

Material Safety Data Sheet

Printing date 10/28/2008

Reviewed on 08/21/2008

1 Identification of substance:

- **Product details:**
- **Trade name:** Dithiothreitol (DTT)
- **Catalog or product number:** 1610610, 1610611, 1610610EDU, 1610611EDU, 10005243, 10005526
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**
Bio-Rad Laboratories, Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547 (510)741-1000
- **Information department:** Technical services, customer support.
- **Emergency information:**
1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.
510-741-1000

2 Composition/Information on components:

- **Chemical characterization:**
- **CAS No. Description:**
27565-41-9 (R*,R*)-(±)-1,4-dimercaptobutane-2,3-diol
- **Identification number(s):**
- **EINECS Number:** 248-531-9
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

- **Emergency overview:**
Irritant to skin.
Xn Harmful
- **Routes of exposure:**
Ingestion
Inhalation
Skin
- **Information pertaining to particular dangers for man and environment**
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- **Classification system**
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **GHS label elements**
Exclamation mark **Warning**
3.1/4 - Harmful if swallowed.
3.1/4 - Harmful in contact with skin.
3.1/4 - Harmful if inhaled.
- **Prevention:**
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
- **Response:**
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.

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IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific measures (see label).

Rinse mouth.

Wash contaminated clothing before reuse.

• **Disposal:**

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

4 First aid measures

• **General information**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

• **After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

• **After skin contact** *Generally the product does not irritate the skin.*

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

• **After swallowing** *Immediately call a doctor.*

• **Information for doctor**

• **The following symptoms may occur:** *Breathing difficulty*

5 Fire fighting measures

• **Suitable extinguishing agents** *Use fire fighting measures that suit the environment.*

• **Protective equipment:** *Mount respiratory protective device.*

6 Accidental release measures

• **Person-related safety precautions:** *Not required*

• **Measures for environmental protection:** *No special measures required.*

• **Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

7 Handling and storage

• **Handling**

• **Information for safe handling:**

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

No special precautions are necessary if used correctly.

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

• **Storage**

• **Requirements to be met by storerooms and receptacles:** *According to product specification*

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

• **Further information about storage conditions:** *Keep receptacle tightly sealed.*

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* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **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.
- **Material of gloves:** Synthetic gloves
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

* 9 Physical and chemical properties:

• General Information

Form:	Solid.
Color:	Whitish
Odor:	Sulphurous

• Change in condition

Melting point/Melting range:	42-44°C
Boiling point/Boiling range:	undetermined

Flash point:	> 100°C
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Flammability (solid, gaseous)	Product is not flammable.
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Danger of explosion:	Product does not present an explosion hazard.
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Density:	Not determined
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• Solubility in / Miscibility with

Water:	Fully miscible
Organic solvents:	0.0 %

Solids content:	100.0 %
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10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions:** No dangerous reactions known

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· **Dangerous products of decomposition:** No dangerous decomposition products known

* 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Target organs:**
Skin.
Respiratory tract.

* 13 Disposal considerations

- **Product:**
- **Recommendation**
Hand over to hazardous waste disposers.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **UN "Model Regulation":** -

* 15 Regulations

- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

- **Section 302/304 (40CFR355.30 / 40CFR355.40):**

Substance not listed.

- **Section 313 (40CFR372.65):**

Substance is not listed.

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

Substance is listed.

• **Carcinogenicity categories**• **EPA (Environmental Protection Agency)**

Substance is not listed.

• **IARC (International Agency for Research on Cancer)**

Substance is not listed.

• **NTP (National Toxicology Program)**

Substance is not listed.

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

Substance is not listed.

• **MAK (German Maximum Workplace Concentration)**

Substance is not listed.

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

Substance is not listed.

• **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

• **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

• **Code letter and hazard designation of product:**

Xn Harmful

• **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

• **Safety phrases:**

60 This material and its container must be disposed of as hazardous waste.

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 MSDS:** Environmental Health and Safety.• **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

• **Abbreviations and acronyms:**

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

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

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

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

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