

07/04/2016

### Kit Components

| Product code | Description |
|--------------|-------------|
|--------------|-------------|

|              |                                              |
|--------------|----------------------------------------------|
| <b>V8491</b> | <b>Broad Range Protein Molecular Markers</b> |
|--------------|----------------------------------------------|

Components:

|      |                                              |
|------|----------------------------------------------|
| V849 | Broad Range Protein Molecular Weight Markers |
|------|----------------------------------------------|



**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**1 Identification**

**Product identifier**

**Trade name:** Broad Range Protein Molecular Weight Markers

**Article number:** V849

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms** GHS07, GHS08

**Signal word** Warning

**Hazard-determining components of labeling:**

2-mercaptoethanol

**Hazard statements**

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**

Contaminated work clothing must not be allowed out of the workplace.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

IF ON SKIN: Wash with plenty of water.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 1)

Wash contaminated clothing before reuse.

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

Get medical advice/attention if you feel unwell.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 1

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = \*0

Fire = 1

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):**

Irritant

Sensitizer

Environmental Hazard

**Primary route(s) of entry:**

Dermal

Oral

**Target Organ(s):** Not applicable or unknown

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components:**

|         |                                           |        |
|---------|-------------------------------------------|--------|
| 56-81-5 | glycerol                                  | 5-10%  |
| 60-24-2 | 2-mercaptoethanol                         | <2.00% |
| 77-86-1 | 2-Amino-2-(hydroxymethyl)-1,3-propanediol | <2.00% |

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If the patient feels unwell or is concerned, obtain medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** Allergic reactions

(Contd. on page 3)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 2)

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters**

No special advice

In the case of fire, wear respiratory protective equipment and chemical protective suit.

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Remove persons from danger area.

Wear protective clothing.

**Environmental precautions:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7 Handling and storage

**Handling:**

**Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**Information about protection against explosions and fires:** No special measures required.

**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** None.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

(Contd. on page 4)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 3)

At this time, the remaining constituent has no known exposure limits.

|                                  |                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------|
| <b>56-81-5 glycerol</b>          |                                                                                       |
| PEL                              | Long-term value: 15* 5** mg/m <sup>3</sup><br>mist; *total dust **respirable fraction |
| TLV                              | TLV withdrawn-insufficient data human occup. exp.                                     |
| <b>60-24-2 2-mercaptoethanol</b> |                                                                                       |
| WEEL                             | Long-term value: 0.2 ppm<br>Skin                                                      |

**Additional information:** The lists that were valid during the creation were used as basis.

### Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Clean skin thoroughly immediately after handling the product.

#### Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

#### Protection of hands:

Protective gloves

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### Eye protection:

Safety glasses

Use equipment for eye protection tested and approved under government NIOSH standards.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Fluid           |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

**pH-value at 20 °C (68 °F):** 6.8

#### Change in condition

|                                     |                     |
|-------------------------------------|---------------------|
| <b>Melting point/Melting range:</b> | Undetermined.       |
| <b>Boiling point/Boiling range:</b> | Undetermined.       |
| <b>Flash point:</b>                 | > 100 °C (> 212 °F) |

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:** 400 °C (752 °F)

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 4)

|                                                 |                                               |
|-------------------------------------------------|-----------------------------------------------|
| <b>Decomposition temperature:</b>               | Not determined.                               |
| <b>Auto igniting:</b>                           | Product is not selfigniting.                  |
| <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| <b>Explosion limits:</b>                        |                                               |
| <b>Lower:</b>                                   | 0.9 Vol %                                     |
| <b>Upper:</b>                                   | 0.0 Vol %                                     |
| <b>Vapor pressure at 20 °C (68 °F):</b>         | 0.1 hPa                                       |
| <b>Density:</b>                                 | Not determined.                               |
| <b>Relative density</b>                         | Not determined.                               |
| <b>Vapor density</b>                            | Not determined.                               |
| <b>Evaporation rate</b>                         | Not determined.                               |
| <b>Solubility in / Miscibility with</b>         |                                               |
| <b>Water:</b>                                   | Fully miscible.                               |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined.                               |
| <b>Viscosity:</b>                               |                                               |
| <b>Dynamic:</b>                                 | Not determined.                               |
| <b>Kinematic:</b>                               | Not determined.                               |
| <b>Organic solvents:</b>                        | 11.4 %                                        |
| <b>Water:</b>                                   | 85.5 %                                        |
| <b>Other information</b>                        | No further relevant information available.    |

