



Chemicals Corp.

Technical Data Sheet

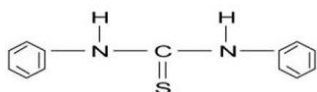
DPTU

N,N'-Diphenylthiourea

CAS Number: 102-08-9

Molecular weight: 228.31

Molecular formula: C₁₃H₁₂N₂S



PRODUCT INFORMATION

PRODUCT SPECIFICATIONS		OIL POWDER	POWDER
Appearance		White oil powder	White powder
Initial Melting Point	°C min	148.0	148.0
Loss on drying	% max	0.30	0.40
Ash	% max	0.30	0.40
Residue on sieve (63µm)	% max	0.50	0.50
Residue on sieve (150µm)	% max	0.10	0.10
Oil content	%	0.0-2.0	-
<u>Typical properties</u>			
Density	g/cm ³	1.32	
<u>Packaging</u>			
Bag		25kg (55 lbs)	
Pallet		500kg or 600kg (1102 lbs or 1323 lbs)	

FUNCTION

DPTU functions as a medium speed vulcanization accelerator.

APPLICATIONS AND PROPERTIES

- DPTU synergizes with a sulphur donor to boost vulcanization when used in NR and SBR.
- Product needs zinc oxide to be effective.
- Used as a secondary accelerator in CR and EPDR vulcanization systems.
- Used in latex products, cables and general industrial products.
- DPTU has a critical temperature of 80°C, so could be used as raw material for pharmaceuticals and dyes and a test reagent for Os and Rh.
- Product has a bitter taste and is non-poisonous.
- Flammable.
- Soluble in alcohol, diethyl ether, acetone, cyclohexanone and tetrahydrofuran. Soluble in alkali solutions and precipitate from acid solutions.
- Partly soluble in all PVC plasticizers and insoluble in water and CS₂.
- DPTU is regulated for use under the following sections of FDA 21 CFR:
 - 175.300 - Resinous and Polymeric Coatings.
 - 177.1210 - Closures with Sealing Gaskets for Food Containers.
 - 177.2600 – Rubber Articles Intended for Repeated Use in Food Contact.

STORAGE

Material should be stored in a cool, dry, well ventilated area, away from high temperatures. The maximum recommended storage life is 1 year when stored under normal conditions.

HANDLING PRECAUTIONS

For detailed information on toxicological properties and handling precautions, please refer to the current Safety Data Sheet. This information is available by request from **SunBoss Chemicals Corp.**

[Revised: November 6, 2014 by kk]

Safety Data Sheet

DPTU

1. IDENTIFICATION OF SUBSTANCE / COMPANY INFORMATION

Chemical Name	N,N-Diphenylthiourea
Synonyms	DPTU, CA
CAS #	102-08-9
Formula	C ₁₃ H ₁₂ N ₂ S
Chemical Family	Accelerator
Supplier	SunBoss Chemicals Corp.
Address	8-110 West Beaver Creek Road Richmond Hill, ON L4B 1J9
Telephone	905-707-3433
Fax	905-707-7393

Emergency Information After normal hours call Chemtrec at 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS - No</u>	<u>Weight %</u>	<u>EC No.</u>
N,N-Diphenylthiourea	102-08-9	98	203-004-2
	<u>Symbol(s)</u>	<u>Risk Phrase(s)</u>	
	T, Xn	R24/25	

3. HEALTH HAZARDS INFORMATION

EMERGENCY OVERVIEW

Signal Word: DANGER!
TOXIC IF SWALLOWED!
Toxic in contact with skin.
Inhalation hazard.
Skin, eye and respiratory tract irritant.

Potential Health Effects

Inhalation	Inhalation may cause upper respiratory irritation and nasal congestion and soreness. Coughing may also occur.
Ingestion	Toxic if ingested.
Skin contact	May cause an allergic reaction or redness and drying of the skin.

Eye Contact Moderate eye irritant - Sign and symptoms: redness, tearing and swelling.

