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## Material Safety Data Sheet

### Protein Markers, 15-150 kDa MSDS

#### Section 1: Chemical Product and Company Identification

**Product Name:** Protein Markers, 15-150 kDa

**Catalog Codes:** SLP3193

**CAS#:** Mixture.

**RTECS:** Not applicable.

**TSCA:** TSCA 8(b) inventory: Glycerin; Sodium lauryl sulfate; 2-Mercaptoethanol; Tris(hydroxymethyl)amino methane HCl; Bromophenol blue

**CI#:** Not applicable.

**Synonym:** Novagen Perfect Protein Markers, 15-150 kDa

**Chemical Name:** Not applicable.

**Chemical Formula:** Not applicable.

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**

1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Glycerin	56-81-5	10
Sodium lauryl sulfate	151-21-3	2
{2-}Mercaptoethanol	60-24-2	1-2
Tris(hydroxymethyl)amino methane HCl	1185-53-1	1-2
Bromophenol blue	115-39-9	0.007

**Toxicological Data on Ingredients:** Glycerin: ORAL (LD50): Acute: 12600 mg/kg [Rat]. 4090 mg/kg [Mouse]. DERMAL (LD50): Acute: 10000 mg/kg [Rabbit]. VAPOR (LC50): Acute: >570 mg/m 1 hours [Rat]. Sodium lauryl sulfate: ORAL (LD50): Acute: 1288 mg/kg [Rat.]. DUST (LC50): Acute: >3900 mg/m 1 hours [Rat]. 2-Mercaptoethanol: ORAL (LD50): Acute: 244 mg/kg [Rat]. 190 mg/kg [Mouse]. DERMAL (LD50): Acute: 300 ul/kg [Guinea pig Rabbit]. 150 ul/kg [Rabbit]. Tris(hydroxymethyl)amino methane HCl LD50: Not available. LC50: Not available.

#### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. [Sodium lauryl sulfate]. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to the nervous system, mucous membranes. The substance may be toxic to blood, kidneys, upper respiratory tract, skin, eyes, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:** Not available.

**Inhalation:**

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

**Serious Inhalation:** Not available.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

### Section 5: Fire and Explosion Data

**Flammability of the Product:** Combustible.

**Auto-Ignition Temperature:** The lowest known value is 295°C (563°F) (2-Mercaptoethanol).

**Flash Points:** The lowest known value is CLOSED CUP: 73.889°C (165°F). (2-Mercaptoethanol)

**Flammable Limits:** The greatest known range is LOWER: 2.3% UPPER: 18% (2-Mercaptoethanol)

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...), sulfur oxides (SO<sub>2</sub>, SO<sub>3</sub>...).

**Fire Hazards in Presence of Various Substances:**

Slightly flammable to flammable in presence of heat. Non-flammable in presence of open flames and sparks, of shocks, of oxidizing materials.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:**

When heated to decomposition it emits toxic fumes. Fire or contact with water may produce irritating, toxic and/or corrosive gases. Vapor may travel considerable distance to source of ignition and flash back. (2-Mercaptoethanol)

**Special Remarks on Explosion Hazards:**

Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate and may explode on contact with these compounds. Explosive glyceryl nitrate is formed from a mixture of glycerin and nitric and sulfuric acids. Perchloric acid, lead oxide + glycerin form perchloric esters which may be explosive. Glycerin and chlorine may explode if heated and confined. (Glycerin)

**Section 6: Accidental Release Measures****Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Section 7: Handling and Storage****Precautions:**

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.

**Storage:**

Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Freeze. Do not store above -20°C (-4°F). For long term storage of the markers (more than 6 months), it is recommended that the markers be stored at -20 C. If a precipitate forms during storage at -20 C, heat at 37 C for 10 minutes. For frequent use, store the markers at +4 C or at -20 C in working aliquots.

**Section 8: Exposure Controls/Personal Protection****Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:**

Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**

Glycerin TWA: 10 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] [1999] Inhalation Total. TWA: 15 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Inhalation Total. TWA: 10 STEL: 20 (mg/m<sup>3</sup>) [Canada] TWA: 5 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Inhalation Respirable. Consult local authorities for acceptable exposure limits.

