

MSDS: CAS9 10X REACTION BUFFER

SECTION 1 - PRODUCT AND COMPANY INFORMATION

- ◆ **Product name:** Cas9 10X Reaction Buffer
- ◆ **Catalog number:** CAS9050: 50 µg Cas9 nuclease in 50 µL buffer provided with 1.5 mL of Cas9 10X reaction buffer; CAS9100: 100 µg Cas9 nuclease in 100 µL buffer provided with 1.5 mL of Cas9 10X reaction buffer; CAS9500: 500 µg (5x100 µg) Cas9 nuclease in 500µL (5x100 µL) buffer provided with 1.5 mL of Cas9 10X reaction buffer
- ◆ **Chemical name or synonyms:** None
- ◆ **Contact:**

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SECTION 2 – HAZARDS IDENTIFICATION

- ◆ **GHS Classification**

No

- ◆ **GHS Label element**

Signal Word: None
Hazard Statements: None
Pictograms: None

- ◆ This product contains hazardous ingredients (Yes; No; Not Applicable or no information): **No**
- ◆ This product contains hazardous carcinogens (Yes; No; N/A): **No**
- ◆ This product contains hazardous ingredients to the environment. (Yes; No; N/A): **No**

SECTION 3 – COMPOSITION, INFORMATION ON INGREDIENTS

Description: Mixture

Ingredients not listed here are not hazardous or their concentrations do not exceed the limit specified in 29 CFR 1910.1200 Hazard Communication Standard (USA) and the directive 1999/45/EC-2001/59/EC (EU).

SECTION 4 – FIRST AID MEASURES

- ◆ **Effects and symptoms:**

- *Inhalation* Not available.
- *Ingestion* Slightly hazardous in case of ingestion.
- *Skin contact* Not available.
- *Eye contact* Not available.
- *Aggravating conditions* Repeated or prolonged exposure is not known to aggravate medical conditions.

- ◆ **First-Aid measures:**

- *Inhalation* If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
- *Ingestion* Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- *Skin contact* In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothes before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- *Eye contact* In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- *Notes to physician* Not available.

- Protection of first-aiders Not available.

SECTION 5 – FIRE FIGHTING MEASURES

- ◆ **Flammability of the product:** May be combustibile at high temperature.
- ◆ **Flash Points:** Not available.
- ◆ **Fire hazards in presence of various substances:** Not considered to be flammable.
- ◆ **Fire fighting media and instructions:** Use an extinguish agent suitable for surrounding fires.
- ◆ **Protective clothing (fire):** Be sure to use an approved/certified respirator or equivalent.
- ◆ **Hazardous thermal decomposition products:** Not available.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- ◆ **Personal precautions:** Safety glasses, lab coat and gloves.
- ◆ **Environmental precautions and clean-up methods:** Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
- ◆ **Small spill and leak:** Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
- ◆ **Additional information:** No dangerous substances are released.

SECTION 7 – HANDLING AND STORAGE

- ◆ **Handling:** Avoid breathing vapors or spray mists.
- ◆ **Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Store between 2 to 8°C (35.6 to 46.4 F).
- ◆ **Intended use:** Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific application.
- ◆ **Packaging materials**
- ◆ **Suitable:** Use original container.

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

- ◆ **Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Chemical Name -	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glycerol 56-81-5		TWA: 15 mg/m3 mist, total particulate TWA: 5 mg/m3 mist, respirable fraction (vacated) TWA: 10 mg/m3 mist, total particulate (vacated) TWA: 5 mg/m3 mist, respirable fraction	

- ◆ **Personal protection**
 - **Eyes:** Safety glasses.
 - **Body:** Lab coat and gloves.
 - **Respiratory:** Respirator is not needed under normal and intended conditions of use, if exposures are kept below established limits.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- ◆ **Appearance**
 - **Physical State:** Solution.
 - **Color:** Clear.
 - **Odor:** Not available.
 - **Taste:** Not available.
- ◆ **Molecular Weight:** Not available.
- ◆ **Boiling point:** Not Available
- ◆ **Melting point:** Not Available
- ◆ **Flash point:** Not available.
- ◆ **Specific gravity:** 1 (water = 1).
- ◆ **Vapor pressure:** 2.3 kPa (@20°C).

