



# Safety Data Sheet - Version 5.0

Preparation Date 3/25/2015

Latest Revision Date (If Revised)

SDS Expiry Date 3/23/2018

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Chemical Name Disulfoton-D<sub>10</sub>

Catalogue # D493697

### 1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Uses To be used only for scientific research and development. Not for use in humans or animals.

### 1.3 Details of the Supplier of the Safety Data Sheet

Company Toronto Research Chemicals  
2 Brisbane Road  
Toronto, ON M3J 2J8  
CANADA

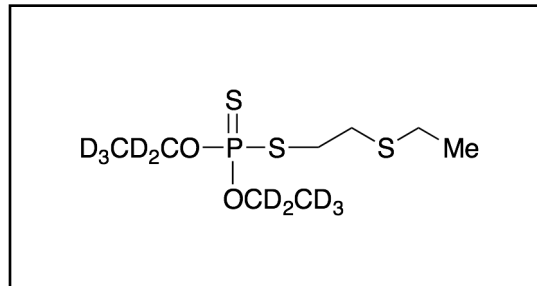
Telephone +14166659696

FAX +14166654439

Email orders@trc-canada.com

### 1.4 Emergency Telephone Number

Emergency# +14166659696 between 0800-1700 (GMT-5)



## 2. HAZARDS IDENTIFICATION

### WHMIS Classification (Canada)

D1A Very Toxic Material Causing Immediate and Serious Toxic Effects  
Toxic by Ingestion/Skin Absorption

### WHMIS Symbols (Canada)



### 2.1/2.2 Classification of the Substance or Mixture and Label Elements

#### GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Acute Toxicity, Oral (Category 1)

Acute Toxicity, Dermal (Category 1)

Hazardous to the Aquatic Environment, Acute Hazard (Category 1)

Hazardous to the Aquatic Environment, Long-Term Hazard (Category 1)

#### EU Classification (According to EU Regulation 67/548/EEC)

Very toxic in contact with skin and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### EU Risk and Safety Statements (According to EU Regulation 67/548/EEC)

##### Hazard Statements Hazard Codes

Very Toxic T+

Environmental Hazard N



##### Risk Codes and Phrases

R27/28 Very toxic in contact with skin and if swallowed.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

##### Safety Precaution Codes and Phrases

- S24 Avoid contact with skin.  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S46 If swallowed, seek medical advice immediately and show this container or label.  
S61 Avoid release to the environment. Refer to special instructions.

### **GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)**

**Signal Word** Danger



#### **GHS Hazard Statements**

- H300 Fatal if swallowed.  
H310 Fatal in contact with skin.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

#### **GHS Precautionary Statements**

- P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301/P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P302/P350 IF ON SKIN: Gently wash with plenty of soap and water.

### **2.3 Unclassified Hazards/Hazards Not Otherwise Classified**

No data available

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1 Substances**

**Molecular Formula:** C<sub>8</sub>H<sub>9</sub>D<sub>10</sub>O<sub>2</sub>PS<sub>3</sub>

**Molecular Weight:** 284.47

**CAS Registry #:**

**EC#:**

#### **Synonyms**

Phosphorodithioic Acid O,O-Diethyl S-[2-(Ethylthio)ethyl] Ester-D<sub>10</sub>;  
Bay 19639-D<sub>10</sub>; Bayer 19639-D<sub>10</sub>; Di-Syston-D<sub>10</sub>; Di-Syston 8-D<sub>10</sub>; Di-Syston G-D<sub>10</sub>; Dithiodemeton-D<sub>10</sub>; Dithiosystox;-  
D<sub>10</sub> Dution-D<sub>10</sub>; ENT-23437-D<sub>10</sub>; Ekatin TD-D<sub>10</sub>; Ethyl Thiometon-D<sub>10</sub>; Ethylthiometon B-D<sub>10</sub>; Frumin-D<sub>10</sub>; Frumin AL-  
D<sub>10</sub>; Frumin G-D<sub>10</sub>; Glebafos-D<sub>10</sub>; M 74-D<sub>10</sub>; M 74 (Pesticide)-D<sub>10</sub>; O,O-Diethyl S-[2-(ethylthio)ethyl] Dithiophosphate-  
D<sub>10</sub>; O,O-Diethyl S-[2-(ethylthio)ethyl] Phosphorodithioate-D<sub>10</sub>; Solvirex-D<sub>10</sub>; Thiodemeton-D<sub>10</sub>; VUAgT 1-4-D<sub>10</sub>; VUAgT  
1964-D<sub>10</sub>

