

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830 - United Kingdom (UK)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

| | |
|-------------------------------|---|
| Product name | Full-Range Rainbow™ Molecular Weight Markers, 250 µl |
| Catalogue Number | RPN800E |
| Product description | Not available. |
| Product type | Liquid. |
| Other means of identification | Not available. |



1.2 Relevant identified uses of the substance or mixture and uses advised against

| | Identified uses |
|---------------------|-----------------|
| Use in laboratories | |

1.3 Details of the supplier of the safety data sheet

| | | |
|-----------------|--|--|
| Supplier | GE Healthcare UK Ltd Amersham Place Little Chalfont Buckinghamshire HP7 9NA England +44 0870 606 1921 | Hours of operation 08.30 - 17.00 |
|-----------------|--|--|

Person who prepared the MSDS: msdslifesciences@ge.com

| | | |
|----------------------------|---|--|
| United Kingdom (UK) | GE Healthcare UK Ltd Amersham Place Little Chalfont Buckinghamshire HP7 9NA | 1.4 Emergency telephone number 0870 606 1921 |
|----------------------------|---|--|

National advisory body/Poison Centre

United Kingdom (UK) Health professionals should contact the National Poisons Information Service (NPIS) by telephone, or use TOXBASE www.toxbase.org.

NPIS <http://www.npis.org/> advise that others seeking specific information on poisons should contact:
In England and Wales: NHS Direct - 0845 4647 or 111
In Scotland: NHS 24 - 08454 24 24 24
In N Ireland: Contact your local GP or pharmacist during normal hours; click here (www.gpoutofhours.hscni.net/) for GP services Out-of-Hours.



SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

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

Skin Irrit. 2, H315

Eye Irrit. 2, H319

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity 5.5 percent of the mixture consists of component(s) of unknown dermal toxicity
 35.5 percent of the mixture consists of component(s) of unknown inhalation toxicity

Ingredients of unknown ecotoxicity Contains 32.5 % of components with unknown hazards to the aquatic environment

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word

Warning

Hazard statements

Causes serious eye irritation.
Causes skin irritation.**Precautionary statements**

Prevention

Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Not applicable.

Disposal

Not applicable.

Hazardous ingredients

mesna

Supplemental label elements

Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

Not applicable.

Tactile warning of danger

Not applicable.

2.3 Other hazards

Other hazards which do not result in classification None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures Mixture



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| Product/ingredient name | Identifiers | % | Classification | |
|--|--|-----|--|------|
| | | | Regulation (EC) No. 1272/2008 [CLP] | Type |
| glycerol | REACH #: 01-2119471987-18 EC: 200-289-5 CAS: 56-81-5 | 30 | Not classified. | [2] |
| sodium dodecyl sulphate | EC: 205-788-1 CAS: 151-21-3 | 3 | Flam. Sol. 2, H228 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Acute 1, H400 | [1] |
| mesna | EC: 243-285-9 CAS: 19767-45-4 | 1.5 | Skin Corr. 1B, H314 Eye Dam. 1, H318 | [1] |
| Glycine, N,N'-1, 2-ethanediybis[N- (carboxymethyl)-, sodium salt, hydrate (1:2:2) | EC: 205-358-3 CAS: 6381-92-6 | 1 | Acute Tox. 4, H302 | [1] |
| | | | See Section 16 for the full text of the H statements declared above. | |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|-----------------------------------|---|
| Eye contact | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. |
| Inhalation | If inhaled, remove to fresh air. Get medical attention if symptoms appear. |
| Skin contact | Wash with soap and water. Get medical attention if irritation develops. |
| Ingestion | Do not ingest. Get medical attention if symptoms appear. |
| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

| | |
|---------------------|--|
| Eye contact | Adverse symptoms may include the following: pain or irritation watering redness |
| Inhalation | No specific data. |
| Skin contact | Adverse symptoms may include the following: irritation redness |
| Ingestion | No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|----------------------------|---|
| Notes to physician | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | No specific treatment. |

See toxicological information (Section 11)



SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill Absorb with an inert material and place in an appropriate waste disposal container.

Large spill Absorb with an inert material and place in an appropriate waste disposal container.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations Analytical chemistry. Laboratory chemicals Research and Development



SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|-------------------------|--|
| glycerol | EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist |

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DELs available.

PNECs

No PECs available.