4. EMERGENCY FIRST AID PROCEDURES

Inhalation	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	If victim is conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Get medical aid immediately.
Skin	Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Eyes	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Note to Physician	If victim has blue lips, finger nails or ear lobes, administer oxygen therapy immediately. Monitor circulation. Possible shock treatment. Medical supervision for at least 48 hours.

5. FIRE AND EXPLOSION HAZARD MEASURES

Flammability	Not determined
Flash Point	Not determined
Flash Point Method	Not determined
DOT Category	UN 2811, Toxic Solid, Organic, N.O.S., (N,N-Diphenylthiourea) 6.1, PG II
Extinguishing Media	Sprayed water jet, foam, dry powder.
Auto Ignition Temperature	Not determined
Flammable Limits	Not determined
Special Fire Fighting Procedures	As in any fire, wear a self-contained breathing apparatus in pressure demand. MSHA/NIOSH (approved or equivalent) and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Fire may cause evolution of nitrogen and sulphur oxides.
Special Protective Equipment	Fire fighters should wear full protective clothing, including self-contained breathing equipment. In order to avoid contact with skin, keep a safe distance. Prevent fire-fighting water from entering surface or ground water. Contain vapours with water.
Unusual Fire and Explosion Hazards	None.

6. ACCIDENTAL RELEASE MEASURES

Procedures	Avoid contact with skin and eyes and inhalation of dust. Prevent entry into drains, waters or soils.
Clean up Methods	Clean up spills immediately, fill into labelled, closable containers, observing precautions in the Protective Equipment section.

7. HANDLING AND STORAGE

Handling	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.
Storage	Store in a cool, dry place. Keep away from strong acids and oxidizing agents. Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels. During processing, ensure efficient exhaust ventilation in the working area. Take precautionary measures against static discharges. Remove sources of ignition. Do not smoke.
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Exposure Limits
N,N-Diphenylthiourea

ACGIH TLV
Not available

OSHA PEL
Not available



Respiratory	Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.
Eyes	Wear chemical goggles.
Skin	Wear appropriate protective clothing to minimize contact with skin.
Gloves	Wear appropriate protective gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder
Odour	Nearly odourless
Specific Gravity	Not applicable
Density	1.32 g/cm ³ at 20°C
Bulk Density	400 g/cm ³
Solubility in water	INSOLUBLE
pH	Not applicable
Other Solubility	Alcohol, diethyl ether, acetone, cyclohexanone and tetrahydrofuran.
Boiling point	Not applicable

Melting Point	148°C
Molecular Weight	228.31
Molecular Formula	C ₁₃ H ₁₂ N ₂ S

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperatures and pressures.
Conditions to avoid	Strong oxidants.
Incompatibility	No data available
Hazardous Polymerization	Does not occur
Hazardous Decomposition Products	In case of spontaneous decomposition or in fire situations volatile, explosive and noxious decomposition products will be generated; oxides of nitrogen, carbon and sulphur.
Additional Guidelines	In the case of dusty organic products the possibility of a dust explosion should always be considered.

11. TOXICOLOGICAL INFORMATION

Acute oral LD 50 (mg/kg)	2000 mg/kg
Acute Dermal LD 50 (mg/kg)	2000 mg/kg
Acute Inhalation LC50 (mg/l)	18.9 mg/l
Principle routes of Exposure	Inhalation, ingestion, dermal, eyes
Ingestion	Toxic if ingested
Skin contact	May cause an allergic reaction or redness and drying of the skin.
Eye Contact	Moderate eye irritant - Sign and symptoms: redness, tearing and swelling.
Aggravated Conditions	Not determined
Carcinogenicity	Not determined
Primary Irritation Effect	Not determined
Genotoxicity	Not determined
Reproductive/Developmental Toxicity	Not determined

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity	Not determined
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Acute Crustacean Toxicity	Not determined
Octonal/Water Coefficient	Not determined
Chemical Fate Information	Not determined
Other Information	None

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Dispose of in a manner consistent with federal, state, and local regulations.
Contaminated Packaging	If empty container retains product residues, all label precautions, must be observed. Store away from ignition sources. Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Dispose of container according to national or local regulations.

