

MATERIAL SAFETY DATA SHEET**X-GAL**

PRODUCT CODE NUMBER(S): 9460-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *X-Gal; 5-Bromo-4-chloro-3-indolyl-b-d-galactopyranoside*
Chemical Family: *Organic halogenated compound*
Chemical Formula: $C_{14}H_{15}BrClNO_6$
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
*Caledon Laboratories Ltd.
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Georgetown, Ontario L7G 4R9*
Telephone No: (905) 877-0101
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HAZARDOUS INGREDIENTS OF MATERIALS

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>X-Gal</i>	<i>>95</i>	<i>Not established</i>	<i>7240-90-6</i>

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *White crystalline powder, odourless*
Odour Threshold (ppm): *Not applicable*
Vapour Pressure (mm Hg): *Negligible*
Vapour Density (Air = 1): *Not available*
Evaporation Rate: *Negligible*
Boiling Point (degrees C): *Not available*
Melting Point (degrees C): *230°C*
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: *Stable*
Incompatibility with other substances: *Risk of fire and explosion with strong oxidizers. Incompatible with strong bases.*
Reactivity: *Avoid elevated temperatures, incompatible materials, ignition sources, generation of dust.*
Hazardous Decomposition Products: CO_x , NO_x , ionic or oxidized halogen.

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: *Water fog or spray, alcohol foam, dry chemical, carbon dioxide. Water spray can also be used to cool containers, prevent dust formation, flush chemical away from fire. Fight fire from upwind, from a safe distance. Firefighters must 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: CO_x , NO_x , ionic or oxidized halogen.

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

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

Toxicological Data:

LD₅₀: *Not available*
LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *May be mildly irritating to upper respiratory tract, causing sore throat, coughing, shortness of breath. May be harmful.*
In contact with skin: *May cause irritation, with redness, itching. May be harmful if absorbed. Risk of skin absorption not known.*
In contact with eyes: *May cause irritation, with redness, itching, tearing, pain.*
Ingested: *May cause gastrointestinal irritation, with nausea, vomiting, abdominal pain and diarrhea. May be harmful.*

Effects of Chronic Exposure to Product:

Carcinogenicity: *No human information available. Animal testing inconclusive.*
Teratogenicity: *No human information available.*
Reproductive Effects: *No human or animal information available*
Mutagenicity: *No human or animal information available*

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Synergistic Products: *None known***PREVENTIVE MEASURES****Engineering Controls:** *Local exhaust recommended.***Respiratory Protection:** *Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH approved half-face high-efficiency dust/mist filter respirator, or NIOSH approved full face-piece high-efficiency dust/mist filter respirator.**Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.***Eye Protection:** *Chemical safety glasses. Do not wear contact lenses when working with chemicals.***Skin Protection:** *Wear protective gloves and clean body-covering clothing, long-sleeved shirt, trousers, apron or lab coat.***Other Personal Protective Equipment:** *Safety shower and eye-wash fountain in work area.***Leak and Spill Procedure:** *Ventilate area. Eliminate sources of ignition. Cleanup personnel should be trained in the handling of hazardous chemicals and should wear protective equipment and clothing sufficient to prevent inhalation of dust, mist or fumes, and contact with skin and eyes. Prevent from entering sewers or waterways. Collect in a manner that does not raise dust, transfer carefully into container, and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.***Waste Disposal:** *Follow all federal, provincial and local regulations for disposal.***Handling Procedures and Equipment:** **COMBUSTIBLE DUST.** *Workers using this chemical must be properly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid generating dust. If there is dust, keep away from heat, sparks, and all sources of ignition; avoid the accumulation of static charge, use anti-sparking tools and ground and bond equipment and containers. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Use good housekeeping to prevent accumulations of dust. Avoid contact with skin and eyes. Avoid inhalation. Wash thoroughly after handling.***Storage Requirements:** *Store in freezer (-15 to -22°C), in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials, and ignition sources. Protect from damage and inspect frequently for signs of leaking.***FIRST AID MEASURES****Specific Measures:****Eyes:** *Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Get medical advice if irritation develops.***Skin:** *Remove contaminated clothing. Brush or wipe off dry material. Flush skin with plenty of running water until no evidence of chemical remains. If irritation develops get medical attention.***Inhalation:** *Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.***Ingestion:** *If victim is alert and NOT convulsing, rinse mouth, give several glasses of water to drink to dilute. Get medical attention.***REFERENCES USED***CCINFO disc**Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987**Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979**Suppliers' Material Safety Data Sheets***ADDITIONAL INFORMATION****Date Issued:** *March 1999***Revision:** *March 2011***MSDS:** *9460-5***Proposed Whmis Designation:** *Not controlled. 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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