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SAFETY DATA SHEET

GLYOXAL 40%

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:	107-22-2
EC number:	203-474-9
1.2 SYNONYMS:	• Ethandial • Glyoxaldehyde • 1,2-Ethanedial • Dialdehyde • Glyoxal Solution • Acetaldehyde, glycol • Oxalaldehyde • Acetaldehyde dialdehyde • Ethylene dialdehyde

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Acute toxicity (inhalation)(Category 3) Skin corrosion/irritation(Category 2) Serious eye damage/eye irritation (Category 2) Skin sensitisation(Category 1B) Germ cell mutagenicity(Category 2)
Hazard Pictograms:	
Signal Word:	Danger

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Hazard statements:	**H315 -** Causes skin irritation. **H317 -** May cause an allergic skin reaction. **H319 -** Causes serious eye irritation. **H331 -** Toxic if inhaled. **H341 -** Suspected of causing genetic defects.
Precautionary Statements:	**P261:** Avoid breathing dust, fume, gas, vapours, spray, mist. **P280:** Wear protective clothing, protective gloves, eye protection, face protection. **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P311:** Call a POISON CENTER/doctor
2.3 Other hazards:	
Inhalation:	may cause respiratory irritation, coughing, shortness of breath, and potentially severe damage to the respiratory tract.
Ingestion:	may cause severe irritation or burns to the mouth, throat, and gastrointestinal tract, leading to nausea, vomiting, abdominal pain, and potentially life-threatening damage.
Skin Contact:	may cause irritation, redness, and burns, and prolonged exposure can lead to more severe tissue damage.
Eye contact:	can cause severe irritation, redness, pain, and potentially permanent damage to the cornea and eye tissues.
Chronic Exposure:	may lead to respiratory sensitization, skin sensitization, and long-term irritation of the eyes, skin, and respiratory system, potentially increasing the risk of allergic

	reactions or more severe health effects over time.
Aggravation of pre-existing conditions:	may aggravate pre-existing conditions such as asthma, bronchitis, skin conditions (e.g., eczema), or other respiratory and allergic disorders.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 107-22-2 GLYOXAL 40%
Identification number(s):	EC number: 203-474-9

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. Never give anything by mouth to an unconscious person. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	Acute symptoms include respiratory irritation, coughing, eye and skin irritation, while delayed effects may involve persistent

	respiratory issues, skin sensitization, and potential long-term damage to the eyes or lungs.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture:	carbon oxides and hydrogen chloride gas
5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/ remove them into safety.
5.4 further information:	No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not

	return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection. Minimize dust generation and accumulation. Avoid ingestion and inhalation
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area.
Requirements to be met by storerooms and receptacles:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific end uses:	no data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.
Protection of hands:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties General Information	
Appearance: Form:	Colourless liquid
Colour:	Colourless to pale yellow
Odour:	Pungent
pH-value:	4.5

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Melting point/Melting range:	-16.6°C
Boiling point/Boiling range:	151°C
Flammability (solid, gaseous):	Highly flammable
Ignition temperature:	315°C
Decomposition temperature:	No data available
Self-igniting:	Not applicable
Flash point:	65°C
Danger of explosion:	Not explosive
Explosion limits: Lower:	No data available
Explosion limits: Upper:	No data available
Vapour pressure:	0.25 hPa (at 20 °C)
Density at 20 °C:	1.16 g/cm^3
Relative density:	1.16
Vapour density:	2.35
Evaporation rate:	Not determined
Solubility in / Miscibility with-·water at 20 °C:	Completely soluble
Partition coefficient:(n-octanol/water)	-0.41
Viscosity:	1.5 to 2.5

SECTION 10: Stability and reactivity

10.1 Reactivity	Highly reactive
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	Polymerization, amines, alcohols, Reaction with reducing agents, Flammable vapors.
10.4 Conditions to avoid	Heat, light, moisture, alkalies, oxidizing agents, reducing agents.
10.5 Incompatible materials	Strong oxidizing agents, strong bases, reducing agents, Ammonia and amines.
10.6 Hazardous decomposition products	Carbon oxides, Aldehydes.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	**LD50** (Oral, Rat) : 300 mg/kg **LD50** (Dermal, Rabbit) : 1000 mg/kg **LC50** (Inhalation Rat) : 3.5 mg/l (4hr)
Skin corrosion/Irritation:	Cause skin irritation
Serious eye damage/irritation:	Causes eye irritation
Respiratory damage/irritation:	May cause allergic reaction.
Ingestion:	No data available
Germ cell mutagenicity:	Suspected of causing genetic defects.
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Specific target organ toxicity - single exposure:	No data available
Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	partially biodegradable

SECTION 12: Ecological information

12.1 Toxicity **Aquatic toxicity:**	LC50(fish): 65 mg/l (96hr) EC50(daphnia): 30 mg/l (48 hr) EC50(algae): 12 mg/l (72 hr)
12.2 Persistence and degradability:	Highly biodegradable
12.3 Bioaccumulative potential:	low bioaccumulative .
12.4 Mobility in soil:	Moderate mobility.
12.5 Other adverse effects:	No data available

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SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	water, mild detergents, isopropyl alcohol, sodium bicarbonate, and commercial cleaners.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2920
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	GLYOXAL
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	8
14.4 Packing group · ADR, IMDG, IATA:	3
14.5 Environmental hazards:	Yes, toxic to aquatic life.
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified in listed substance as flammable and corrosive.
Named dangerous substances:	This substance is not listed in annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has been carried out under REACH regulation.

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SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.