

Product Name: Glyoxal Sample Buffer

Material Safety Data Sheet

SECTION - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY:

Identification Of The Substance/Preparation:

Trade Name: Glyoxal Sample Buffer

Chemical Name: Mixture

Synonym: None

Canada PIN: None

Use Of The Substance: For R&D/experimental use only

Company Identification:

Lonza Rockland, Inc.

191 Thomaston Street

Rockland, ME 04841-2994

USA

Business Telephone: (207) 594-3400

Emergency Telephone: 800-424-9300 (US)

SECTION 2 - HAZARDS IDENTIFICATION:

Emergency Overview: Liquid with a faint odor.

Health Effects:

Inhalation: May cause irritation to the upper respiratory system. Symptoms may include coughing and scratchy throat.

Skin: Can cause irritation. Glyoxal has been associated with sensitization (allergic reaction). Symptoms may be delayed and may include redness, rash, and itching. Dimethylsulfoxide readily absorbs through skin.

Eyes: Can cause eye irritation. Symptoms include redness, tearing, and pain.

Ingestion: May cause nausea and discomfort.

Chronic Effects/Target Organ Effects: Dimethylsulfoxide has been associated with blood, kidney, and ocular effects in animal studies.

Medical Conditions Aggravated By Exposure: None known

Environmental Effects: None known

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS:

<u>Components</u>	<u>EINECS #</u>	<u>CAS #</u>	<u>Weight%</u>	<u>EU Classification</u>
Dimethylsulfoxide (DMSO)	200-664-3	67-68-5	50	Xi: R36/37/38
glyoxal	203-474-9	107-22-2	≤20	Xi: R36/38, R43; Xn: R20; Muta. Cat. 3: R68

SECTION 4 - FIRST AID MEASURES:

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Skin: In case of contact, immediately wash thoroughly with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms develop. Wash clothing and shoes before reuse, or discard in a manner which limits further exposure.

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation persists.

Ingestion: If swallowed, get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Product Name: Glyoxal Sample Buffer

Material Safety Data Sheet

SECTION 5 - FIRE FIGHTING MEASURES:

Extinguishing Media: Dry chemical, fire-fighting foam, water spray, or carbon dioxide. Water spray may be effective in diluting spills to non-flammable mixtures and cooling fire-exposed containers.

Special Exposure Hazards: Combustible liquid. Vapors can form explosive mixtures with air at temperatures above the product flash point. Heated vapors can migrate to distant ignition sources and flash back. Shut down all ignition sources. Evacuate area and fight fire from safe distance.

Special Protective Equipment: Wear approved pressure-demand self-contained breathing apparatus and full protective gear.

SECTION 6 - ACCIDENTAL RELEASE MEASURES:

Personal Precautions: Remove all ignition sources. Ventilate the area. Isolate and evacuate the spill area, preventing entry by unauthorized persons. Prevent skin/eye contact. Use personal protective equipment to clean up spill.

Environmental Precautions: Minimize entry of material into sewers and drainage systems. Refer to permit discharge limitations if applicable.

Methods For Cleaning Up: Observe precautions in the material safety data sheet and label. Contain and recover liquid when possible. Use inert absorbent materials such as commercial clean-up pads and spill kits, vermiculite, dry sand, or earth. Dispose into a chemical waste container. Do not flush into a sewer.

SECTION 7 - HANDLING AND STORAGE:

Handling: Combustible liquid. Bonding and grounding containers when decanting or transferring liquids is recommended. Use with adequate ventilation. Avoid ignition sources, including equipment and tools that may generate sparks. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions. Follow precautions for packaging that may product residues. Avoid contact with skin and eyes.

Storage: Combustible liquid. Store in cool, dry, well-ventilated location approved for flammable liquids. Store away from sources of ignition.

Specific Uses: For R&D/experimental use only.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION:

Exposure Limit Values: Glyoxal: ACGIH TLV/TWA: 0.1 mg/m³

Exposure Controls: Use process enclosures, local exhaust ventilation, or other engineering controls as needed.

Respiratory Protection: If a respirator is required, use an approved air-purifying respirator. Consult with respirator manufacturer to determine respirator selection, use, and limitations.

Eye/Face Protection: Use safety glasses. Where contact with the eyes is likely, use chemical goggles.

