1 Identification

- **Product identifier**
- **Trade name:** Dithiothreitol (DTT)
- **Catalog or product number:** 1610610, 1610611, 1610610EDU, 1610611EDU
- **CAS Number:** 27565-41-9
- **EC number:** 248-531-9
- **Application of the substance / the mixture** Laboratory chemicals

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Acute Tox. 4 H312 Harmful in contact with skin.
  - Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements**
  - **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  - (R*,R*)-(±)-1,4-dimercaptobutane-2,3-diol

- **Hazard statements**
  - H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P280 Wear protective gloves / protective clothing.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P361 Take off immediately all contaminated clothing.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:** Contact with acids may cause release of toxic gases
### Trade name: Dithiothreitol (DTT)

- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

### 3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description:
  - 27565-41-9 (R*,R*)-(±)-1,4-dimercaptobutane-2,3-diol
- Identification number(s):
- EC number: 248-531-9
- 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 Supply fresh air; consult doctor in case of complaints.
- After eye contact Rinse opened eye for several minutes under running water.
- After swallowing Induce vomiting and call for medical help.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

### 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.

### 6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up: Pick up mechanically.
- Reference to other sections
  - See Section 7 for information on safe handling
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

  - **PAC-1:**
    - Substance is not listed.

  - **PAC-2:**
    - Substance is not listed.
# Safety Data Sheet

**Trade name: Dithiothreitol (DTT)**

<table>
<thead>
<tr>
<th>PAC-3:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

## 7 Handling and storage

- **Handling**
- **Precautions for safe handling**: No special precautions are necessary if used correctly.
- **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**: According to product specification.
- **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

- **Additional information about design of technical systems**: No further data; see item 7.
- **Control parameters**
- **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.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**: Wash hands before breaks and at the end of work.
- **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

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance**
  - **Form**: Solid
  - **Color**: Whitish
  - **Odor**: Sulphurous
  - **Odor threshold**: Not determined.
- **pH-value**: Not applicable.
- **Change in condition**
  - **Melting point/Melting range**: 42-44 °C
  - **Boiling point/Boiling range**: Undetermined.
Trade name: Dithiothreitol (DTT)

- Flash point: 110 °C
- Flammability (solid, gaseous): Product is not flammable.
- Ignition temperature:
  - Decomposition temperature: Not determined.
- Auto igniting: Not determined.
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapor pressure: Not applicable.
- Density: Not determined
- Relative density: Not determined.
- Vapor density: Not applicable.
- Evaporation rate: Not applicable.
- Solubility in / Miscibility with Water: Soluble
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - dynamic: Not applicable.
  - kinematic: Not applicable.
  - Organic solvents: 0.0 %
- Other information: 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:
  - Primary irritant effect:
    - on the skin: No irritant effect.
    - on the eye: No irritant effect.
  - Sensitization: No sensitizing effects known.
Trade name: Dithiothreitol (DTT)

- Additional toxicological information:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      Substance is not listed.
    - NTP (National Toxicology Program)
      Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (German Regulation) (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.
- 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: Dispose of waste in accordance to applicable national, regional, or local regulations.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, ADR, ADN, IMDG, IATA: Void
- UN proper shipping name
  - DOT, ADR, ADN, IMDG, IATA: Void
- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA
  - Class: Void
Trade name: Dithiothreitol (DTT)

- Packing group
  - DOT, ADR, IMDG, IATA: Void
- Environmental hazards: Not applicable.
- 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 (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.
  - TSCA (Toxic Substances Control Act):
    Substance is not listed.
- Carcinogenic categories
- EPA (Environmental Protection Agency)
  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.
- 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: Environmental Health and Safety.
- Contact: US
**Trade name: Dithiothreitol (DTT)**

**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)
- 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
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- 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
- Acute Tox. 4: Acute toxicity – Category 4

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Contact information:
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