

SAFETY DATA SHEET

Section 1: Identification

Product Identifier: Reduced Glutathione (GSH) Colorimetric Assay Kit (#MAES0042)

Relevant Identified Uses of Substance or Mixture and Uses Advised Against:

Recommended Use: For Research Use Only

Uses Advised against: No information

Company:

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Section 2: Hazard(s) Identification

2.1 GSH Classification

Classification according to Regulation (EC) No 1272/2008 [GHS/CLP].

Sensitization, skin - Category 1

2.2 Label Elements

Labeling according to Regulation (EC) No 1272/2008 [GHS/CLP]

Signal Word: WARNING

Danger symbol:

Hazard Statement(s):

H317: May cause an allergic skin reaction.

Precaution Statement(s):

P261: Avoid breathing dust/fumes/gas/mist/vapours/spray.

P272: Contaminated work clothing should not be allowed out of the workplace.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P333+313: If skin irritation or rash occurs: Get medical advice/attention.

2.3 Other hazards

None.



Section 3: Composition/ Information on Ingredients

Items	Component	Physical form	Hazardous Ingredient	Concentration	CAS No.
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Reagent 1	Acid Reagent	Odorless and colorless, liquid	No hazards	-	-
Reagent 2	Phosphate Solution	Odorless and colorless, liquid	No hazards	-	-
Reagent 3	DTNB Solution	Odorless and yellowish, liquid	No hazards	-	-
Reagent 4	GSH Standard	Odorless and white, powder	No hazards	-	-
Reagent 5	GSH Standard Stock Diluent	Odorless and colorless, liquid	Proclin 300	0.04%	96118-96-6

Section 4: First-Aid Measures

- Classification according to GHS

4.1 General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

4.2 If inhaled

- If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.3 In case of skin contact

- Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.4 In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.5 If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire-Fighting Measures

5.1 Suitable extinguishing media

- **Suitable:** Water spray, alcohol-resistant foam, dry chemical, carbon dioxide or appropriate foam.
- For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide.
- For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams
- of water may be ineffective. Cool affected containers with flooding quantities of water.

5.2 Special precautions for fire-fighters

- **Protective Equipment:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and
- eyes.

5.3 Special hazards arising from the substance or mixture

- Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

Section 6: Accidental Release Measures

6.1 Person-related safety precautions

- 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 vapors accumulating to form explosive concentrations. Vapors
- can accumulate in low areas.

6.2 Measures for environmental protection

- Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be
- avoided.

6.3 Measures for containment and cleaning

- Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite).
- Place in a container for disposal according to local regulations. Pick up and arrange disposal without creating dust. Sweep
- up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect
- with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local
- regulations (see section 13). Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

7.1 Handling

- Wear appropriate protective clothing and safety gloves.
- Avoid inhalation.
- Avoid contact with eyes, skin and clothing.
- Mechanical exhaust required.
- Keep away from ignition sources, heat and flame.
- No smoking at working site.
- **Incompatibilities:** Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken,
- damp and cause losses.
- Working place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage
- emergency treatment equipment.

7.2 Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
- Keep away from heat, sparks and flame.
- Keep away from sources of ignition.
- **Incompatible:** Strong oxidizing agents, Strong acids.
- Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage
- emergency treatment equipment.

Section 8: Exposure Controls/Personal Protection

8.1 Engineering Controls

- Mechanical exhaust required. Safety shower and eye bath.

8.2 Personal Protective Equipment

- **Respiratory:** Government approved respirator if needed.
- **Eye/face:** Chemical safety goggles if needed.
- **Clothing:** Wear appropriate protective clothing.
- **Hand/skin:** Protective 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 and good laboratory practices. Wash and dry hands.
- **Body protection:** Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.

8.3 Other Protect

- No smoking, drinking and eating at working site. Wash thoroughly after handling.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

- a) Physical state liquid
- b) Color light yellow
- c) Odor No data available
- d) Melting point/freezing point -40 °C
- e) Initial boiling point and boiling range 189 °C
- **f) Flammability (solid, gas):** No data available
- **g) Upper/lower flammability or explosive limits:** No data available
- h) Flash point 118 °C - closed cup
- **i) Autoignition temperature:** No data available
- **j) Decomposition temperature:** No data available
- k) pH 4.1 at 100 g/l
- **l) Viscosity Viscosity, kinematic:** No data available
- **Viscosity, dynamic:** 58.8 mPa.s at 25 °C
- m) Water solubility soluble
- **n) Partition coefficient:** n-octanol/water: No data available
- o) Vapor pressure No data available
- p) Density 1.03 g/cm³ Relative density No data available
- **q) Relative vapor density :** No data available
- **r) Particle characteristics:** No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information

- No data available

Section 10: Stability and Reactivity

10.1 Reactivity

- No data available

10.2 Chemical stability

- Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

- Heat, flames and sparks

10.5 Incompatible materials

- Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.

10.6 Hazardous decomposition products

- **Other decomposition products:** No data available
- **Hazardous decomposition products formed under fire conditions:** Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides,
- Hydrogen chloride gas.

