MATERIAL SAFETY DATA SHEET
AGRIBROM
Great Lakes

MSDS NUMBER: 00255

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Agribrom
MANUFACTURER: GREAT LAKES CHEMICAL CORPORATION
P.O. BOX 2200
WEST LAFAYETTE, INDIANA 47996-2200
EMERGENCY TELEPHONE NUMBER: 1-800-949-5167
INFORMATION TELEPHONE NUMBER: 1-765-497-6100
FAX: 1-765-497-6123
CHEMTREC PHONE: 1-800-424-9300
EFFECTIVE DATE: 8/7/98
SUPERCEDE DATE: 9/96
MSDS PREPARED BY: Regulatory Affairs Department/Great Lakes
Chemical Corporation
SYNONYMS: 1-Bromo-3-chloro-5,5-dimethyl-2,4-imadazolidinedione
PRODUCT USE: EPA registered pesticide
CHEMICAL NAME: 1-Bromo-3-chloro-5,5-dimethylhydantoin
CHEMICAL FAMILY: Halogenated heterocyclic

ADDITIONAL INFORMATION

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Bromo-3-chloro-5,5-dimethylhydantoin</td>
<td>16079882</td>
<td>96.0</td>
</tr>
</tbody>
</table>

EXPOSURE LIMITS:
Y (Hazardous)
15 mg/m³ (PNOR) (OSHA PEL TWA)
Not established (OSHA PEL STEL)
Not established (OSHA PEL CEIL)
10 mg/m³ (PNOC) (ACGIH TLV TWA)
Not established (ACGIH TLV STEL)
Not established (ACGIH TLV CEIL)

Inerts
4.0

EXPOSURE LIMITS:
N (Hazardous)
15 mg/m³ (PNOR) (OSHA PEL TWA)
Not established (OSHA PEL STEL)
Not established (OSHA PEL CEIL)
10 mg/m³ (PNOC) (ACGIH TLV TWA)
Not established (ACGIH TLV STEL)
Not established (ACGIH TLV CEIL)

*Mixture. Indented chemicals components of mixture.

ADDITIONAL INFORMATION

ADDITIONAL EXPOSURE LIMITS:
5 mg/m³ Respirable Dust Level (OSHA)
3 mg/m³ Respirable Dust Level (ACGIH)
Maintain at low levels to avoid dust irritation.
PNOR = Particulates Not Otherwise Regulated
PNOC = Particulates Not Otherwise Classified

SECTION III - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White granules or tablets
Faint halogen odor
May be harmful if swallowed.
Corrosive to eyes.
Corrosive to skin.
Contact can result in chemical burns.
Oxidizer

RELEVANT ROUTS OF EXPOSURE: Inhalation and ingestion.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Contact may cause
reddening, general irritation, a burning sensation or
irreversible damage to the skin and eyes. Inhalation of
dust can cause nasal and throat irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None
reported. Existing dermatitits may be aggravated by
exposure.

POTENTIAL HEALTH EFFECTS: See Section XI for additional
information.

EYES: Corrosive to the eyes. May cause chemical burns.
SKIN: Corrosive to skin. May cause chemical burns.
INGESTION: May be harmful if swallowed.
INHALATION: May be harmful if inhaled. Irritating to the
nose, throat, mucous membranes and upper respiratory
tract.

CARCINOGENICITY:
NTP: No
IARC: No
OSHA: No
ACGIH: No
OTHER: No

ADDITIONAL INFORMATION
No information available

SECTION IV - FIRST AID MEASURES

EYES: Irrigate eyes with large volumes of room temperature
water for at least 15 minutes, then seek medical
attention promptly.

SKIN: Remove contaminated clothing immediately. Brush off
excess chemical and wash skin with large volumes of soap
and water, flushing the skin with water for at least
15 minutes. If skin irritation develops, seek medical
attention.

INGESTION: Seek medical attention promptly. Do not induce
vomiting. Do not drink alcohol. Drink at least 8 ounces
of water (not to exceed 0.23 oz. per pound in a child.)

INHALATION: Remove person to fresh air. Get medical
attention.

ANTIDOTES: No information available
NOTES TO PHYSICIANS AND/OR PROTECTION FOR FIRST-AIDERS:
Probable mucosal damage may contraindicate the use of gastric lavage.

ADDITIONAL INFORMATION
No information available

SECTION V - FIRE FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR (% by Volume): Not available
FLASH POINT: Not applicable
AUTOIGNITION TEMPERATURE: Not available
EXTINGUISHING MEDIA: Water
   Ammonium phosphate fire extinguishers should not be used.
FIRE FIGHTING INSTRUCTIONS: Wear a self-contained breathing apparatus and protective clothing to prevent skin and eye contact in fire situations.
UNUSUAL FIRE AND EXPLOSION HAZARDS: In large fires fueled by other materials, the product may smolder for prolonged periods emitting a dense black smoke. Under fire conditions, toxic and irritating fumes may be emitted. A dust explosion severity determination was performed using the Hartman Dust Explosibility Bomb designed at the U. S. Bureau of mines. The product was determined not to be ignitable.
FLAMMABLE CLASSIFICATION: Non-flammable solid
KNOWN OR ANTICIPATED HAZARDOUS PRODUCTS OF COMBUSTION:
   Hydrogen bromide and/or bromine
   Hydrogen bromide and/or chlorine
   Oxides of nitrogen
   Carbon monoxide and carbon dioxide

ADDITIONAL INFORMATION
No information available

SECTION VI - ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Wearing appropriate personal protective equipment, carefully sweep up material and place in suitable labeled containers for disposal.
PERSONAL PRECAUTIONS: See Section VIII.
ENVIRONMENTAL PRECAUTIONS: Avoid releasing to the environment.

