

## SAFETY DATA SHEET

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### Article 1 – Product Identification

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**Product Name:** DTT, DL-Dithiothreitol

**Catalog #** DT01-Q29A

*This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.*

|                          |                                                                  |
|--------------------------|------------------------------------------------------------------|
| Supplier of Datasheet:   | SignalChem Diagnostics Inc.                                      |
| Street Address:          | 190-13160 Vanier Place                                           |
| City, Prov. Postal Code: | Richmond, BC, V6V 2J2                                            |
| Country:                 | Canada                                                           |
| Phone Number:            | 1-888-606-3424 (Toll-free)<br>1-778-326-0223 (local)             |
| Emergency Phone Number:  | In case of an emergency contact your local poison control center |
| Canada:                  | 1-844-764-7669                                                   |
| USA:                     | 1-800-222-1222                                                   |

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### Article 2 – Hazard Identification

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- **GHS classification:**

Acute toxicity, Oral (Category 4), H302  
Skin corrosion/irritation (Category 2), H315  
Serious eye damage/eye irritation (Category 1), H318  
Short-term (acute) aquatic hazard (Category 3), H402



- **Hazard Pictograms:**

- **Signal words:** Danger.

- **Hazard statements:**

H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H318: Causes serious eye damage.  
H402: Harmful to aquatic life.

- **Precautionary statements:**

P264: Wash skin thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P273: Avoid release to the environment.  
P280: Wear protective gloves/eye protection/face protection.

- **Response:**

P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P302 + P352: IF ON SKIN: Wash with plenty of water.  
P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
P332 + P313: If skin irritation occurs: Get medical advice/attention.  
P362 + P364: Take off contaminated clothing and wash it before reuse.

- **Disposal:**

P501: Dispose of contents/container to an approved waste disposal facility.

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### Article 3 – Composition/Information on Ingredients

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Chemical Characterization: Substance.

| Common name | Chemical name                       | CAS-No.   | Concentration (w/v) |
|-------------|-------------------------------------|-----------|---------------------|
| DTT         | threo-1,4-Dimercapto-2,3-butanediol | 3483-12-3 | ≤100%               |

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### Article 4 – First-aid Measures

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- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** In case of irritation by inhaling this product, move the affected person to fresh air and await recovery. If irritation persists, seek immediate medical attention. If the casualty cannot breathe, give artificial respiration and seek immediate medical attention.
- **After skin contact:** Rinse with plenty of water for at least 15 minutes. Consult a physician if any reaction occurs.
- **After eye contact:** Rinse open eyes with plenty of water for at least 15 minutes. Consult a physician.
- **After swallowing:** Rinse the mouth with plenty of water, drink up to 2 glasses of water, and consult a physician.

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### Article 5 – Fire-fighting Measures

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- **Suitable extinguishing media:** Use water spray, carbon dioxide, extinguishing powder or foam.
- **Unsuitable extinguishing media:** No information available.
- **Specific hazards arising from the substance or mixture:** Carbon oxides, Sulfur oxides, Combustible, Development of hazardous combustion gases or vapours possible in the event of fire.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary. Suppress gases/vapors/mist with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### Article 6 – Accidental Release Measures

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- **Personal precautions, protective equipment, and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, mist, dust, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Absorb via sand or vermiculite and place in closed containers for disposal.

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### Article 7 – Handling and Storage

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- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, and contact with eyes, skin, or clothing.
- **Conditions for safe storage:** Store according to product label instructions. Keep the container upright and tightly closed in a cool, dry well-ventilated place.
- **Storage class:** 11; Combustible Solids; TRGS 510

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### Article 8 – Exposure Controls/Personal Protection

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- **Components with limit monitoring values at workplace:** N/A
- **Appropriate engineering controls:**

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Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.

- Individual protection measures:**

**Respiratory protection:**

If ventilation is inadequate, use respirators and components that are tested and certified in compliance with applicable government standards.

**Hand protection:**

Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.

**Eye/face protection:**

Safety goggles with side-shields tested and certified in compliance with applicable government standards.

**Skin/body protection:**

Use appropriate clothing, footwear and any additional protection measures to protect from splashes or contamination.

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### Article 9 – Physical and Chemical Properties

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|--------------------------------------------------------------|-------------------------------------------------------------------|
| <b>Physical state:</b> Powder.                               | <b>Color:</b> White.                                              |
| <b>Odour/Odour Threshold:</b> Unpleasant.                    | <b>Particle characteristics:</b> Not determined.                  |
| <b>Melting point/freezing point:</b> 41-44 °C.               | <b>pH:</b> Not applicable.                                        |
| <b>Boiling point/Boiling range:</b> 270-272 °C at 1,013 hPa. | <b>Viscosity:</b> Not applicable.                                 |
| <b>Flammability (solid, gaseous):</b> Not determined.        | <b>Solubility:</b> Not determined.                                |
| <b>Explosion/Flammability limits:</b> Not applicable.        | <b>Partition coefficient n-octanol/water:</b> Not determined.     |
| <b>Flash point:</b> Not determined.                          | <b>Vapor pressure at 25 °C:</b> <0.1 hPa.                         |
| <b>Auto-Ignition temperature:</b> Not applicable.            | <b>Density/relative density:</b> 1.377 g/cm <sup>3</sup> at 20°C. |
| <b>Decomposition temperature:</b> Not determined.            | <b>Relative vapor density:</b> Not applicable.                    |

