

SAFETY DATA SHEET

Preparation Date: 7/22/2015

Revision Date: 08/15/2018

Revision Number: G3

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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

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

Product code: G1022

Product name: GLYOXAL, 40
 PERCENT IN WATER

1 / 13

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 must 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
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 water
Take off contaminated clothing and wash it before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep 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 %
Water	7732-18-5	58-62
Glyoxal	107-22-2	38-42

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing 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 an allergic skin reaction
May cause irritation of respiratory tract
Dyspnea (Difficulty breathing and shortness of breath)
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: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

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:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. 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	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Water	7732-18-5	None	None	None	None
Glyoxal	107-22-2	None	None	0.1 mg/m ³ TWA inhalable fraction and vapor	0.1 mg/m ³ TWA

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Water	7732-18-5	None	None	None	None

Glyoxal	107-22-2	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA aerosol, inhalable, and vapour	0.1 mg/m ³ TWA inhalable fraction and vapor	None
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Australia and Mexico

Components	CAS-No.	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. Wear suitable gloves and eye/face protection. When using, do not eat, drink or smoke. 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.	Formula: No information available
Molecular/Formula weight (g/mole): No information available	Flammability: No information available	Flashpoint (°C/°F): No information 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	Melting point/range(°C/°F): -15°C/5°F	Decomposition temperature(°C/°F): 120°C/248°F
Boiling point/range(°C/°F): 104°C/219°F	Bulk density: No information available	Density (g/cm3): 1.27-1.29 @ 20 deg. C
Specific gravity: No information available	pH: 2.1-2.7	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: No information available.

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

Component Information

Water

CAS-No. 7732-18-5

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

Glyoxal

CAS-No. 107-22-2

LD50/oral/rat = = 200 mg/kg Oral LD50 Rat

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/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)
LD50/dermal/rat = 12700 mg/kg Dermal LD50 = 2.44 mg/L Inhalation LC50 = 200 mg/kg Oral LD50
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
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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 Exchange: Hamster ovary (RTECS)
 Mutations in microorganisms
 Experiments with bacteria have shown mutagenic effects

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Glyoxal	107-22-2	Not listed	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

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

Freshwater Fish Species Data: 215 mg/L LC50 *Pimephales promelas* 96 h static 1 460 - 680 mg/L LC50 *Leuciscus idus* 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

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	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	7732-18-5	None	None	None	None
Glyoxal	107-22-2	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class No information available
Packing group: No information available
Emergency Response Guide Number No information available
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions No Information available
Symbol(s): No information available
Description: 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
Marine Pollutant 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

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

Marine Pollutant No information available

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

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

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
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Water	7732-18-5	PresentACTIV E	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
Glyoxal	107-22-2	PresentACTIV E	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	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	7732-18-5	Not Listed	Not Listed	Not Listed	Not Listed
Glyoxal	107-22-2	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable	Section 302 Extremely Hazardous Substances	Section 302 Extremely Hazardous Substances and	Section 313 - Chemical Category	Section 313 - Reporting de minimis

Product code: G1022

Product name: GLYOXAL, 40 PERCENT IN WATER

10 / 13

		Quantities	and TPQs	RQs		
Water	7732-18-5	None	None	None	None	None
Glyoxal	107-22-2	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Water	7732-18-5	Not Applicable	Not Applicable
Glyoxal	107-22-2	Not Applicable	09/30/199106/30/1998

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Component
Water
7732-18-5 (58-62)

WHMIS 2015 Hazard Classification
Not a dangerous product according to HPR classification criteria

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

D2B Toxic materials

Components

Water

WHMIS 1988
Uncontrolled product according to WHMIS classification criteria
D2B,F

Glyoxal

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	CAS-No.	Canada (DSL)	Canada (NDSL)
Water	7732-18-5	Present	Not Listed
Glyoxal	107-22-2	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Water	7732-18-5	Not listed
Glyoxal	107-22-2	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	7732-18-5	Not listed
Glyoxal	107-22-2	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Water	7732-18-5	
Glyoxal	107-22-2	Acute toxicity - Inhalation - Acute Tox. 4: H332 Harmful if inhaled. (Minimum

Product code: G1022

Product name: GLYOXAL, 40
PERCENT IN WATER

11 / 13

		classification); Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation.; Serious Eye Damage/Eye Irritation - Eye Irrit. 2: H319 Causes serious eye irritation.; Skin sensitizers - Skin Sens. 1: H317 May cause allergic skin reaction.; Germ cell mutagenicity - Muta. 2: H341 Suspected of causing genetic defects.605-016-00-7
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EU - CLP (1272/2008)

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	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Water	7732-18-5		No information	
Glyoxal	107-22-2	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.

Xn



Xi



16. OTHER INFORMATION

Preparation Date: 7/22/2015
Revision Date: 08/15/2018
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

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End of Safety Data Sheet