UN GHS REVISION 7

Safety Data Sheet
Dithiothreitol (D.T.T.) 99% Extrapure

Version 1.0, Date of issue: 2026-08-18

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Dithiothreitol (D.T.T.) 99% Extrapure
Product number	01089 00005
Brand	Chemnovo

1.3 Recommended use of the chemical and restrictions on use

Laboratory reagent

1.4 Supplier's details

Name	Hurst Scientific
Address	2 Transit Place, 6112 Forrestdale WA, Australia
Telephone	1300 778 068
email	sales@hurstscientific.com.au

1.5 Emergency phone number

Australian Poisons Information Centre 13 11 26
Australian Emergency Services 000

SECTION 2: Hazard identification

General hazard statement

Classified as a Hazardous substance according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Classified as NON-Dangerous goods according to the ADG Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute Toxicity (Oral), Cat. 4
- Serious Eye Damage/Irritation, Cat. 2A
- Skin Corrosion/Irritation, Cat. 2
- STOT – Single Exposure (respiratory irritation), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictograms

1. Exclamation mark

Signal word

Warning

Hazard statement(s)

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P321	Specific treatment (see supplemental first-aid instructions on this label).
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing. And wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

2.3 Other hazards

No information available on PBT / vPvB status or endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1 Substances

Hazardous components

Component	Concentration
Dithiothreitol (CAS: 3483-12-3)	**≥ 99 – < 100%**
CLASSIFICATIONS: Acute Toxicity (Oral), Cat. 4; Skin Corrosion/Irritation, Cat. 2; Serious Eye Damage/Irritation, Cat. 1; STOT – Single Exposure (respiratory irritation), Cat. 3; Hazardous to the Aquatic Environment (Chronic), Cat. 3. **HAZARDS:** H302 - Harmful if swallowed; H315 - Causes skin irritation; H318 - Causes serious eye damage; H335 - May cause respiratory irritation; H412 - Harmful to aquatic life with long lasting effects.	

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

Eye contact

Flush eyes with copious amounts of water for at least 15 minutes. If irritation develops or persists, seek medical attention.

Skin contact

Remove contaminated clothing and wash affected area with soap and water thoroughly. If irritation develops, seek medical attention.

Inhalation

Evacuate to fresh air immediately. If unconscious, place in recovery position and provide artificial respiration if breathing ceases. Seek medical attention.

Ingestion

DO NOT induce vomiting. Wash mouth out with copious amounts of water and seek medical attention.

First-aid facilities

Eye wash station, safety shower and First Aid kit.

4.2 Most important symptoms and effects, both acute and delayed

The most important symptoms and effects are described in Section 2 (hazard statements) and Section 11 (toxicological information).

4.3 Indication of immediate medical attention and special treatment needed

Treat symptomatically. For advice, contact the Poisons Information Centre (Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use an extinguishing medium suitable for the surrounding fire and other material involved. Water spray, dry chemical powder, carbon dioxide or foam. Do not scatter spilled material with high-pressure water streams.

5.2 Specific hazards arising from the chemical

Combustion may produce toxic and irritating gases.

5.3 Special protective actions for fire-fighters

Fire fighters should wear self-contained breathing apparatus (SCBA) operated in positive-pressure mode and full protective clothing. Fight the fire from a safe location.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid contact with skin and eyes. Wear suitable protective equipment (see Section 8). Evacuate non-essential personnel from the area. Avoid generating and breathing dust.

6.2 Environmental precautions

Prevent the spill from entering drains, sewers and waterways. In the event of a major spill, contain the material and notify the relevant authorities.

6.3 Methods and materials for containment and cleaning up

Contain the spill and prevent further release. Sweep or vacuum the spilled material using clean, non-sparking tools, avoiding dust generation. Place the collected solid into a labelled, sealable container for disposal. Ventilate the area.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Prevent dispersion of dust. Use local exhaust ventilation where dust or aerosol may be generated.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep containers tightly closed and upright when not in use. Store away from incompatible materials (see Section 10). Inspect containers regularly for damage or leaks.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Dithiothreitol (CAS: 3483-12-3)
AU/SWA (AU): No occupational exposure limit established.

8.2 Appropriate engineering controls

Ensure an adequate ventilation or exhaust system is in place.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standard AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand protection

Use occupational protective gloves complying with AS 2161 (Selection, Use and Maintenance).

