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

Ashland Regulatory Information Number 1-800-325-3751
P.O. Box 2219 Telephone 614-790-3333
Columbus, OH 43216 Emergency telephone 1-800-ASHLAND (1-800-274-5263)

Product name Drewbrom® PRECURSOR
® Registered Trademark, Ashland or its subsidiaries
Product code 143420
Product Use Description No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, clear

Potential Health Effects

Exposure routes
Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact
Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact
Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Passage of this material into the body through the skin is possible, and skin contact may be harmful.

Ingestion
Swallowing this material may be harmful.

Inhalation
Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful.

**Aggravated Medical Condition**
Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions), eye

**Symptoms**
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways)

**Target Organs**
Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: male and female reproductive fertility effects

**Carcinogenicity**
This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

**Reproductive hazard**
There are no data available for assessing risk to the fetus from maternal exposure to this material.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM BROMIDE</td>
<td>7647-15-6</td>
<td>&gt;38-%&lt;=42%</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eyes**
If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

**Skin**

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and decontaminate or discard contaminated shoes.

**Ingestion**

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

**Inhalation**

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

**Notes to physician**

**Hazards:** No information available.

**Treatment:** Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

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### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

Water mist, Carbon dioxide (CO2), Dry chemical

**Hazardous combustion products**

May form: Bromine, hydrogen bromide, Sodium oxides

**Precautions for fire-fighting**

No special fire hazards are known to be associated with this product. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).
6. ACCIDENTAL RELEASE MEASURES

Personal precautions
For personal protection see section 8. Persons not wearing proper personal protective equipment should be excluded from area of spill.

Environmental precautions
Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

Methods for cleaning up
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Absorb liquid on vermiculite, floor absorbent or other absorbent material.

7. HANDLING AND STORAGE

Handling
No data

Storage
Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

General advice
These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls
Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below PEL/TLV(s).
Eye protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and body protection

Wear chemical-resistant apron, or in emergency conditions, chemical-resistant clothing and boots.

Wear resistant gloves such as:
Neoprene

Respiratory protection

If overexposure has been determined or documented, a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators under specified conditions. (See your safety equipment supplier.) Engineering or administrative controls should be implemented to reduce exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
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</tr>
<tr>
<td>Colour</td>
<td>clear</td>
</tr>
<tr>
<td>Odour</td>
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</tr>
<tr>
<td>Boiling point/range</td>
<td>223.0 °F / 106.1 °C</td>
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<tr>
<td>Melting point/range</td>
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<tr>
<td>Sublimation point</td>
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<td>pH</td>
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<td>Flash point</td>
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</tr>
<tr>
<td>Ignition temperature</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Lower explosion limit/Upper explosion limit</td>
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</tr>
<tr>
<td>Particle size</td>
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</tr>
<tr>
<td>Vapour pressure</td>
<td>23.333 hPa @ 68 °F / 20 °C Calculated Vapor Pressure</td>
</tr>
<tr>
<td>Relative vapour density</td>
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<tr>
<td>Density</td>
<td>1.43 g/cm³ @ 70.00 °F / 21.11 °C</td>
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<tr>
<td>Bulk density</td>
<td>No data</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>Solubility</td>
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</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>log Pow</td>
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</tr>
<tr>
<td>Autoignition temperature</td>
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<tr>
<td>Viscosity, dynamic</td>
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<tr>
<td>Viscosity, kinematic</td>
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<tr>
<td>Solids in Solution</td>
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<tr>
<td>Decomposition temperature</td>
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<td>Burning number</td>
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<tr>
<td>Dust explosion constant</td>
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</tr>
<tr>
<td>Minimum ignition energy</td>
<td>no data available</td>
</tr>
</tbody>
</table>

**10. STABILITY AND REACTIVITY**

**Stability**
Stable.

**Conditions to avoid**
Avoid contact with; temperature extremes

**Incompatible products**
Avoid contact with; aluminum, anionic materials, oxidizable substances, strong acids

**Hazardous decomposition products**
May form; Bromine, hydrogen bromide, Sodium oxides

**Hazardous reactions**
Product will not undergo hazardous polymerization.

**Thermal decomposition**
No data

**11. TOXICOLOGICAL INFORMATION**

**Acute oral toxicity**
SODIUM BROMIDE

<table>
<thead>
<tr>
<th>Species</th>
<th>LD 50</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,200 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>
Acute inhalation toxicity
SODIUM BROMIDE : no data available

Acute dermal toxicity
SODIUM BROMIDE : LD 50
Rabbit:
> 2,000 mg/kg

12. ECOLOGICAL INFORMATION

Biodegradability
SODIUM BROMIDE : no data available

Bioaccumulation
SODIUM BROMIDE : no data available

Ecotoxicity effects

Toxicity to fish
SODIUM BROMIDE : 96 h LC 50 Fathead minnow (Pimephales promelas):
15,614.00 - 17,428.00 mg/L Method: Static; Mortality

Toxicity to daphnia and other aquatic invertebrates.
SODIUM BROMIDE : 48 h EC 50 Water flea (Daphnia magna): 5,700.00 -
10,800.00 mg/L Method: Static Intoxication

Toxicity to algae
SODIUM BROMIDE : no data available

Toxicity to bacteria
SODIUM BROMIDE : no data available

Biochemical Oxygen Demand (BOD)
13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Dispose of in accordance with all applicable local, state and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds or 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 or Regional Office of the EPA. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

REGULATION

<table>
<thead>
<tr>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. DOT - ROAD</td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - RAIL</td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - INLAND WATERWAYS</td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TRANSPORT CANADA - ROAD
Drewbrom® PRECURSOR
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Not dangerous goods

TRANSPORT CANADA - RAIL
Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS
Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER
Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SARA Hazard Classification
Acute Health Hazard
New Jersey RTK Label Information
WATER 7732-18-5
16. OTHER INFORMATION

It is a violation of federal law to use this product in a manner inconsistent with its labeling. The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751). The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the...
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