ADDITIONAL INFORMATION
No information available

SECTION VII - HANDLING AND STORAGE

HANDLING: Use appropriate personal protection equipment.
   Avoid eye, skin and clothing contact.
   Avoid breathing dust.
   Avoid repeated and prolonged contact.
   Avoid creating a dusting situation.
   Strong oxidizing agent. Mix only with water. Use clean, dry utensils and equipment. Do not add this product to any dispensing device containing remnants of any other
product. Such use may cause a violent reaction leading to fire and explosion. Contamination with moisture, organic matter or other chemicals may start a chemical reaction with generation of heat, hazardous gases and possible fire and explosion. In case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. If necessary, flood with large volumes of water.

STORAGE: Keep product dry in tightly closed container when not in use. Store in a cool, dry, well-ventilated area away from heat, open flames, organic chemicals and sunlight.

OTHER PRECAUTIONS: Do not contaminate water, food or feed by storage or disposal.

ADDITIONAL INFORMATION
No information available

SECTION VIII - EXPOSURE CONTROLS/PERSOANL PROTECTION

ENGINEERING CONTROLS: No information available

VENTILATION REQUIREMENTS: Use local exhaust to minimize dusting.

PERSONAL PROTECTIVE EQUIPMENT:
- EYE/FACE PROTECTION: Chemical safety goggles
- SKIN PROTECTION: Rubber or plastic gloves
  - Coveralls over long-sleeved shirt and long pants
  - Chemical-resistant footwear plus socks
  - Chemical resistant headgear for overhead exposure
  - Chemical resistant apron when cleaning equipment, mixing or loading

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved dust respirator if dusting occurs, or if there is potential for airborne exposures to exceed established threshold values.

Mixer and loaders must wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).


OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No information available

EXPOSURE GUIDELINES: See Section II.

WORK HYGIENIC PRACTICES: Wash thoroughly after handling.

Wash contaminated clothing before reuse.

ADDITIONAL INFORMATION
No information available

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE: White granules or tablets

BOILING POINT: Not available

BULK DENSITY: 64.5 lb/cu.ft.

COLOR: White

DECOMPOSITION TEMPERATURE: Not available
EVAPORATION RATE: Not available
FREEZING POINT: Not available
HEAT VALUE: Not available
MELTING POINT: ~320 degrees F
MOLECULAR/CHEMICAL FORMULA: C5H6BrClN2O2
MOLECULAR WEIGHT: 241.47
OCTANOL/WATER PARTITION COEFFICIENT: 0.35
ODOR: Faint halogen
ODOR THRESHOLD: Not available
PARTICLE SIZE: Not available
PERCENT VOLATILE: Not available
pH VALUE: Not available
pH CONCENTRATION: Not available
PHYSICAL STATE: Solid
REACTIVITY IN WATER: Not water reactive
SATURATED VAPOR CONCENTRATION: Not available
SOFTENING POINT: Not available
SOLUBILITY IN WATER: 0.15 g/100 mL
SPECIFIC GRAVITY OR DENSITY (Water = 1): 0.9
VAPOR DENSITY: Not available
VAPOR PRESSURE: Not available
VISCOSITY: Not available
VOLATILE ORGANIC COMPOUNDS: Not available
WATER/OIL DISTRIBUTION COEFFICIENT: Not available
WEIGHT PER GALLON: Not available

ADDITIONAL INFORMATION
No information available

SECTION X - STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of handling and use.
CONDITIONS TO AVOID: Contamination with moisture, organic matter or other chemicals may start a chemical reaction with generation of heat, hazardous gases and possible fire and explosion.
INCOMPATIBILITY WITH OTHER MATERIALS: Organic chemicals Readily oxidizable materials Reducing agents
HAZARDOUS DECOMPOSITION PRODUCTS:
THERMAL DECOMPOSITION MAY PRODUCE THE FOLLOW:
Hydrogen bromide and/or bromine
Hydrogen chloride and/or chlorine
Oxides of nitrogen
Carbon monoxide and carbon dioxide
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: None

ADDITIONAL INFORMATION
No information available

SECTION XI - TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>VALUE (LD50 OR LC50)</th>
<th>ANIMAL</th>
<th>ROUTES</th>
<th>COMPONENTS</th>
</tr>
</thead>
</table>


TOXICOLOGICAL INFORMATION: This material is harmful by ingestion and inhalation. The primary skin irritation index has been determined to be 6.1 and the product is considered corrosive to the skin. This material is corrosive to the eyes and can cause irreversible eye damage on contact. Contact with dilute solution (0.1% or less) is non-irritating to the eyes and skin. No deaths were observed in a 4-hour acute inhalation study with rats exposed to 3.2 mg/L of a 100 ppm aqueous solution of the product. Other acute and chronic health hazards, as well as target organs, are unknown. As with all dusts, inhalation of air concentration levels above the PNOR may cause irritation and adverse lung effects.