14. TRANSPORT INFORMATION

DOT



UN/ID No.	UN 2811
Proper Shipping Name	TOXIC SOLID, ORGANIC, N.O.S., (N,N-Diphenylthiourea)
Hazard Class	6.1
Packing Group	II
Marine Pollutant	No

IATA



UN/ID No.	UN 2811
Proper Shipping Name	TOXIC SOLID, ORGANIC, N.O.S., (N,N-Diphenylthiourea)
Hazard Class	6.1
Packing Group	II
Marine Pollutant	No

IMDG



UN/ID No.	UN 2811
Proper Shipping Name	TOXIC SOLID, ORGANIC, N.O.S., (N,N-Diphenylthiourea)
Hazard Class	6.1

Packing Group II
Marine Pollutant No
TDG (Canada) See DOT

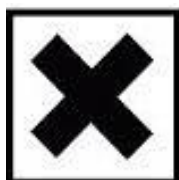
15. REGULATORY INFORMATION

LABELLING ACCORDING TO DIR 67/548 EEC

EC Number: 202-577-6
Classification based on: TESTS



TOXIC (T+)



HARMFUL (Xn)

CLASSIFIED ACCORDING TO DIRECTIVE 199/45/EC

Risk Phrases: R24/25 – Toxic in contact with skin and if swallowed.

Safety Phrases: S36/37/39 – Wear suitable protective clothing, gloves, eye, and face protection.
S45 – In case of accident or if you feel ill, seek medical advice immediately.
S46 – If swallowed, seek medical advice immediately (show label or container)

FDA Status 21 CFR Regulated for use under the following sections of FDA 21 CFR:
177.2600 – Rubber articles intended for repeated use in food contact.
175.300 - Resinous and polymeric coatings.
177.1210 - Closures with sealing gaskets for food containers.

TSCA Listed

Canadian DSL Listed

EINECS/ELINCS Listed

US Regulations

SARA Section 302 None Found
SARA 311/312 Hazard Categories Immediate
SARA 313 Chemical None
RCRA Status None listed

Canadian Regulations

WHMIS Hazard Class



D1A - VERY TOXIC MATERIALS MATERIAL CAUSING IMMEDIATE AND SERIOUS TOXIC EFFECTS

NPRI Not determined

16. HAZARD RATING SYSTEM

NFPA Rating (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	3
FIRE	0
REACTIVITY	0

HMIS Classification (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	3
FIRE	0
REACTIVITY	0

17. OTHER INFORMATION

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. SunBoss Chemicals Corp. extends no warranty and assumes no responsibility for the accuracy or sufficiency of the content and expressly disclaims all liability for reliance thereon. This safety data sheet provides guidelines for the safe handling of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. It is the responsibility of the user to comply with all Federal, State and local laws and regulations. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

Abbreviations and Acronyms

ACGIH: American Conference of Governmental Industrial Hygienists Inc.
CAS: Chemical Abstracts Service (Division of American Chemical Society)
DOT: Department of Transportation (USA)
EINECS: European Inventory of Existing Commercial Chemical Substances
HMIS: Hazardous Materials Identification System (USA)
IARC: Internal Agency for Research on Cancer
IATA: International Air Transport Association
IMDG: International Marine Code for Dangerous Goods
LD50: Lethal Dose Medium
LC50: Lethal Concentration Medium
EC50: Effective Concentration Medium
NIOSH: National Institute for Occupational Safety and Health
NFPA: National Fire Protection Association (USA)
NPRI: National Pollutant Release Inventory (Canada)
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration (USA)
PEL: Permissible Exposure Limits
TDG: Transportation of Dangerous Goods (Canada)
TLV: Threshold Limit Value
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Information Systems (Canada)

17. REVISION DATE

Revision number: 3

Date of Issue: September 12, 2014

Changes: Number and format of headings changed; Updates to Sections 1: Identification of Substance - EC information added; 2: Health Hazards Information; 8: Specific Personal Protection Equipment - pictograms added; 14: Transport information - pictograms added; 15: Regulatory information - EC information added; 16: Hazard Rating System - table added; 17: Abbreviations and Acronyms added