

## SAFETY DATA SHEET

Version 9.2  
Revision Date 05/20/2025  
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## SECTION 1. IDENTIFICATION

## 1.1 Product identifiers

Product name : Glyoxal (40% solution in water) for synthesis

Product Number : 8.20610  
Catalogue No. : 820610  
Brand : Millipore

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Chemical for synthesis

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

## 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ : Category 2 (Kidney)

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toxicity - repeated  
exposure (Oral)

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H341 Suspected of causing genetic defects.  
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves, protective clothing, eye protection and face protection.

#### Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.

#### Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Components**

| Chemical name   | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-----------------|-------------------|-----------------------|--------------|
| Glyoxazal       | 107-22-2*         | $\geq 15 - \leq 40$   | TSC          |
| ethylene glycol | 107-21-1*         | $\geq 1 - \leq 5$     | TSC          |

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.

If inhaled : After inhalation: fresh air. Call in physician.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

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### SECTION 5. FIREFIGHTING MEASURES

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|                                                |                                                                                                                                                                 |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media                   | : Water<br>Foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry powder                                                                                              |
| Unsuitable extinguishing media                 | : For this substance/mixture no limitations of extinguishing agents are given.                                                                                  |
| Specific hazards during fire fighting          | : Mixture with combustible ingredients.<br><br>Development of hazardous combustion gases or vapours possible in the event of fire.                              |
| Hazardous combustion products                  | : Carbon oxides                                                                                                                                                 |
| Specific extinguishing methods                 | : No data available                                                                                                                                             |
| Further information                            | : Prevent fire extinguishing water from contaminating surface water or the ground water system.                                                                 |
| Special protective equipment for fire-fighters | : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                                                     |                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel:<br>Do not breathe vapours, aerosols.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>For personal protection see section 8. |
| Environmental precautions                                           | : Do not let product enter drains.                                                                                                                                                                                                                                                                 |
| Methods and materials for containment and cleaning up               | : Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up with liquid-absorbent and neutralising                                                                                                                           |

material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Further information on storage conditions : Tightly closed.

Storage class : 10, Combustible liquids

Recommended storage temperature : Recommended storage temperature see product label.

Further information on storage stability : Recommended storage temperature see product label.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

| Components      | CAS-No.  | Value type<br>(Form of exposure)           | Control parameters /<br>Permissible concentration | Basis   |
|-----------------|----------|--------------------------------------------|---------------------------------------------------|---------|
| Glyoxazal       | 107-22-2 | TWA<br>(Inhalable fraction and vapor)      | 0.1 mg/m <sup>3</sup>                             | ACGIH   |
|                 |          | TWA<br>(aerosol)                           | 0.1 mg/m <sup>3</sup>                             | US WEEL |
| ethylene glycol | 107-21-1 | TWA<br>(Vapour)                            | 25 ppm                                            | ACGIH   |
|                 |          | STEL<br>(Vapour)                           | 50 ppm                                            | ACGIH   |
|                 |          | STEL<br>(Inhalable fraction, Aerosol only) | 10 mg/m <sup>3</sup>                              | ACGIH   |

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Recommended Filter type: : filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Filter type ABEK

Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Full contact  
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : KCL 741 Dermatril® L

