

# MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Dithiothreitol (DTT)** PRODUCT NUMBER: EC-601

CHEMICAL NAMES/ DESCRIPTION: Threitol; Cleland's Reagent; 1,4-dithio-,dl-; 2,3-butanediol, 1,4-dimercapto dl-threo

MANUFACTURER: National Diagnostics, Inc.  
305 Patton Drive  
Atlanta, GA 30336

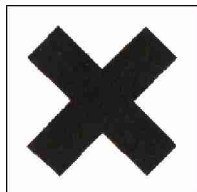
TELEPHONE NUMBER:  
(800) 526-3867  
(404) 699-2121

EMERGENCY NUMBER:  
CHEMTREC (800) 424-9300

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	% Comp	CAS #	EINECS #	TLV (units)
DITHIOTHREITOL (DTT)	>95	-12-3/27565-	222-468-7	None established

EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

R: 20/21/22-42

Harmful by inhalation, in contact with skin and if swallowed may cause sensitization by inhalation.

S: 26-22-36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not breath dust. Wear suitable protective clothing.

## 3. HAZARDS IDENTIFICATION

APPEARANCE AND ODOR: White solid with a disagreeable odor.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING

MAY AFFECT CENTRAL NERVOUS SYSTEM.

### POTENTIAL HEALTH EFFECTS

#### INHALATION

Causes irritation to the respiratory tract. Can cause nausea, headache and vomiting. Exposure may result in blood in urine, difficulty breathing, irregular heartbeat, anemia, weakness, drunkenness, bluish skin color, lung congestion, kidney damage, paralysis, convulsions unconsciousness and coma. Thiols may cause central nervous system depression (CNS).

#### INGESTION

Exposure can cause headache, weakness, restlessness, paralysis and coma.

#### SKIN

Exposure may cause irritation and possible burns to the skin. May cause dermatitis.

#### EYES

Contact with the eye may cause sever irritation, and possible eye burns.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

#### INHALATION

Symptoms may include coughing, shortness of breath.

#### INGESTION

Symptoms may include nausea, vomiting, diarrhea, drunkenness, and bluish skin color.

#### SKIN

Symptoms include redness, itching, and pain.

#### EYES

Symptoms include redness, and pain.

#### CARCINOGENICITY

No information is available.

#### MUTAGENICITY

No information is available.

#### REPRODUCTIVE TOXICITY

No information is available.

#### TERATOGENIC EFFECTS

No information is available.

#### ROUTES OF ENTRY

Contact with this material by any route of exposure (eye/skin, inhalation or ingestion) may cause serious adverse health consequences.

#### TARGET ORGAN STATEMENT

No information is available.

### 4. FIRST AID MEASURES

#### INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

#### INGESTION:

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### SKIN:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

#### EYES:

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

### 5. FIRE FIGHTING MEASURES

FLASH POINT: >228F (>109C) FLAMMABLE LIMITS: N.A.

FLASH POINT METHOD: N.A. AUTOIGNITION TEMPERATURE: N.A.

#### EXTINGUISHING MEDIA

Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

#### PROTECTIVE EQUIPMENT

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

#### HAZARDOUS COMBUSTION PRODUCTS:

Highly toxic gases may be involved in fires of this product.

## UNUSUAL FIRE AND EXPLOSION HAZARDS

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

NFPA CODES: Health: 2      Flammability: 1      Reactivity: 0

## 6. ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Use absorbent material to collect and contain for salvage or disposal.

### WASTE DISPOSAL METHOD

Disposal must be made in accordance with applicable federal, state, and local regulations.

### PERSONAL PRECAUTIONS

Wear appropriate protective equipment as specified in section 8.

## 7. HANDLING AND STORAGE

### HANDLING

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

### STORAGE

Keep in a tightly closed container, stored in a cooled, dry, ventilated area. Protect from physical damage. Isolate from incompatible materials (section 10).

STORAGE TEMPERATURE: 20C

### DISPOSAL

Observe all national, state, and local regulations regarding product disposal. Containers of this material may be hazardous when empty since they retain product residues (dust, solids).

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### AIRBORNE EXPOSURE LIMITS:

Component:      DITHIOTHREITOL (DTT)

ACGIH Threshold Limit Value (TLV):      None established

OSHA Permissible Exposure Limit (PEL):      None established

### ENGINEERING CONTROLS

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborn Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

### RESPIRATORY PROTECTION

For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

### EYE PROTECTION

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### SKIN PROTECTION

Wear protective gloves and clean body covering clothing.

### OTHER CONTROL MEASURES

## 9. PHYSICAL PROPERTIES

Boiling Point	260F (127C)	Evaporation Rate	N.A.
Melting Point	108F (42C)	Solubility in Water	Soluble
Vapor Pressure mm Hg	N.A.	pH	4.3 (5% solution)
Vapor Density Air = 1	5.3	Specific Gravity (H2O = 1)	1.0
% Volatile by Volume	0		

## 10. STABILITY AND REACTIVITY

### STABILITY

Stable under ordinary conditions (normal temperatures and pressures) of use and storage. Hygroscopic.

### CONDITIONS TO AVOID

Heat, flames, ignition sources and incompatibles.

### HAZARDOUS DECOMPOSITION PRODUCTS

Burning may produce carbon monoxide, carbon dioxide, and/or sulfur oxides.

### HAZARDOUS POLYMERIZATION

Will not occur

### INCOMPATIBLES

Strong oxidizers.

## 11. TOXICOLOGICAL INFORMATION

### PRODUCT LD50 VALUES

Dithiothreitol (DTT) Oral Rat LD50 (mg/kg): 400

Dithiothreitol (DTT) Dermal Rabbit LD50 (mg/kg):

### COMPONENT CANCER LIST STATUS

Component	NTP Carcinogen		IARC Category
	Known	Anticipated	
DITHIOTHREITOL (DTT)	No	No	None

## 12. ECOLOGICAL INFORMATION

No information available.

## 13. DISPOSAL CONSIDERATIONS

Observe all national, state, and local regulations regarding product disposal. Containers of this material may be hazardous when empty since they retain product residues (dust, solids).

## 14. TRANSPORT INFORMATION

D.O.T.

Proper Shipping Name Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

I.A.T.A.

Proper Shipping Name Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

I.M.O.

Proper Shipping Name Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

## 15. REGULATORY INFORMATION

### UNITED STATES

TSCA Regulatory:

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

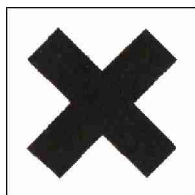
Component	Fire	Pressure	Reactivity	Acute	Chronic
DITHIOTHREITOL (DTT)	No	No	No	Yes	No

### EUROPE

EEC Regulatory:

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

R: 20/21/22-42

Harmful by inhalation, in contact with skin and if swallowed may cause sensitization by inhalation.

S: 26-22-36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not breath dust. Wear suitable protective clothing.

## 16. OTHER INFORMATION

NFPA CODES: Health: 2      Flammability: 1      Reactivity: 0

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.