ADDITIONAL INFORMATION
No information available

SECTION XII - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board of Regional Office of the EPA.

ADDITIONAL INFORMATION
No information available

SECTION XIII - DISPOSAL CONSIDERATIONS

DISPOSAL CONSIDERATIONS: Dispose of waste at an approved chemical disposal facility in compliance with all current Local, State/Province, Federal/Canadian laws and regulations. Open dumping is prohibited.

ADDITIONAL INFORMATION
FOR EMPTY CONTAINERS: Do not reuse empty container. Triple rinse the container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate. Burn only if allowed by state or local authorities. If burned, stay
out of smoke.

SECTION XIV - TRANSPORT INFORMATION

U.S. DOT:
PROPER SHIPPING NAME: Oxidizing solid, n.o.s. (1-Bromo-3-chloro-5,5-dimethylhydantoin)
HAZARD CLASS: 5.1
PACKING GROUP: II
SPECIAL PROVISIONS: N/A
NON-BULK PACKAGING: 212
PASSENGER AIR/RAIL LIMIT: 5 kg
VESSEL STOWAGE: B
REPORTABLE QUANTITY: N/A
ID NUMBER: UN1479
LABELS: 5.1
PACKAGING EXCEPTIONS: 152
BULK PACKAGING: 240
AIR CARGO LIMIT: 25 kg
OTHER STOWAGE: 56, 58, 69, 106

AIR - ICAO OR IATA:
PROPER SHIPPING NAME: Oxidizing solid, n.o.s. (1-Bromo-3-chloro-5,5-dimethylhydantoin)
HAZARD CLASS: 5.1
SUBSIDIARY RISK: N/A
HAZARD LABELS: Oxidizer
AIR PASSENGER LIMIT PER PACKAGE: 5 kg; LQ 2.5 kg
AIR CARGO LIMIT PER PACKAGE: 25 kg
ID NUMBER: UN1479
PACKING GROUP: II
PACKING INSTRUCTIONS: 508; LQ Y508
PACKING INSTRUCTION - CARGO: 511
SPECIAL PROVISIONS CODE: N/A

WATER - IMDG:
PROPER SHIPPING NAME: Oxidizing solid, n.o.s. (1-Bromo-3-chloro-5,5-dimethylhydantoin)
HAZARD CLASS: 5.1
PACKING GROUP: II
MEDICAL FIRST AID GUIDE CODE: See Below
ID NUMBER: UN1479
SUBSIDIARY RISK: N/A

ADDITIONAL INFORMATION
MEDICAL FIRST AID GUIDE: 760 and refer to subsection 4.3 of MFAG Ems No. 5.1-11

SECTION XV - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: These products are offered as EPA registered pesticides.
STATE REGULATIONS: None known
INTERNATIONAL REGULATIONS: This material (or each component) is listed on the following inventories:
Canada - DSL
EU - EINECS
Australia - AICS
Korea - ECL
Canadian WHMIS Hazard Class and Division = Not controlled

SARA HAZARDS:
- ACUTE: Yes
- REACTIVE: No
- PRESSURE: No
- CHRONIC: Yes
- FIRE: Yes

ADDITIONAL INFORMATION
The above regulatory information represents only selected regulations and is not meant to be a complete list.

SECTION XVI - OTHER INFORMATION

NFPA CODES:
- HEALTH: 3
- REACTIVITY: 2
- FLAMMABILITY: 1
- OTHER: 0

HMIS CODES:
- HEALTH: 3
- REACTIVITY: 2
- FLAMMABILITY: 1
- PROTECTION: X

LABEL STATEMENTS: Not available

OTHER INFORMATION:

ABBREVIATIONS:
- (L): Loose bulk density in g/ml
- LOEC: Lowest observed effect concentration
- MATC: Maximum acceptable toxicant concentration
- NA: Not available
- N/A: Not applicable
- NL: Not limited
- NOEC: No observed effect concentration
- NOEL: No observable effect level
- NR: Not rated
- (P): Packed bulk density in g/ml
- PNOC: Particulates Not Otherwise Classified
- PNOR: Particulates Not Otherwise Regulated
- REL: Recommended exposure limit
- TS: Trade Secret

ADDITIONAL INFORMATION
Information on this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29CFR 1910.1200 and The Canadian Environmental Protection Act, Canada Gazette Part II, Vol. 122, No. 2 and shall not be used for any other purpose.

REVISION INFORMATION:
REPLACES JSD: 927
New Format

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COMPAS Code: 10590012

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