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Safety glasses

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                                     |                                                                                                |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------|
| Appearance                                          | : liquid                                                                                       |
| Color                                               | : colourless                                                                                   |
| Odor                                                | : characteristic                                                                               |
| Odor Threshold                                      | : No data available                                                                            |
| pH                                                  | : > 2 - 3 (68 °F / 20 °C)                                                                      |
| Melting point                                       | : 7 °F / -14 °C                                                                                |
|                                                     | : 219 °F / 104 °C (1,013 hPa)                                                                  |
| Flash point                                         | : No data available                                                                            |
| Evaporation rate                                    | : No data available                                                                            |
| Flammability (solid, gas)                           | : No data available                                                                            |
| Flammability (liquids)                              | : No data available                                                                            |
| Burning rate                                        | : No data available                                                                            |
| Upper explosion limit /<br>Upper flammability limit | : No data available                                                                            |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                                                            |
| Vapor pressure                                      | : 106.7 hPa (122 °F / 50 °C)<br>20.2 hPa (68 °F / 20 °C)                                       |
| Relative vapour density                             | : No data available                                                                            |
| Relative density                                    | : No data available                                                                            |
| Density                                             | : ca. 1.27 g/cm <sup>3</sup> (68 °F / 20 °C)                                                   |
| Solubility(ies)                                     |                                                                                                |
| Water solubility                                    | : soluble (68 °F / 20 °C)                                                                      |
| Partition coefficient: n-<br>octanol/water          | : log Pow: -1.15<br>Method: (experimental)<br>Bioaccumulation is not expected. (External MSDS) |

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|                           |                                            |
|---------------------------|--------------------------------------------|
| Autoignition temperature  | : ca. 545 °F / 285 °C<br>Method: DIN 51794 |
| Decomposition temperature | : No data available                        |
| Viscosity                 |                                            |
| Viscosity, dynamic        | : 8 mPa.s (68 °F / 20 °C)                  |
| Viscosity, kinematic      | : No data available                        |
| Flow time                 | : No data available                        |
| Explosive properties      | : Not classified as explosive.             |
| Oxidizing properties      | : none                                     |
| Particle characteristics  |                                            |
| Particle size             | : No data available                        |

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## SECTION 10. STABILITY AND REACTIVITY

|                                    |                                                                                                                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reactivity                         | : No data available                                                                                                                                                                                         |
| Chemical stability                 | : The product is chemically stable under standard ambient conditions (room temperature) .                                                                                                                   |
| Possibility of hazardous reactions | : Violent polymerisation may be caused by:<br>Ammonia<br>Amines<br>alkalines<br>Exothermic reaction with:<br>chlorosulfonic acid<br>Ethyleneimine<br>Sodium hydroxide<br>Nitric acid<br>conc. sulfuric acid |
| Conditions to avoid                | : no information available                                                                                                                                                                                  |
| Incompatible materials             | : Aluminium<br>Copper<br>Mild steel                                                                                                                                                                         |
| Hazardous decomposition products   | : In the event of fire: see section 5                                                                                                                                                                       |

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Mixture

##### Acute toxicity

LD50 Oral - Rat - > 2,000 - < 5,000 mg/kg

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - 4 h - 2.44 mg/l - aerosol

Acute toxicity estimate Inhalation - 4 h - 27.75 mg/l - vapour (Calculation method)

Symptoms: Possible symptoms: , mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

LD50 Dermal - Rat - > 2,000 mg/kg

##### Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

##### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

##### Respiratory or skin sensitization

Mixture may cause an allergic skin reaction.

##### Germ cell mutagenicity

Evidence of genetic defects.

##### Carcinogenicity

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 on OSHA's list of regulated carcinogens.

##### Reproductive toxicity

No data available

##### Specific target organ toxicity - single exposure

Mixture may cause respiratory irritation.

##### Specific target organ toxicity - repeated exposure

Mixture may cause damage to organs through prolonged or repeated exposure.

- Kidney

##### Aspiration hazard

No data available

### 11.2 Additional Information

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

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## Components

### Glyoxazal

#### Acute toxicity

LD50 Oral - Rat - male and female - 3,300 mg/kg

(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - Expert judgement - 4 h - 11.1 mg/l - vapour

LD50 Dermal - Rabbit - 10,000 mg/kg

Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema.

Liver: Other changes.

Kidney, Ureter, Bladder: Changes in tubules (including acute renal failure, acute tubular necrosis).

(RTECS)

#### Skin corrosion/irritation

Remarks: Causes skin irritation.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Serious eye damage/eye irritation

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Germ cell mutagenicity

Suspected of causing genetic defects.