**Section 9: Physical and Chemical Properties**

**Physical state and appearance:** Liquid.

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** Not applicable.

**Color:** Not available.

**pH (1% soln/water):** Not Available

**Boiling Point:** The lowest known value is 290°C (554°F) (Glycerin).

**Melting Point:** May start to solidify at 19°C (66.2°F) based on data for: Glycerin. Weighted average: 3.48°C (38.3°F)

**Critical Temperature:** Not available.

**Specific Gravity:** Weighted average: 1.24 (Water = 1)

**Vapor Pressure:** The highest known value is 0.1 kPa (@ 20°C) (2-Mercaptoethanol). Weighted average: 0.01 kPa (@ 20°C)

**Vapor Density:** The highest known value is 3.17 (Air = 1) (Glycerin). Weighted average: 3.11 (Air = 1)

**Volatility:** 100% (v/v). (2-Mercaptoethanol.)

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether, acetone.

**Solubility:**

Soluble in cold water, hot water. Partially soluble in diethyl ether, acetone.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials, Excess heat

**Incompatibility with various substances:** Slightly reactive to reactive with oxidizing agents, metals, acids, alkalis.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:**

Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate. Glycerin may react violently with acetic anhydride, aniline and nitrobenzene, chromic oxide, lead oxide and fluorine, phosphorous triiodide, ethylene oxide and heat, silver perchlorate, sodium peroxide, sodium hydride. (Glycerin)

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

Acute oral toxicity (LD50): 190 mg/kg [Mouse]. (2-Mercaptoethanol). Acute dermal toxicity (LD50): 150 ul/kg [Rabbit]. (2-Mercaptoethanol).

**Chronic Effects on Humans:**

MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. [Sodium lauryl sulfate]. Contains material which may cause damage to the following organs: blood, kidneys, upper respiratory tract, skin, eyes, central nervous system (CNS).

**Other Toxic Effects on Humans:** Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:**

TDL (rat) - Route: Oral; Dose: 100 mg/kg 1 day prior to mating. TDL (human) - Route: Oral; Dose: 1428 mg/kg (Glycerin)

**Special Remarks on Chronic Effects on Humans:**

May cause adverse reproductive effects. May affect genetic material (mutagenic)

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: May cause skin irritation. It may be absorbed through skin. Eyes: May cause eye irritation with stinging, redness, burning sensation, and tearing. Ingestion: When large doses are ingested, it may cause gastrointestinal tract irritation with thirst (dehydration), nausea, vomiting hypermotility, diarrhea, bloating. It may affect behavior/central nervous system/nervous system (central nervous system depression, general anesthetic, headache, dizziness, confusion, tremor, excitement, muscle contraction or spasticity, insomnia, toxic psychosis, muscle weakness, ataxia, somnolence, paralysis, convulsions), respiration, urinary system/kidneys(renal failure, hemoglobinuria), cardiovascular system (cardiac arrhythmias), liver. It may also cause elevated blood sugar.

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

## Section 15: Other Regulatory Information

**Federal and State Regulations:**

Illinois toxic substances disclosure to employee act: Glycerin Rhode Island RTK hazardous substances: Glycerin Pennsylvania RTK: Glycerin; 2-Mercaptoethanol Minnesota: Glycerin; 2-Mercaptoethanol Massachusetts RTK: Glycerin; 2-Mercaptoethanol Massachusetts spill list: 2-Mercaptoethanol TSCA 8(b) inventory: Glycerin; Sodium lauryl sulfate; 2-Mercaptoethanol; Tris(hydroxymethyl)amino methane HCl; Bromophenol blue

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).

**DSCL (EEC):**

This product is not classified according to the EU regulations. Not applicable.

**HMIS (U.S.A.):**

**Health Hazard:** 1

**Fire Hazard:** 1

**Reactivity:** 0

**Personal Protection:** g

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

**Health:** 1

**Flammability:** 1

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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