

MATERIAL SAFETY DATA SHEET**DITHIZONE**

PRODUCT CODE NUMBER(S): 3610-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Dithizone, diphenylthiocarbazone; 1,5-diphenyl 3-formazanhiol*
Chemical Family: *Hydrazide*
Chemical Formula: $C_{12}H_{10}N_4S$
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
*Caledon Laboratories Ltd.
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HAZARDOUS INGREDIENTS OF MATERIALS

<i>Ingredients</i>	<i>%</i>	<i>TLVUnits</i>	<i>CAS No.</i>
<i>Dithizone</i>	<i>>80</i>	<i>Not established</i>	<i>60-10-6</i>

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *Black or purple-black needle-like crystals; odourless*
Odour Threshold (ppm): *Not applicable*
Vapour Pressure (mm Hg): *Not available*
Vapour Density (Air = 1): *8.8*
Evaporation Rate: *Not available*
Boiling Point (degrees C): *Not available*
Melting Point (degrees C): *168°C (decomposes)*
pH: *Not available*
Specific Gravity: *Not available*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *Not regulated*
T.D.G. Class: *Not regulated*
Pkg. Group: *Not regulated*

REACTIVITY DATA

Chemical Stability: *Normally stable*
Incompatibility with other substances: *May react violently with strong oxidizers.*
Reactivity: *Avoid excessive heat, all incompatible materials, generation of dust.*
Hazardous Decomposition Products: CO_x , NO_x , sulphur compounds

FIRE AND EXPLOSION DATA

Flammability: *May be combustible if strongly heated. As with most organic compounds, fine dust dispersed in air in the presence of an ignition source is a potential dust explosion hazard.*
Extinguishing Media: *Use extinguishing media appropriate to the surrounding fire. Use water as spray or fog to minimize dust, absorb heat, cool containers, and disperse vapours. Fight fire from upwind, from a safe distance. Firefighters should wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes.*
Flash Point (Method Used): *Not available*
Autoignition Temperature: *Not available*
Upper Flammable Limit (% by volume): *Not available*
Lower Flammable Limit (% by volume): *Not available*
Hazardous Combustion Products: *Highly toxic fumes of CO_x , NO_x , sulphur compounds*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *As with most organic powders, mixtures of dust with air may be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA**Toxicological Data:**

LD₅₀: *(ipr mouse) 200 mg/kg*
LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *May cause mechanical irritation to mucous membranes of upper respiratory tract. Not expected to be a health hazard.*
In contact with skin: *May cause mechanical irritation.*
In contact with eyes: *May cause mechanical irritation.*
Ingested: *Low toxicity. Extremely large oral doses may cause gastrointestinal disturbances.*

Effects of Chronic Exposure to Product:

Carcinogenicity: *No human or animal information available.*
Teratogenicity: *No human or animal information available.*
Reproductive Effects: *No information available*
Mutagenicity: *No information available*
Synergistic Products: *None found*

PREVENTIVE MEASURES

Engineering Controls: *Local exhaust ventilation recommended*
Respiratory Protection: *Dust mask. NIOSH/MSHA approved half-face dust/mist respirator for dusty conditions.*

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For high or unknown concentrations, as in fire or spill conditions, full face-piece, positive-pressure, self-contained breathing apparatus.

Eye Protection: *Chemical safety glasses.*

Skin Protection: *Rubber gloves. Other protective clothing as required to minimize contact.*

Other Personal Protective Equipment: *Safety shower and eye-wash fountain in work area.*

Leak and Spill Procedure: *Cleanup personnel should be thoroughly trained in the safe handling of this product, and should wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Wet or mix with inert adsorbent, gather up and transfer carefully into container for removal by disposal company. Wash site of spillage thoroughly with water and detergent.*

Waste Disposal: *Follow all federal, provincial, and local regulations*

Handling Procedures and Equipment: *Use routine safe handling procedures. Personnel working with this product should be trained in its hazards and its safe use, and should wear appropriate protective clothing and equipment. If dust is present, observe explosion prevention measures, use non-sparking tools, keep away from heat, sparks, and all sources of ignition; avoid the accumulation of static charge, ground and bond equipment and containers. Avoid generating dust. Maintain good housekeeping procedures to avoid accumulation of dust. Avoid contact and inhalation. Use the smallest amount possible for the purpose, in a designated area with appropriate ventilation. Wash thoroughly after handling.*

Storage Requirements: *Store in suitable, labelled containers, in a cool, dry, well-ventilated place away from incompatible materials and sources of heat or ignition. Keep containers tightly closed.*

Proposed WHMIS Designation: *Not a controlled product. Not required to be updated every three years (WHMIS 1992, B-40, Section 29,2)*

*Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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FIRST AID MEASURES

Specific Measures:

Eyes: *Flush eyes thoroughly with gently running water for five to ten (5-10) minutes, holding eyelids open while flushing. Get medical advice if irritation develops.*

Skin: *Flush with running water for five (5) minutes, or until chemical is removed. If irritation develops get medical attention.*

Inhalation: *Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.*

Ingestion: *If casualty is conscious, alert and not convulsing, give 1 to 2 glasses of water to drink to dilute. If discomfort occurs, or if a large amount has been ingested, get medical attention.*

REFERENCES USED

CCINFO disc: MSDS's, May 2007

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: *June 10, 1991*

Revision: *May 2010*

MSDS: *3610-5*