Test Type: Ames test

Test system: *S. typhimurium*

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: Positive results were obtained in some in vitro tests.

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: positive

Method: OECD Test Guideline 486

Species: Rat - male and female - Liver cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male - Bone marrow

Result: negative

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Upper respiratory tract

**Specific target organ toxicity - repeated exposure****Aspiration hazard**

No data available

**ethylene glycol****Acute toxicity**

Acute toxicity estimate Oral - 500.1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LC50 Inhalation - Rat - male and female - 6 h - > 2.5 mg/l - aerosol

Remarks: (ECHA)

LD50 Dermal - Mouse - male and female - > 3,500 mg/kg

Remarks: (ECHA)

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 20 h

Remarks: (ECHA)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 24 h

Remarks: (ECHA)

**Respiratory or skin sensitization**

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Species: Rat - male and female

Result: negative

Remarks: (ECHA)

**Carcinogenicity**

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

**Reproductive toxicity**

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Oral - May cause damage to organs through prolonged or repeated exposure.  
- Kidney

**Aspiration hazard**

No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

|                                                     |                                                                                                               |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : LC50 (Leuciscus idus (Golden orfe)): 460 - 680 mg/l<br>Exposure time: 96 h<br>Remarks: (External MSDS)      |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): 404 mg/l<br>Exposure time: 48 h<br>Remarks: (External MSDS)              |
| Toxicity to algae/aquatic plants                    | : IC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l<br>Exposure time: 72 h<br>Remarks: (External MSDS) |
| Toxicity to microorganisms                          | : EC50 (Pseudomonas putida): 102 mg/l<br>Exposure time: 16 h<br>Remarks: (External MSDS)                      |

**Components:****Glyoxazal:**

|                                                     |                                                                                                                                                                                          |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : LC50 (Leuciscus idus (Golden orfe)): 186 - 272 mg/l<br>End point: mortality<br>Exposure time: 96 h<br>Test Type: static test<br>Method: DIN 38412 part 15                              |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Americamysis bahia (Mysid)): 69.2 mg/l<br>End point: mortality<br>Exposure time: 48 h<br>Test Type: semi-static test<br>Analytical monitoring: yes<br>Method: US-EPA<br>GLP: yes |
| Toxicity to algae/aquatic plants                    | : ErC50 (Skeletonema costatum (marine diatom)): 313.8 mg/l                                                                                                                               |

Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 112 mg/l  
End point: Growth inhibition  
Exposure time: 34 d  
Test Type: flow-through test  
Analytical monitoring: yes  
Method: OECD Test Guideline 210  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 3.19 mg/l  
End point: reproduction rate  
Exposure time: 21 d  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 211  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 400 mg/l  
Exposure time: 30 min  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

**ethylene glycol:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 72,860 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Method: US-EPA

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

|                                                                        |                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish (Chronic toxicity)                                    | : LC50 (Menidia peninsulae (tidewater silverside)): > 1,500 mg/l<br>End point: mortality<br>Exposure time: 28 d<br>Test Type: flow-through test<br>Analytical monitoring: yes<br>Remarks: (ECHA)<br>The value is given in analogy to the following substances:<br>The value is given in analogy to the following substances: triethylene glycol |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : NOEC (Ceriodaphnia dubia (water flea)): 8,590 mg/l<br>End point: reproduction rate<br>Exposure time: 7 d<br>Test Type: semi-static test<br>Method: US-EPA                                                                                                                                                                                     |

### **Persistence and degradability**

#### **Product:**

|                  |                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : Result: Readily biodegradable.<br>Biodegradation: 90 - 100 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301A |
|------------------|---------------------------------------------------------------------------------------------------------------------------|

#### **Components:**

##### **Glyoxazal:**

|                  |                                                                                                                                                                                 |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : anaerobic<br>Concentration: 114 mg/l<br>Result: Not readily biodegradable.<br>Biodegradation: 10 - 20 %<br>Exposure time: 62 d<br>Method: OECD Test Guideline 311<br>GLP: yes |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

