

## SAFETY DATA SHEET

Preparation Date: 7/22/2015

Revision Date: 7/22/2015

Revision Number: G1

### 1. IDENTIFICATION

**Product identifier**

**Product code:** G1022  
**Product Name:** GLYOXAL, 40 PERCENT IN WATER

**Other means of identification**

**Synonyms:** Aerotex glyoxal 40  
**CAS #:** Mixture  
**RTECS #** MD2700000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** Synthesizing polymers. Biocide. Disinfectant.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1B
Germ cell mutagenicity	Category 2

**Label elements**

## Warning

### Hazard statements

Harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction  
Suspected of causing genetic defects



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

May be harmful if swallowed

### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wash face, hands and any exposed skin thoroughly after handling  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves/protective clothing/eye protection/face protection

### Precautionary Statements - Response

*IF exposed or concerned: Get medical advice/attention*

*Specific treatment (see .? on this label)*

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing and wash before reuse

If skin irritation or rash occurs: Get medical advice/attention

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

### Precautionary Statements - Storage

Store locked up

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Water 7732-18-5	7732-18-5	58-62	*
Glyoxal 107-22-2	107-22-2	38-42	*

## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

#### **Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

### Most important symptoms and effects, both acute and delayed

#### **Symptoms**

Causes serious eye irritation. May cause conjunctival redness. May cause swelling of the conjunctiva. Causes skin irritation. May cause sensitization by skin contact. May cause allergic skin reaction. May cause irritation of respiratory tract. Dyspnea (Difficulty breathing and shortness of breath). Suspected of causing genetic defects. Causes digestive (gastrointestinal) tract irritation. Vomiting. May affect the liver. It may affect the blood.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to Physician:**

Treat symptomatically

### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

## 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### **Suitable Extinguishing Media:**

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

#### **Unsuitable Extinguishing Media:**

Do not use a solid (straight) water stream as it may scatter and spread fire.

### Specific hazards arising from the chemical

#### **Hazardous Combustion Products:**

If it is involved in a fire, the following may be released:  
Carbon monoxide, carbon dioxide

#### **Specific hazards:**

No information available.

### Special Protective Actions for Firefighters

#### **Specific Methods:**

No information available.

#### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear personal protective equipment.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).

**Methods for cleaning up** Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Technical Measures/Precautions:**

Use only in area provided with appropriate exhaust ventilation. Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

**Safe Handling Advice**

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not ingest. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

**Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

**Incompatible Materials:**

Oxidizing agents. Strong bases. Alkali Metals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### National occupational exposure limits

**United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Water 7732-18-5	None	None	None	None
Glyoxal 107-22-2	None	None	0.1 mg/m <sup>3</sup> TWA inhalable fraction and vapor	0.1 mg/m <sup>3</sup> TWA

**Canada**

Components	Alberta	British Columbia	Ontario	Quebec
Water 7732-18-5	None	None	None	None
Glyoxal 107-22-2	0.1 mg/m <sup>3</sup> TWA	0.1 mg/m <sup>3</sup> TWA aerosol, inhalable, and vapour	0.1 mg/m <sup>3</sup> TWA inhalable fraction and vapor	None

## Australia and Mexico

Components	Australia	Mexico
Water 7732-18-5	None	None
Glyoxal 107-22-2	None	None

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

- Eye protection:** Goggles or Face-shield
- Skin and body protection:** Chemical resistant apron Gloves Long sleeved clothing
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:**

Liquid

**Appearance:**

No information available

**Color:**

Colorless to pale yellow.

**Odor:**

No information available

**Taste**

No information available

**Molecular/Formula weight:**

No information available

**Formula:**

No information available

**Flammability:**

No information available

**Flashpoint (°C/°F):**

No information available.

**Flash point (°C):**

No data available

**Flash Point Tested according to:**

Not available

**Autoignition Temperature (°C/°F):**

No information available

**Lower Explosion Limit (%):**

No information available

**Upper Explosion Limit (%):**

No information available

**pH:**

2.1-2.7

**Melting point/range(°C/°F):**

-15°C/5°F

**Boiling point/range(°C/°F):**

104°C/219°F

**Decomposition temperature(°C/°F):**

120°C/248°F

**Bulk density:**

No information available

**Density (g/cm<sup>3</sup>):**

1.27-1.29 @ 20 deg. C

**Specific gravity:**

No information available

**Vapor pressure @ 20°C (kPa):**

2.02-2.3

**Evaporation rate:**

No information available

**Vapor density:**

1.17

**VOC content (g/L):**

No information available

**Odor threshold (ppm):**

No information available

**Partition coefficient (n-octanol/water):**

log Pow -1.15

**Viscosity:**

No information available

**Miscibility:**

No information available

**Solubility:**

Completely soluble in water

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents  
Reacts with strong bases

### Chemical stability

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Incompatible materials.

**Incompatible Materials:** Oxidizing agents. Strong bases. Alkali Metals.

**Hazardous decomposition products:** Calcium oxides.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### **Principal Routes of Exposure:**

Ingestion. Inhalation. Skin. Eyes.

### Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	8250mg/kg
ATEmix (inhalation-gas)	11250mg/l
ATEmix (inhalation-dust/mist)	3.8mg/l

### **Component Information**

#### *Water - 7732-18-5*

**LD50/oral/rat** = > 90 mL/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rat** = No information available  
**LD50/dermal/rabbit** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = No information available

#### *Glyoxal - 107-22-2*

**LD50/oral/rat** = 200 mg/kg Oral LD50 Rat  
640-770 mg/kg (Glyoxyl 40%) (EU Commission IUCLID dataset)  
2960 mg/kg (Glyoxyl 40%) (RTECS)  
>2000 - <5000 mg/kg (Glyoxyl 40%) (EU Commission IUCLID dataset)

**LD50/oral/mouse** = 400-800 mg/kg Oral LD50 mouse (RTECS, EU Commission IUCLID dataset)  
4064 mg/kg oral LD50 mouse (Glyoxyl 40%) (EU Commission IUCLID dataset)

**LD50/dermal/rat** = >2000 mg/kg (40% Glyoxyl) (RTECS; EU Commission IUCLID dataset)  
**LD50/dermal/rabbit** = 10000 mg/kg Dermal LD50 Rabbit (Glyoxyl 40%) (EU Commission IUCLID dataset)  
12700 mg/kg (Glyoxyl 40%) (Hazardous Substance Databank)  
10 mL/kg Dermal LD50 Rabbit (RTECS)  
**LC50/inhalation/rat** = 2.44 mg/L Inhalation LC50 Rat 4 hr. (Glyoxyl 40%) (EU Commission IUCLID dataset;  
Hazardous Substance Databank)  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = 760 mg/kg oral LD50 guinea pig (RTECS)  
6600 mg/kg dermal LD50 guinea pig (RTECS)  
10000 mg/kg oral LD50 guinea pig (Glyoxyl 40%) (RTECS)

## Product Information

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = No information available

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available

**VALUE - Dust/Mist** = No information available

## Symptoms

**Skin Contact:** Causes skin irritation. It can be absorbed through the skin. If absorbed through skin it may affect the respiratory system.

**Eye Contact:** Causes serious eye irritation. It may cause conjunctival irritation. May cause conjunctival redness. May cause swelling (edema) of the conjunctiva.

**Inhalation** Harmful by inhalation. May cause irritation of respiratory tract. May cause dyspnea (difficulty breathing or shortness of breath).

**Ingestion** Causes digestive (gastrointestinal) tract irritation. May cause vomiting. May affect behavior/central nervous system (somnolence). May cause muscle weakness.

**Aspiration hazard** No information available

## Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Chronic Toxicity** Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated skin contact may cause allergic reaction. Prolonged or repeated ingestion may affect the blood (changes in serum composition). Prolonged or repeated ingestion may affect the liver.

**Sensitization:** May cause sensitization by skin contact

**Mutagenic Effects:** For Glyoxal:  
 Suspected of causing genetic defects  
 Mutagenic effects in mammalian somatic cells  
 Sister Chromatid Exchangee: Hamster ovary (RTECS)  
 Mutations in microorganisms  
 Experiments with bacteria have shown mutagenic effects

**Carcinogenic effects:** Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Glyoxal	Not listed	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Target Organs:** Respiratory system.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** Aquatic environment.

*Glyoxal - 107-22-2*

**Freshwater Algae Data:** 348.59 mg/L EC50 Pseudokirchneriella subcapitata 96 h  
 500 mg/L EC50 Desmodesmus subspicatus 72 h  
 500 mg/L EC50 Desmodesmus subspicatus 96 h

**Freshwater Fish Species Data:** 215 mg/L LC50 Pimephales promelas 96 h static 1

**Water Flea Data:** 404 mg/L EC50 Daphnia magna 48 h

**Persistence and degradability:** Readily biodegradable

**Bioaccumulative potential:** Potential for bioconcentration in aquatic organisms is low.

**Mobility:** It is expected to have high mobility in soil.

**13. DISPOSAL CONSIDERATIONS**



### 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

##### Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

##### Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal. Do not re-use empty containers Dispose of as unused product. Dispose of in accordance with federal, state and local regulations

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	None	None	None	None
Glyoxal	None	None	None	None

### 14. TRANSPORT INFORMATION

#### DOT

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** None  
**ERG No:** No information available  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** No information available

#### TDG (Canada)

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

#### ADR

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

#### IMO / IMDG

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**MFAG:** No information available  
**Maximum Quantity:** No information available

## 14. TRANSPORT INFORMATION

### RID

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

### IATA

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Water</i>	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Glyoxal</i>	Present	Present KE-27447	Present	Present (2)-510 (2)-509	Present	Present	Present 203-474-9

### U.S. Regulations

*Glyoxal*

New Jersey RTK Hazardous Substance List: 4070

### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Water</i>	Not Listed	Not Listed	Not Listed	Not Listed
<i>Glyoxal</i>	Not Listed	Not Listed	Not Listed	Not Listed

### CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Water	None	None	None	None	None
Glyoxal	None	None	None	None	None

#### U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Water	Not Applicable	Not Applicable
Glyoxal	Not Applicable	09/30/1991 06/30/1998

#### Canada

##### WHMIS hazard class:

D2B Toxic materials  
F Dangerously reactive material

##### Water

Uncontrolled product according to WHMIS classification criteria

##### Glyoxal

D2B F

##### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Glyoxal	1 %

#### Inventory

Components	Canada (DSL)	Canada (NDSL)
Water	Present	Not Listed
Glyoxal	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	Not listed	Not listed
Glyoxal	Not listed	Not listed

#### EU Classification

##### R-phrase(s)

R68 - Possible risk of irreversible effects.  
R43 - May cause sensitization by skin contact.  
R20 - Harmful by inhalation.  
R36/38 - Irritating to eyes and skin.

##### S -phrase(s)

S 2 - Keep out of the reach of children.  
S36/37 - Wear suitable protective clothing and gloves.

Components	Classification	Concentration Limits:	Safety Phrases
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Water		No information	
Glyoxal	Xn; R20 Xi; R36/38 R43 Muta.Cat.3; R68	1%<=C<10% Xn;R43 10%<=C Xn;R20-36/38-43	S2 S36/37

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Xn - Harmful.

Xi - Irritant.



**16. OTHER INFORMATION**

**Preparation Date:** 7/22/2015  
**Revision Date:** 7/22/2015  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**