### **3.2 Mixtures**

Not a mixture

## **4. FIRST AID MEASURES**

### **4.1 Description of First Aid Measures**

#### **General Advice**

If medical attention is required, show this safety data sheet to the doctor.

#### **If Inhaled**

If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

#### **In Case of Skin Contact**

Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### **In Case of Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### **If Swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless

advised to do so by a physician or Poison Control Center. Seek medical attention.

#### **4.2 Most Important Symptoms and Effects, Both Acute and Delayed**

No data available

#### **4.3 Indication of any Immediate Medical Attention and Special Treatment Needed**

No data available

### **5. FIREFIGHTING MEASURES**

#### **5.1 Extinguishing Media**

##### **Suitable Extinguishing Media**

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

#### **5.2 Special Hazards Arising from the Substance or Mixture**

Carbon oxides, Sulfur oxides, Phosphorous oxides

#### **5.3 Advice for Firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

#### **5.4 Further Information**

No data available

### **6. ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal Precautions, Protective Equipment and Emergency Procedures**

Use recommended personal protective equipment (see Section 8). Prevent the formation of dusts and mists. Adequate ventilation must be provided to ensure dusts or mists are not inhaled.

#### **6.2 Environmental Precautions**

Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

#### **6.3 Methods and Materials for Containment and Cleaning Up**

Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

For protective equipment, refer to Section 8. For disposal, see Section 13.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for Safe Handling**

Avoid contact with skin and eyes. Ventilation and proper handling are to be used to prevent the formation of dusts and mists. Normal measures for preventative fire protection. No smoking, eating or drinking around this material. Wash hands after use.

#### **7.2 Conditions for Safe Storage, Including any Incompatibilities**

Ensure container is kept securely closed before and after use. Keep in a well ventilated area and do not store with strong oxidizers or other incompatible materials (see Section 10).

Storage conditions: No Data Available

#### **7.3 Specific End Uses**

For scientific research and development only. Not for use in humans or animals.

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **8.1 Control Parameters**

##### **Components with workplace exposure levels**

<b>Component</b>	<b>CAS#</b>	<b>Value</b>	<b>Control Parameters</b>	<b>Basis</b>
Disulfoton	298-04-4	TWA	0.050000 mg/m3	Canada. Alberta, OHS Code
		TWA	0.050000 mg/m3	Canada. British Columbia OEL
		TWAEV	0.100000 mg/m3	Québec. Regulation respecting OHS Code

#### **8.2 Exposure Controls**

## Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

## Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

### Eye/Face Protection

Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

### Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "chemical resistant" by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.

Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.  
Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material.

Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.  
Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

### Body Protection

Chemical-resistant bodysuit (laminated Tychem SL or equivalent).

### Respiratory Protection

Recommended respirators are NIOSH-approved OV/Multi-gas/P100 or CEN-approved ABEK-FFP3 respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

#### A) Appearance

No Data Available

#### C) Odour Threshold

No Data Available

#### E) Melting Point/Freezing Point

No Data Available

#### G) Flash point

No Data Available

#### I) Flammability (Solid/Gas)

No Data Available

#### K) Vapour Pressure

No Data Available

#### M) Relative Density

No Data Available

#### O) Partition Coefficient: n-octanol/water

No Data Available

#### Q) Decomposition Temperature

No Data Available

#### S) Explosive Properties

#### B) Odour

No Data Available

#### D) pH

No Data Available

#### F) Initial Boiling Point/Boiling Range

No Data Available

#### H) Evaporation Rate

No Data Available

#### J) Upper/Lower Flammability/Explosive Limits

No Data Available

#### L) Vapour Density

No Data Available

#### N) Solubility

No Data Available

#### P) Auto-Ignition Temperature

No Data Available

#### R) Viscosity

No Data Available

#### T) Oxidizing Properties

**9.2 Other Information**

no data available

**10. STABILITY AND REACTIVITY****10.1 Reactivity**

No Data Available

**10.2 Chemical Stability**

Stable under recommended storage conditions.