Section 11: Toxicological Information

11.1 Information on toxicological effects Mixture

- Acute toxicity
- LD50 Oral - Rat - 862 mg/kg
- Acute toxicity estimate Inhalation - 4 h - 16.67 mg/l - vapor(Calculation method)
- LD50 Dermal - Rabbit - 2,800 mg/kg
- Skin corrosion/irritation
- Skin - Rabbit
- **Result:** Corrosive
- **Remarks:** Mixture causes burns.
- Serious eye damage/eye irritation
- Eyes - Rabbit
- **Result:** Corrosive to eyes
- Respiratory or skin sensitization- Guinea pig
- **Result:** May cause sensitization by skin contact.
- **Germ cell mutagenicity:** No data available
- **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

11.2 Additional Information

- Other dangerous properties can not be excluded.
- Handle in accordance with good industrial hygiene and safety practice.
- Components
- Modified alkyl carboxylate
- Acute toxicity
- **Oral:** No data available

- **Inhalation:** No data available
- **Dermal:** No data available
- **Skin corrosion/irritation:** No data available
- **Serious eye damage/eye irritation:** No data available
- **Respiratory or skin sensitization:** No data available
- **Germ cell mutagenicity:** No data available
- **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
- Mixture of 5-Chloro-2-methyl-4-isothiazolin-3-one and 2-Methyl-2H -isothiazol-3-one (3:1)
- Acute toxicity
- LD50 Oral - Rat - male and female - 66 mg/kg
- (OECD Test Guideline 401)
- LC50 Inhalation - Rat - male and female - 4 h - 0.171 mg/l - aerosol
- (OECD Test Guideline 403)
- LD50 Dermal - Rabbit - male - 87.12 mg/kg
- **Remarks:** (ECHA)
- Skin corrosion/irritation
- Skin - Rabbit
- **Result:** Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.
- (OECD Test Guideline 404)
- Serious eye damage/eye irritation
- Eyes - Rabbit
- **Result:** Causes serious eye damage.
- **Remarks:** (ECHA)
- Respiratory or skin sensitization
- Maximization Test - Guinea pig
- **Result:** positive
- (OECD Test Guideline 406)
- Germ cell mutagenicity
- **Test Type:** Ames test
- **Test system:** Salmonella typhimurium
- **Result:** positive
- **Test Type:** In vitro mammalian cell gene mutation test
- **Test system:** mouse lymphoma cells
- **Result:** positive
- **Test Type:** Ames test
- **Test system:** Salmonella typhimurium
- **Result:** Positive results were obtained in some in vitro tests.
- **Test Type:** UDS (Unscheduled DNA synthesis assay)
- **Test system:** rat hepatocytes

- **Result:** negative
- **Test Type:** Mutagenicity (mammal cell test): chromosome aberration.
- **Test system:** Human lymphocytes
- **Result:** positive
- **Method:** OECD Test Guideline 475
- **Species:** Mouse - male and female - Bone marrow
- **Result:** negative
- **Method:** OECD Test Guideline 486
- **Species:** Rat - male - Liver cells
- **Result:** negative
- **Method:** US-EPA
- **Species:** Mouse - male and female - Bone marrow
- **Result:** negative
- **Method:** US-EPA
- **Species:** Rat - male - Liver cells
- **Result:** negative
- **Method:** OECD Test Guideline 474
- **Species:** Mouse - male and female - Red blood cells (erythrocytes)
- **Result:** negative
- **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

Section 12: Ecological Information

12.1 Toxicity

- **Mixture:** No data available

12.2 Persistence and degradability: No data available

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No data available

12.5 Results of PBT and vPvB assessment

- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties: No data available

12.7 Other adverse effects: No data available

- Components
- **Modified alkyl carboxylate:** No data available
- Mixture of 5-Chloro-2-methyl-4-isothiazolin-3-one and 2-Methyl-2H -isothiazol-3-one (3:1)
- Toxicity to fish flow-through test LC50 - Oncorhynchus mykiss (rainbow trout)- 0.19 mg/l - 96 h(US-EPA)
- Toxicity to daphnia and other aquatic invertebrates
- flow-through test LC50 - Daphnia magna (Water flea) - 0.18 mg/l - 48 h(US-EPA)
- Toxicity to bacteria static test EC50 - activated sludge - 4.5 mg/l - 3 h(OECD Test Guideline 209)

- Toxicity to
- fish(Chronic toxicity)semi-static test NOEC - Oncorhynchus mykiss (rainbow trout) -0.098 mg/l - 35 d(OECD Test Guideline
- 215)
- Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)
- flow-through test NOEC - Daphnia magna (Water flea) - 0.1 mg/l - 21 d(US-EPA)

Section 13: Disposal Considerations

13.1 Disposal methods

- Dispose of waste in accordance to applicable national, regional, or local regulations. Burn in a chemical incinerator
- equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed
- disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

- Dispose in the same manner as unused product.

Section 14: Transport Information

- **RID/ADR:** Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.
- **IATA:** Non-Hazardous for Air Transport.
- **IMO:** Non-Hazardous for Sea Transport.

Section 15: Regulatory Information

This material safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008 and its amendments.

Section 16: Other Information

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