Causes respiratory tract irritation.

Skin  
May be harmful if absorbed through skin. Causes skin irritation.

Eyes  
Causes eye irritation.

Ingestion  
Toxic if swallowed.

4. FIRST AID MEASURES

General advice  
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled  
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact  
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties  
- Flash point: no data available
- Ignition temperature: no data available

Suitable extinguishing media  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters  
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions  
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions  
Do not let product enter drains.

Methods for cleaning up  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling  
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

Storage  
Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
</table>

Page 2 of 6
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethandial TWA</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>Date</td>
<td>2001-02-22</td>
</tr>
<tr>
<td>Remarks</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Remarks**

Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Sensitizer Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

**Vapor and aerosol**

**Personal protective equipment**

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves.

**Eye protection**

Safety glasses

**Skin and body protection**

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

- Form: clear, liquid
- Colour: colourless

**Safety data**

- pH: no data available
- Melting point: no data available
- Boiling point: no data available
- Flash point: no data available
- Ignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Density: 1.270 g/cm³
- Water solubility: no data available

10. **STABILITY AND REACTIVITY**
Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong bases, Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available

Irritation and corrosion
no data available

Sensitisation
no data available

Chronic exposure
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: 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.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects
- **Inhalation**: Toxic if inhaled. Causes respiratory tract irritation.
- **Skin**: May be harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: Causes eye irritation.
- **Ingestion**: Toxic if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)
no data available

Ecotoxicity effects
no data available

Further information on ecology
no data available

13. DISPOSAL CONSIDERATIONS
**Product**
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**
Dispose of as unused product.

14. **TRANSPORT INFORMATION**

**DOT (US)**
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

15. **REGULATORY INFORMATION**

**OSHA Hazards**
Toxic by inhalation., Toxic by ingestion, Skin sensitiser, Irritant, Mutagen

**DSL Status**
All components of this product are on the Canadian DSL list.

**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**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>1989-12-01</td>
</tr>
</tbody>
</table>

**New Jersey Right To Know Components**

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>1989-12-01</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Haihang Industry shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.