## 10 Stability and reactivity

**Reactivity** No further relevant information available.  
**Chemical stability**  
**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.  
**Possibility of hazardous reactions** No dangerous reactions known.  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:** No further relevant information available.  
**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

**60-24-2 2-mercaptoethanol**

|                    |       |                         |
|--------------------|-------|-------------------------|
| Oral               | LD50  | 244 mg/kg (Rat)         |
| Dermal             | LD50  | 150 mg/kg (Rabbit)      |
| Irritation of eyes | acute | 2 mg (Rabbit)<br>Severe |

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 5)

*Irritant***Carcinogenic categories****IARC (International Agency for Research on Cancer)***None of the ingredients are listed.***NTP (National Toxicology Program)***None of the ingredients are listed.***OSHA-Ca (Occupational Safety & Health Administration)***None of the ingredients are listed.*

## 12 Ecological information

**Toxicity***Aquatic toxicity: Not harmful to the aquatic environment**Persistence and degradability Not available***Behavior in environmental systems:***Bioaccumulative potential Not known**Mobility in soil No further relevant information available.***Ecotoxicological effects:***Remark: Harmful to fish***Additional ecological information:****General notes:***Water hazard class 1 (Self-assessment): slightly hazardous for water**Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.**Harmful to aquatic organisms***Results of PBT and vPvB assessment***PBT: Not applicable.**vPvB: Not applicable.**Other adverse effects No further relevant information available.*

## 13 Disposal considerations

**Waste treatment methods****Recommendation:***Disposal should be in accordance with applicable regional, national and local laws and regulations.**Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.***Uncleaned packagings:***Recommendation: Disposal must be made according to official regulations.**Recommended cleansing agent: Water, if necessary with cleansing agents.*

## 14 Transport information

**UN-Number***Not hazardous for transportation***DOT, ADR, ADN, IMDG, IATA***Void***UN proper shipping name***None***DOT, ADR, ADN, IMDG, IATA***Void*

(Contd. on page 7)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 6)

**Transport hazard class(es)** None

**DOT, ADR, ADN, IMDG, IATA  
Class** Void

**Packing group** None  
**DOT, ADR, IMDG, IATA** Void

**Environmental hazards:**  
**Marine pollutant:** No

**Special precautions for user** Not applicable.

**Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code** Not applicable.

**UN "Model Regulation":** Void

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

|           |                                                        |
|-----------|--------------------------------------------------------|
| 56-81-5   | glycerol                                               |
| 1185-53-1 | 2-Amino-2-(hydroxymethyl)-1,3-propanediolhydrochloride |
| 60-24-2   | 2-mercaptoethanol                                      |
| 77-86-1   | 2-Amino-2-(hydroxymethyl)-1,3-propanediol              |
| 7732-18-5 | water                                                  |

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogeny categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

(Contd. on page 8)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/04/2016

Reviewed on 07/03/2016

**Trade name: Broad Range Protein Molecular Weight Markers**

(Contd. of page 7)

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Signal word** Warning

**Hazard-determining components of labeling:**

2-mercaptoethanol

**Hazard statements**

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**

Contaminated work clothing must not be allowed out of the workplace.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

IF ON SKIN: Wash with plenty of water.

Wash contaminated clothing before reuse.

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

Get medical advice/attention if you feel unwell.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations:**

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:**

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph:(608)274-4330

**Date of preparation / last revision** 07/04/2016 / -

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Sens. 1: Skin sensitisation – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

**\* Data compared to the previous version altered.**