MATERIAL SAFETY DATA SHEET (MSDS)

Date of Preparation or Revision: March 4, 1998

IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY:
Catalog Number: 29112
Product Name: S-Benzylisothiourea, Hydrochloride
Supplier: OXIS International Inc.
6040 N. Cutter Circle, Suite 317
Portland, OR 97217-3935 USA
Telephone: (503)283-3911
(800)547-3686
Fax: (503)283-4058

COMPOSITION/INFORMATION ON INGREDIENTS:
Chemical Name: S-Benzylisothiourea, Hydrochloride
Synonyms: SBT; 2-Benzyl-2-thiopseudourea, HCl; U-19451A
Hazardous Ingredient: S-Benzylisothiourea, Hydrochloride
CAS Registry Number: 538-28-3
Molecular Weight: 202.7
Molecular Formula: C₈H₁₀N₂S ⋅ HCl

HAZARDS IDENTIFICATION:
T, Toxic
May be harmful by ingestion, inhalation or absorption through skin. Exposure to material may cause irritation.

FIRST AID MEASURES:
In cases of skin contact, wash immediately with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes and wash before wearing. Consult a physician.
In cases of eye contact, flush immediately with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.
In cases of inhalation, remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen and consult a physician. If breathing stops, give artificial respiration and consult a physician.
In cases of ingestion, wash mouth out with water and consult the local poison center and a physician.

FIRE-FIGHTING MEASURES:
Extinguishing Media: Dry chemical powder, carbon dioxide, water spray, alcohol or polymer foam.
Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.
Unusual Fire and Explosive Hazards: Upon thermal decomposition, it may EMIT TOXIC GASES.
ACCIDENTAL RELEASE MEASURES:
Steps to be Taken if Material is Released or Spilled: Evacuate area. Wear a self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Sweep up and place in a suitable container. Avoid raising dust. Hold for appropriate disposal. Wash spill site and ventilate area after material pickup is complete.

HANDLING AND STORAGE:
Store in a tightly closed container at 2-8°C. Protect from moisture. Material is toxic. Avoid contact with material. Avoid prolonged or repeated exposure. Lab should be equipped with a safety shower and an eye wash station. Wash thoroughly after handling material.

EXPOSURE CONTROLS/ PERSONAL PROTECTION:
Protective Equipment: Wear suitable protective clothing, such as chemical resistant gloves and chemical safety goggles. 
Respiratory Protection and Ventilation: Use a NIOSH/MSHA approved respirator. 
Handle in a chemical fume hood with adequate ventilation.

PHYSICAL AND CHEMICAL PROPERTIES:
Appearance: White solid.
Melting Point: 177-179°C
Solubility: Soluble in ethanol.

STABILITY AND REACTIVITY:
Stability: Stable under normal handling procedures.
Incompatibilities and Conditions to Avoid: Avoid contact with strong oxidizing agents.
Hazardous Combustion or Decomposition Products: Upon thermal decomposition, may emit toxic gases including carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, and hydrogen chloride gas.

TOXICOLOGICAL INFORMATION:
RTECS Number: UM0738000

Toxicity Data and References:
Orl; rat; LD₅₀: 27 mg/kg GTPZAB 27(2):52, 1983
Ipr; mus; LD₅₀: 50 mg/kg NTIS** AD277-689
Scu; mus; LD₅₀: 80 mg/kg NDRC** 9-4-1-9,43
Ivn; mus; LD₅₀: 32 mg/kg CSLNX* NX#00167

Refer to the Registry of Toxic Effects of Chemical Substances (RTECS) for a definition of abbreviations used in the above text and for additional information. This report contains only selected information from the RTECS.

ECOLOGICAL INFORMATION:
No information available.

DISPOSAL CONSIDERATIONS:
Country, federal, state, and local regulations are varied and change frequently. For this reason, we recommend that you contact your local Department of Health Services for information on the disposal of this product or arrange for disposal by a licensed disposal company.
TRANSPORT INFORMATION:
UN Number:  UN2811
Proper Shipping Name:  Toxic solid, organic, n.o.s.
IATA Class:  6.1
IATA Packing Group:  II

REGULATORY INFORMATION:
Risks:
R23/24/25:  Toxic by inhalation, in contact with skin and if swallowed

Safety:
S22:  Do not breath dust
S24/25:  Avoid contact with skin and eyes
S36/37/39:  Wear suitable protective clothing, gloves and eye/face protection
S45:  In case of accident or if you feel unwell, seek medical advice immediately

EINECS Number:  N/A

OTHER INFORMATION:
The information contained in this MSDS is believed to be correct to the best of our knowledge. However, we make no warranty, expressed or implied, with respect to such information. The information may not be all inclusive, the user should make an independent determination of the suitability of the information based on all sources available and adopt appropriate safety precautions. OXIS International Inc. shall not be liable for any damage resulting from contact or handling of this product.