- ◆ **Vapor density:** 0.62 (Air =1).
- ◆ **Evaporation rate:** 0.36 (water) compared to butyl acetate.
- ◆ **Dispersion:** See solubility in water.
- ◆ **Solubility:** Fully miscible in cold water, hot water.

SECTION 10 – STABILITY AND REACTIVITY

- ◆ **Stability and reactivity:** The product is stable.
- ◆ **Conditions to avoid:** Not available.
- ◆ **Materials to avoid:** Not available.
- ◆ **Hazardous polymerization:** Will not occur.
- ◆ **Hazardous decomposition products:** Not available.

SECTION 11 – TOXICOLOGICAL INFORMATION

- ◆ **Toxicity on animals:**
 - **LD50:** Not available.
 - **LC50:** Not available.
- ◆ **Chronic effects on humans:** Carcinogenic effects: classified none. by NIOSH.
- ◆ **Other toxic effects on humans:** Slightly hazardous in case of ingestion, of inhalation.

SECTION 12 – ECOLOGICAL INFORMATION

- ◆ **Marine pollutant** No information available
- ◆ **Ecotoxicity** No information available.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium Chloride 7647-14-5		12946: 96 h Lepomis	macrochirus mg/L LC50 static 4747 - 7824: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 5560 - 6080: 96 h Lepomis macrochirus mg/L LC50 flow-through 6020 - 7070: 96 h Pimephales promelas mg/L LC50 static 7050: 96 h Pimephales promelas mg/L LC50 semi-static 6420 - 6700: 96 h Pimephales promelas mg/L LC50 static	340.7 - 469.2: 48 h Daphnia magna mg/L EC50 Static 1000: 48 h Daphnia magna mg/L EC5
Ethylenediamine tetraacetic acid 60-00-4	1.01: 72 h Desmodemus subspicatus mg/L EC50	44.2 - 76.5: 96 h Pimephales promelas mg/L LC50 static 34 - 62: 96 h Lepomis macrochirus mg/L LC50 static		113: 48 h Daphnia magna mg/L EC50 Static

SECTION 13 – DISPOSAL CONSIDERATIONS

- ◆ **Waste stream:** Not available.
- ◆ **Waste disposal method:** Contact a licensed professional waste disposal service to dispose of this material. Dispose in accordance with governmental environmental regulations. Observe all federal, state, and local environmental regulations.
- ◆ **European waste catalogue (EWC):** Not available.
- ◆ **Hazardous waste:** Will not occur.

SECTION 14 – TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

D.O.T.: Not regulated.

IATA.: Not regulated.

IMDG: Not regulated.

SECTION 15 – REGULATORY INFORMATION

◆ **US Federal Regulations**

RCRA (Lists of Hazardous Wastes, 40 CFR 261 Subpart D): Not applicable

CLEAN AIR ACT (SEC. 112. Hazardous Air Pollutants): Not applicable

CLEAN WATER ACT (RQ, 40 CFR): Not applicable

SARA Title III:

Section 302 -304, 40 CFR 355: Components present in this product at a level which could require reporting are: none.

Section 311 - 312: Components present in this product at a level which could require reporting are: none.

Section 313: Not applicable

TSCA Section 8(b) Inventory Status: All ingredients are listed on TSCA Inventory of Chemical Substances or exempt from TSCA Inventory requirements.

AICS Inventory Status: All ingredients are listed on the Australia Inventory of Chemical Substances.

State Lists

This product does not contain any Proposition 65 chemicals.

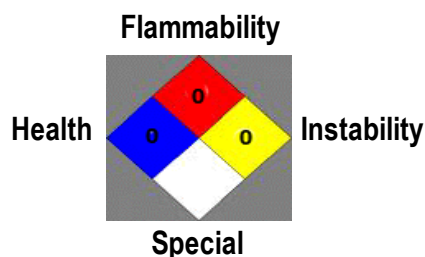
◆ This product is not classified according to the EU regulations.

SECTION 16 – OTHER INFORMATION

◆ **Hazardous Material Information System (U.S.A.):**

Health	0
Fire hazard	0
Reactivity	0
Personal protection	

◆ **National Fire Protection Association (U.S.A.):**



◆ **Revisions:**

Issue Date: 19-Apr 2017

Last Revision Date:

New format. updated Section 2,8,15,16.

◆ **Other Comments:**

To the best of our knowledge, the information contain herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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