SAFETY DATA SHEET

High Rox Reference Dye

Version 1.0
Revision Date 09/17/2020
Print Date 05/03/2021

SECTION 1. IDENTIFICATION

Product name: High Rox Reference Dye

Manufacturer or supplier's details

Company: QIAGEN Beverly, Inc.
100 Cummings Center
Suite 407J
Beverly, MA 01915
USA

Telephone: +1 800 364-2149

Responsible Department:

E-mail address: cpc@qiagen.com

Emergency telephone: CHEMTREC
USA & Canada 1-800-424-9300

Recommended use of the chemical and restrictions on use

Recommended use: Laboratory chemicals

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids: Category 4
Skin irritation: Category 2
Serious eye damage: Category 1

GHS Label element

Hazard pictograms:

Signal Word: Danger

Hazard Statements:
H227 Combustible liquid.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary Statements:

Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with


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water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance name</td>
<td>High Rox Reference Dye</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>hexamethylenediamine</td>
<td>124-09-4</td>
<td>&gt;= 1 - &lt; 10</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye.

If swallowed: If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Causes skin irritation. Causes serious eye damage. No information available.

Notes to physician: No information available.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses. Exposure to decomposition products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Sulfur oxides
Nitrogen oxides (NOx)
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Specific extinguishing methods: In the event of fire and/or explosion do not breathe fumes. Use a water spray to cool fully closed containers.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Environmental precautions: Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling: Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>TWA</td>
<td>250 ppm</td>
<td>US WEEL</td>
</tr>
<tr>
<td>hexamethylenediamine</td>
<td>124-09-4</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td>US WEEL</td>
</tr>
</tbody>
</table>

Personal protective equipment
Hand protection

Material: Protective gloves
Remarks: The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection: Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
Do not wear contact lenses.
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
acid-resistant protective clothing
Footwear protecting against chemicals

Hygiene measures: Keep away from food and drink.
Wash hands before breaks and at the end of workday.
Ensure adequate ventilation, especially in confined areas.
Avoid contact with the skin and the eyes.
When using do not eat, drink or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: No data available
Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting point/range: No data available
Boiling point/boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Burning rate: No data available
Upper explosion limit: No data available
Lower explosion limit: No data available
Vapor pressure: No data available
Relative vapor density: No data available
Relative density: No data available
Density: No data available
Solubility(ies)
Water solubility: soluble
Solubility in other solvents: No data available
PARTITION COEFFICIENT: n-octanol/water: No data available
Autoignition temperature: No data available
Decomposition temperature: No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity: No decomposition if stored and applied as directed.
Chemical stability: No decomposition if stored and applied as directed.
Possibility of hazardous reactions: Stable under recommended storage conditions.
Hazardous decomposition products formed under fire conditions.
Vapors may form explosive mixture with air.
Keep away from oxidizing agents, and acidic or alkaline products.

Conditions to avoid: Heat, flames and sparks.
Incompatible materials: No data available
Hazardous decomposition products: No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION
Acute toxicity:
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity: No data available
Acute dermal toxicity: No data available

Ingredients:
dimethyl sulfoxide:
Acute oral toxicity: LD50 Oral (Rat): 14,500 mg/kg

Acute inhalation toxicity: LC50 (Rat): 40,250 mg/l, 40250 ppm
Exposure time: 4 h

Acute dermal toxicity: LD50 Dermal (Rabbit): > 5,000 mg/kg
hexamethylenediamine:
Acute oral toxicity: LD50 Oral (Rat): 750 mg/kg
Acute dermal toxicity: LD50 Dermal (Rabbit): 1,110 mg/kg

Skin corrosion/irritation
Causes skin irritation.

**Product:**
Remarks:
May irritate skin.
The product may be absorbed through the skin.

Serious eye damage/eye irritation
Causes serious eye damage.

**Product:**
Remarks:
May cause irreversible eye damage.

Respiratory or skin sensitization
Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information
No data available
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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

**Product:**
Toxicity to fish : No data available
Toxicity to algae : No data available
Toxicity to bacteria : No data available

**Ingredients:**
**dimethyl sulfoxide:**
Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 34,000 mg/l
Exposure time: 96 h
LC50 (Oncorhynchus mykiss (rainbow trout)): 35,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates
**hexamethylenediamine:**
Toxicity to fish : EC50 (Daphnia pulex (Water flea)): 27,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23.4 mg/l
Exposure time: 48 h

**Persistence and degradability**
No data available

**Bioaccumulative potential**

**Product:**
Bioaccumulation : No data available

**Mobility in soil**
No data available

**Other adverse effects**

**Product:**
Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Additional ecological information : No data available
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations.
Contaminated packaging: Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No data available

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards
Fire Hazard
Acute Health Hazard

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

Revision Date : 09/17/2020

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