Skin/Hand Protection: Use chemical gloves as needed. Use clean protective body covering clothing as needed to minimize contact with clothing and skin.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Liquid

Odor:Faint

Flash Point:89°C

Viscosity: Not available

Solubility:Soluble in water

Density (water = 1): .. Not available

Partition Coefficient: .Not available

Boiling Point:Not available

Melting Point:Not available

pH: 7

Other: Not available.

Product Name: Glyoxal Sample Buffer

Material Safety Data Sheet

SECTION 10 - STABILITY AND REACTIVITY:

Stability: Stable.

Conditions To Avoid: Avoid contact with incompatible materials, heat, and sources of ignition.

Materials To Avoid: Strong oxidizing agents, acids, and bases.

Hazardous Decomposition Products: Oxides of carbon, sulfur, and nitrogen.

SECTION 11 - TOXICOLOGICAL INFORMATION:

DMSO: Oral LD50: 14500 mg/kg (rat); Dermal LD50: 40000 mg/kg (rat); Skin irritation: 500mg /24H mild (rabbit); Eye irritation: 500mg/24H mild (rabbit); Genotoxicity: negative in the Ames assay, chromosomal aberrations assay, and sister chromatid exchange assays

Glyoxal: Oral LD50: 3300 mg/kg (rat); dermal LD50: 10 mL/kg (rabbit); Eye irritation: 20 mg severe (rabbit); Skin irritation: 500 mL/4H mild (rabbit); Squamous cell metaplasia noted in rat larynx at 2 and 10 mg/m³/29-day (as 40% solution aerosolized); Genotoxicity: positive in the Ames test

SECTION 12 - ECOLOGICAL INFORMATION:

Ecotoxicity: Glyoxal: Freshwater Algae EC50 >500 mg/L/72 and 96H (*S. subspicatus*); Freshwater Fish LC50: 460 – 480 mg/L/9H [static] (*L. idus*), LC50: 215 mg/L/96H [static] (*P. promelas*); Microtox EC50: 134 mg/L/16Hs (*P. putida*); Water Flea EC50: 430 mg/L/24H (*D. magna*); Biodegradability: >80%/28-day; DOC: 176.8 ug/L; COD: 342 mgO₂/g
DMSO: Freshwater Fish LC50: 34 mg/L/96H [flow-through] (*P. promelas*), 33 – 37 g/L/96H (*O. mykiss*), 33.5 g/L/96H (*L. macrochirus*); Water Flea EC50: 7000 mg/L/24H (*D. magna*).

Mobility: Not available

Persistence And Degradability: Not available

Bioaccumulative Potential: Not available

SECTION 13 - DISPOSAL CONSIDERATIONS:

Dispose of unused product, residues, and containers according to local, regional, state, and national regulations.

SECTION 14 - TRANSPORT INFORMATION:

Not expected to be hazardous for transport.

SECTION 15 - REGULATORY INFORMATION:

US Regulations:

This product meets the following SARA 311/312 hazard categories: acute, chronic, fire

This product contains the following SARA 302 Extremely Hazardous Substances: none.

This product contains the following SARA 313 Toxic Chemicals: none.

This product contains the following CERCLA Hazardous Substances: none.

Components of this product are listed on the TSCA inventory.

EU Regulations:

This preparation meets the dangerous preparations classification criteria under 1999/45/EC:

Xi: R36/37/38: Irritating to eyes, respiratory system and skin.

Xi: R43: May cause sensitization by skin contact.

Xn: R20: Harmful by inhalation.

Muta. Cat. 3: R68: Possible risks of irreversible effects.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

Not all components of this product are listed on EINECS.

Canadian Regulations:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and it contains the information required by the CPR.

This product meets WHMIS classification D1B and D2B. Dimethylsulfoxide and glyoxal are listed on the ingredient disclosure list (1%).

Not all components of this product are listed on the DSL.

Product Name: Glyoxal Sample Buffer

Material Safety Data Sheet

SECTION 16 - OTHER INFORMATION:

NFPA/HMIS Ratings: Health = 2; Fire = 2; Reactivity = 0; NFPA/Special = None

Other Information: None

MSDS Revisions: July 2008: Rev. 2.0

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