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### Article 10 – Stability and Reactivity

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- Reactivity:** Stable under recommended transport and storage conditions.
- Chemical stability:** Stable under recommended transport and storage conditions.
- Possible hazardous reactions:** No dangerous reactions known.
- Conditions to avoid:** Heat and moisture.
- Incompatible materials:** Strong acids/bases, strong oxidizing/reducing agents.
- Hazardous decomposition products:** Carbon oxides may be formed under fire conditions; no known decomposition information for other decomposition products.

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### Article 11 – Toxicological Information

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- Acute toxicity:**
- LD/LC50:** 300 - 2,000 mg/kg (female rat test – OECD guideline 423).
- Skin corrosion/irritation:** Skin irritation in 1hr (human skin – OECD guideline 439).
- Serious eye damage/eye irritation:** Causes serious eye damage.
- Respiratory or skin sensitization:** Negative (mouse local lymph node assay – OECD guideline 429).
- Germ cell mutagenicity:** Negative Ames test (S. typhimurium, with and without metabolic activation – OECD guideline 471).
- Carcinogenicity:** Not available.
- Reproductive toxicity:** Not available.
- Teratogenicity:** Not available.
- Specific target organ toxicity – single exposure/ – repeated exposure (GHS):** Not available.
- Aspiration hazard:** Not available.

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- **Potential routes of exposure:**  
**Inhalation:** Not available.  
**Ingestion:** Not available.  
**Skin:** 1 hr (human skin test – OECD guideline 439).  
**Eyes:** Causes serious eye damage.
- **Signs and Symptoms of Exposure:** Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
Liver – Irregularities – Based on Human Evidence
- **Synergistic effects:** Not available.
- **Additional Information:** RTECS: EK1610000:

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### Article 12 – Ecological Information

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- **Eco-toxicity:**  
Toxicity to daphnia and other aquatic invertebrates. Static test EC50 with *Daphnia magna*; 34.8mg/L for 48hrs.  
Toxicity to algae. Static test ErC50 with *Pseudokirchneriella subcapitata*; 24.3 mg/L for 72hrs.
- **Biodegradability:** Aerobic 50%; not readily biodegradable (exposure time 43d).
- **Bio-accumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **PBT and vPvB assessment:** No data available.
- **Other adverse effects:** No data available.

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### Article 13 – Disposal Considerations

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- **Disposal methods:** Dispose in accordance with applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Dispose in accordance with applicable national, regional, or local laws and regulations. Use water or cleansing agents to clean the area.

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### Article 14 – Transport Information

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- **DOT:** Classified as dangerous goods.
- **IMDG:** Classified as dangerous goods.
- **IATA:** Classified as dangerous goods.
- **UN number:** 3335
- **UN proper shipping name:** Aviation regulated solid, n.o.s. ((R\*,R\*)-1,4-Dimercapto-2,3-butanediol).
- **Transport hazard class:** IATA-DGR: 9.
- **Packing group:** IATA-DGR: III.
- **Environmental hazards:** Not applicable.
- **Transport in bulk according to IMO instruments:** Not applicable.
- **Special precautions for user:** Not applicable.

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### Article 15 – Regulatory Information

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- **Canada Federal Regulations:** This product has been classified in accordance with the hazard criteria of the Hazardous products Regulations (HPR) and the SDS contains all the information required by the HPR.

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- **Local / National Regulations:** Downstream users need to comply with the conditions of safe use of the chemical, understand the environmental and health hazard and risk management measures identified on the SDS as well as the local/national regulations concerning the chemical.
- **Listed in Substances Inventories:**
  - Canada Domestic Substances List (DSL): CEPA 1999 Schedule 1 - List of Toxic Substances
  - China Inventory of Existing Chemical Substances (IECSC)
  - China, Taiwan Chemical Substance Inventory (TCSI)
  - EU EINECS/ELINCS/NLP
  - EU REACH Registered Substances
  - U.S. TSCA Chemical Substance Inventory
  - Philippine Inventory of Chemicals and Chemical Substances (PICCS)
  - New Zealand Inventory of Chemicals (NZIoC)
  - Australian Inventory of Industrial Chemicals (AIIC)
- **Other Regulations:** Please pay attention to the waste treatment; it should also comply with local regulation requirements.

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### Article 16 - Other Information

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- **Version #:** 1.0
- **Issued date:** 2025-05-27

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.