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable particulate filter should be used. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	White powder
Colour	No data available
Odour	Unpleasant odour
Odour threshold	No data available
Melting point/freezing point	41 - 44 °C
Boiling point or initial boiling point and boiling range	BP: 115-116 °C at 0.1 kPa
Flammability	No data available
Lower and upper explosion limit/flammability limit	No data available
Flash point	113 °C
Explosive properties	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Oxidising properties	No data available
pH	4 - 6 at 15.4 g/l at 25 °C
Kinematic viscosity	No data available
Solubility	Water: 15.4 g/l at 20 °C
Partition coefficient n-octanol/water (log value)	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Density and/or relative density	1 g/cm³
Relative vapour density	No data available
Particle characteristics	No data available
Supplemental information regarding physical hazard classes	No data available
Further safety characteristics (supplemental)	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions of storage and handling.

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

None under normal use conditions.

10.4 Conditions to avoid

Direct sunlight. Air contact. Moisture.

10.5 Incompatible materials

Oxidising agent.

10.6 Hazardous decomposition products

No data available.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Harmful if swallowed.

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory or skin sensitisation
Not expected to be a respiratory or skin sensitiser.

Germ cell mutagenicity
Not considered to be a mutagenic hazard.

Carcinogenicity
Not considered to be a carcinogenic hazard.

Reproductive toxicity
Not considered to be toxic to reproduction.

Specific target organ toxicity (STOT) - single exposure
May cause respiratory irritation.

Specific target organ toxicity (STOT) - repeated exposure
Not expected to cause toxicity to a specific target organ through repeated exposure.

Aspiration hazard
Not expected to be an aspiration hazard.

SECTION 12: Ecological information

Toxicity
LC50; Species: Daphnia magna (Water flea) age <24 hr; Conditions: freshwater, static, 20 °C, pH 8.2, hardness 250 mg/L CaCO3, dissolved oxygen >6.5 mg/L; Concentration: 27000 µg/L for 48 hr (95% confidence interval: 24000-30000 µg/L)

Persistence and degradability
No data available

Bioaccumulative potential
An estimated BCF of 3 was calculated in fish for 1,4-dithiothreitol, using an estimated log Kow of -0.48 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low

Mobility in soil
No data available

Results of PBT and vPvB assessment
No data available

Endocrine disrupting properties
No data available

Other adverse effects
No data available

SECTION 13: Disposal considerations

Product disposal

Dispose of in accordance with local authority guidelines.

Packaging disposal

Dispose of in accordance with local authority guidelines.

Waste treatment

Dispose of in accordance with local authority guidelines.

Sewage disposal

Do not contaminate drains and waterways.

Other disposal recommendations

Nil.

SECTION 14: Transport information

ADG (Australian Dangerous Goods Code, 7th Edition)

Not classified as dangerous goods according to the ADG Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).

IMDG (International Maritime Dangerous Goods Code)

Not classified as dangerous goods according to the IMDG Code.

IATA (International Air Transport Association Dangerous Goods Regulations)

Not classified as dangerous goods according to the IATA Dangerous Goods Regulations.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Dithiothreitol (CAS: 3483-12-3)

Australia SUSMP — Poison Schedule: Not Scheduled (NS)

15.2 Chemical safety assessment

No chemical safety assessment has been carried out for this product.

SECTION 16: Other information

16.1 Further information/disclaimer

References

1. Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (June 2023).
2. Safe Work Australia, National Code of Practice for the Labelling of Workplace Hazardous Chemicals (2015).
3. Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2013).
4. National Transport Commission Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code), Volume 1, Edition 7.9 (2023).
5. Standards Australia, Dangerous Goods Initial Emergency Response Guide: Australian Handbook (SAA/SNZ HB76); Homebush (2004).

16.2 Preparation information

This SDS is prepared in accordance with the Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (June 2023). The information contained within is believed to be accurate at the date of preparation/review. Hurst Scientific makes no claims of the accuracy or completeness of the information and excludes all liability for any loss or damage related to the supply or use of the information in this safety data sheet. It is recommended the user make their own determinations as to the suitability of the information provided to the application in which the product is to be used. Copyright © 2026 Hurst Scientific