**10.3 Possibility of Hazardous Reactions**

No Data Available

**10.4 Conditions to Avoid**

No Data Available

**10.5 Incompatible Materials**

Strong oxidizing agents

**10.6 Hazardous Decomposition Products**

No Data Available

**11. TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects****A) Acute Toxicity**

LD50 (oral - rat) 2.6 mg/kg

LD50 (dermal - rabbit) 5 mg/kg

**B) Skin Corrosion/Irritation**

No data available

**C) Serious Eye Damage/Irritation**

No data available

**D) Respiratory or Skin Sensitization**

No data available

**E) Germ Cell Mutagenicity**

No data available

**F) Carcinogenicity**

No data available

**G) Reproductive Toxicity/Teratogenicity**

No data available

**H) Single Target Organ Toxicity - Single Exposure**

No data available

**I) Single Target Organ Toxicity - Repeated Exposure**

No data available

**J) Aspiration Hazard**

No data available

**K) Potential Health Effects and Routes of Exposure****Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion**

May be fatal if swallowed.

**Skin**

May be fatal if absorbed through skin. May cause skin irritation.

**Eyes**

May cause eye irritation.

**L) Signs and Symptoms of Exposure**

No data available

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

**M) Additional Information**

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 0.07 - 0.3 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.01 mg/l - 48 h

**12.2 Persistence and Degradability**

No data available

**12.3 Bioaccumulative Potential**

No data available

**12.4 Mobility in Soil**

No data available

**12.5 Results of PBT and vPvB Assessment**

No data available

**12.6 Other Adverse Effects**

No data available

**13. DISPOSAL CONSIDERATIONS****13.1 Waste Treatment Methods****A) Product**

Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

**B) Contaminated Packaging**

Dispose of as above.

**C) Other Considerations**

Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

**14. TRANSPORT INFORMATION****14.1 UN Number**

DOT (US): 2810	IATA: 2810	IMDG: 2810	ADR/RID: 2810
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**14.2 UN Proper Shipping Name**

DOT (US)/IATA:

Toxic, liquids, organic, n.o.s. (Disulfoton)

IMDG/ARD/RID:

TOXIC, LIQUIDS, ORGANIC, N.O.S. (Disulfoton)

**14.3 Transport Hazard Class(es)**

DOT (US): 6.1	IATA: 6.1	IMDG: 6.1	ADR/RID: 6.1
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**14.4 Packing Group**

DOT (US): I	IATA: I	IMDG: I	ADR/RID: I
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**14.5 Environmental Hazards**

DOT (US): None	IATA: None	IMDG: None	ADR/RID: None
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**14.6 Special Precautions for User**

None

**15. REGULATORY INFORMATION**

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

**15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture****A) Canada****DSL/NDSL Status:** This product is not listed on the Canadian DSL/NDSL.**B) United States****TSCA Status:** This product is not listed on the US EPA TSCA.**C) European Union****ECHA Status:** This product is not registered with the EU ECHA.**15.2 Chemical Safety Assessment**

No data available

## **16. OTHER INFORMATION**

### **16.1 Revision History**

Original Publication Date: 3/25/2015

### **16.2 List of Abbreviations**

LD50	Median lethal dose of a substance required to kill 50% of a test population.
LC50	Medial lethal concentration of a substance required to kill 50% of a test population.
LDLo	Lowest known lethal dose
TDLo	Lowest known toxic dose
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances

### **16.3 Further Information**

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.