8.2 Exposure controls

Appropriate engineering controls Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

A respirator is not needed under normal and intended conditions of product use.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|-----------------|----------------|
| Physical state | Liquid. |
| Colour | Brownish-red. |
| Odour | Odourless. |
| Odour threshold | Not available. |



| | |
|---|--|
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | [Product does not sustain combustion.] |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | Not available. |
| Vapour pressure | Not available. |
| Vapour density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/ water | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Explosive properties | Not considered to be a product presenting a risk of explosion. |
| Oxidising properties | Not available. |

9.2 Other information

| | |
|----------------------------|-----------------|
| Burning time | Not applicable. |
| Burning rate | Not applicable. |
| Solubility in water | Not available. |

SECTION 10: Stability and reactivity

| | |
|--|--|
| 10.1 Reactivity | No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | The product is stable. |
| 10.3 Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 Conditions to avoid | No specific data. |
| 10.5 Incompatible materials | No specific data. |
| 10.6 Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-----------|---------|------------|----------|
| sodium dodecyl sulphate | LD50 Oral | Rat | 1288 mg/kg | - |
| mesna | LD50 Oral | Rat | 4440 mg/kg | - |
| Glycine, N,N'-1,2-ethanediy]bis[N-(carboxymethyl)-, sodium salt, hydrate (1:2:2) | LD50 Oral | Rat | 2000 mg/kg | - |

Conclusion/Summary Not available.

Acute toxicity estimates

| Route | ATE value |
|-------|---------------|
| Oral | 35345.8 mg/kg |

Irritation/Corrosion

Conclusion/Summary Not available.

Sensitisation

Conclusion/Summary Not available.



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Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion Irritating to mouth, throat and stomach.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation No specific data.

Ingestion No specific data.

Skin contact Adverse symptoms may include the following:
irritation
redness

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Short term exposure**

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

Conclusion/Summary

Not available.

General

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

No known significant effects or critical hazards.

Other information

Not available.



SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|---|---|--|
| sodium dodecyl sulphate | Acute EC50 1200 µg/l Marine water Acute LC50 900 µg/l Marine water Acute LC50 1400 µg/l Fresh water Acute LC50 590 µg/l Fresh water Chronic NOEC 1.25 mg/l Marine water Chronic NOEC 3.2 mg/l Fresh water Chronic NOEC >1357 µg/l Fresh water | Algae - Skeletonema costatum Crustaceans - Artemia salina - Adult Daphnia - Daphnia pulex - Neonate Fish - Cirrhinus mrigala - Larvae Algae - Ulva fasciata - Zoea Daphnia - Daphnia magna - Neonate Fish - Pimephales promelas | 96 hours 48 hours 48 hours 96 hours 96 hours 21 days 42 days |

Conclusion/Summary Not available.

12.2 Persistence and degradability

Conclusion/Summary Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|-----------------|------------------|
| sodium dodecyl sulphate | - | >60%; 28 day(s) | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| sodium dodecyl sulphate | -2.03 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

PBT Not applicable.

vPvB Not applicable.

12.6 Other adverse effects No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product**Methods of disposal**

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

Packaging**Methods of disposal**

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.



SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|--------------------------------|----------------|----------------|----------------|----------------|
| 14.1 UN number | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| 14.2 UN proper shipping name | - | - | - | - |
| 14.3 Transport hazard classes) | - | - | - | - |
| 14.4 Packing group | - | - | - | - |
| 14.5 Environmental hazards | No. | No. | No. | No. |
| Additional information | - | - | - | - |

14.6 Special precautions for user **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)Annex XIV - List of substances subject to authorisation**Annex XIV**

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air Not listed

Industrial emissions (integrated pollution prevention and control) - Water Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulationsChemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.



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Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list**Europe** All components are listed or exempted.**United States** Not determined.**Canada inventory** Not determined.**China** Not determined.**Japan** All components are listed or exempted.**15.2 Chemical safety assessment** This product contains substances for which Chemical Safety Assessments are still required.**SECTION 16: Other information**

▀ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|---|--|
| Skin Irrit. 2, H315 Eye Irrit. 2, H319 | Calculation method Calculation method |

Full text of abbreviated H statements

H228 Flammable solid.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H400 Very toxic to aquatic life.

Full text of classifications [CLP/GHS]

Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
 Aquatic Acute 1, H400 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
 Flam. Sol. 2, H228 FLAMMABLE SOLIDS - Category 2
 Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

Date of printing 21 September 2018**Date of issue/ Date of revision** 18 September 2018**Date of previous issue** 12 November 2014**Version** 5**Notice to reader**

To the best of our knowledge, the information contained 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.