##### **ethylene glycol:**

|                  |                                                                                                                                                                                                                       |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : aerobic<br>Inoculum: activated sludge, non-adapted<br>Concentration: 53 mg/l<br>Result: Readily biodegradable.<br>Biodegradation: 90 - 100 %<br>Exposure time: 10 d<br>Method: OECD Test Guideline 301A<br>GLP: yes |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                 |                                                         |
|---------------------------------|---------------------------------------------------------|
| Biochemical Oxygen Demand (BOD) | : 780 mg/g<br>Incubation time: 5 d<br>Remarks: (IUCLID) |
|---------------------------------|---------------------------------------------------------|

Chemical Oxygen Demand (COD) : 1,190 mg/g  
Remarks: (IUCLID)

ThOD : 1,290 mg/g  
Remarks: (IUCLID)

BOD/ThOD : 60 %  
Remarks: (IUCLID)

### **Bioaccumulative potential**

#### **Components:**

##### **Glyoxazol:**

Partition coefficient: n-octanol/water : log Pow: -1.15 (73 °F / 23 °C)  
pH: 7  
Method: OECD Test Guideline 107  
GLP: yes  
Remarks: Bioaccumulation is not expected.

##### **ethylene glycol:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -1.36  
Remarks: Bioaccumulation is not expected.

#### **Mobility in soil**

No data available

#### **Other adverse effects**

##### **Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : Discharge into the environment must be avoided.

#### **Components:**

##### **ethylene glycol:**

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR Road

Not regulated as a dangerous good

Poison Inhalation Hazard : No

### Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

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## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

### SARA 304 Extremely Hazardous Substances Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

### SARA 313

: The following components are subject to reporting levels established by SARA Title III, Section 313:

ethylene glycol 107-21-1 >= 1 - < 5 %

## Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

|                 |          |              |
|-----------------|----------|--------------|
| ethylene glycol | 107-21-1 | >= 1 - < 5 % |
|-----------------|----------|--------------|

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

|                 |          |                |
|-----------------|----------|----------------|
| Glyoxazol       | 107-22-2 | >= 30 - < 50 % |
| ethylene glycol | 107-21-1 | >= 1 - < 5 %   |

## Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

|              |         |                |
|--------------|---------|----------------|
| formaldehyde | 50-00-0 | >= 0 - < 0.1 % |
|--------------|---------|----------------|

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

|              |         |                |
|--------------|---------|----------------|
| formaldehyde | 50-00-0 | >= 0 - < 0.1 % |
|--------------|---------|----------------|

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

## US State Regulations

### Massachusetts Right To Know

|                 |          |
|-----------------|----------|
| ethylene glycol | 107-21-1 |
| formaldehyde    | 50-00-0  |

### Pennsylvania Right To Know

|                 |          |
|-----------------|----------|
| ethylene glycol | 107-21-1 |
|-----------------|----------|

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

|                 |          |
|-----------------|----------|
| ethylene glycol | 107-21-1 |
| formaldehyde    | 50-00-0  |

### Washington Chemicals of High Concern

|                 |          |
|-----------------|----------|
| ethylene glycol | 107-21-1 |
| formaldehyde    | 50-00-0  |

### California Prop. 65

WARNING: This product can expose you to chemicals including formaldehyde, which is/are known to the State of California to cause cancer, and ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

## TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

|               |                                                       |
|---------------|-------------------------------------------------------|
| ACGIH         | : USA. ACGIH Threshold Limit Values (TLV)             |
| US WEEL       | : USA. Workplace Environmental Exposure Levels (WEEL) |
| ACGIH / TWA   | : 8-hour, time-weighted average                       |
| ACGIH / STEL  | : Short-term exposure limit                           |
| US WEEL / TWA | : 8-hr TWA                                            |

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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