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

Product name: ACTISALT 8
Product code: 2200456-0450-5-000
Synonyms: No information available

Supplier: ATOTECH CANADA LTD.
1180 CORPORATE DRIVE
BURLINGTON, ON., L7L 5R6
TELEPHONE: 905-332-0111
MONDAY - FRIDAY HOURS: 8:00am - 5:00pm EST

ATOTECH USA INC
1750 OVERVIEW DRIVE
ROCK HILL, SC 29730
TELEPHONE: 803-817-3500
MONDAY - FRIDAY HOURS: 9:00am - 5:00pm EST

Emergency telephone numbers:
SPILLS AND TRANSPORT CHEMTREC (USA): 800-424-9300
CANUTEC (CANADA): 613-996-6666
TRANSPORT MEDICAL ROCKY MOUNTAIN POISON CONTROL CENTER: 303-623-5716

2. HAZARDS IDENTIFICATION

This material is considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This material is a controlled product under WHMIS.

Potential health & environmental effects

Properties affecting health: Contact causes severe skin irritation and possible burns.


Skin contact: Contact causes severe skin irritation and possible burns. Prolonged skin contact causes burns. Corrosive. The fluoride ion is capable of penetrating the skin where it will attack underlying tissues and bone. Large burns (over 25 square inches) may cause depletion of calcium in the body (hypocalcemia) and other toxic effects which can persist for several weeks and may be fatal.

Eye contact: Contact with eyes may cause irritation. May cause burns. Risk of serious damage to eyes. The substance has delayed effects.

Inhalation: Irritating to respiratory system. May cause burns. May be harmful if inhaled. The substance has delayed effects.

Ingestion: Irritating to mouth, throat and stomach. May cause burns. May be harmful if swallowed. May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

SAP Number: 2200456-0450-5-000 Product name: ACTISALT 8
Description: Aqueous solution of chemicals

**INGREDIENTS (BY WEIGHT PERCENT)**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate</td>
<td>7681-38-1</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

This product may contain component(s) that are not listed under disclosure. All components not listed do not contain hazardous materials above deminimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

### 4. FIRST AID MEASURES

**General advice:**
Immediate medical attention is required. Consult a physician.

**Skin contact:**
Call a physician immediately. Rinse with plenty of water.

**Inhalation:**
Artificial respiration and/or oxygen may be necessary. Immediate medical attention is required.

**Eye contact:**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.

**Ingestion:**
If swallowed, do not induce vomiting - seek medical advice. Immediate medical attention is required.

**Notes to physician:**
Remove victim from contaminated area. Immediately flush skin with plenty of water paying particular attention to the underside of fingernails for a minimum of 15 minutes or until medical treatment is available. Remove all contaminated clothing and shoes while washing continuously. After thorough washing for at least 15 minutes, the burned area should be immersed in a solution of 0.13% iced aqueous benzalkonium chloride until pain is relieved. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into burn area (hands should be protected by latex gloves to prevent secondary contamination) until the pain is relieved. The toxicity of fluoride compounds results primarily from the release of the free fluoride ion into the tissue. This toxicity closely resembles that of dilute hydrofluoric acid. The clinical effects of fluoride ion exposure depend on the concentration, the location and extent of exposure, and the duration of exposure. The most serious effects include potenially fatal hypocalcemia, deeply penetrating and extremely painful condition of brittle bones and calcified ligaments. Treatment modalities include copious water rinse followed by local application of calcium gluconate gel, subcutaneous injection of calcium gluconate solution, soaking with iced zephiran, or iced hyamine, or, in cases of intractable pain from exposure to fingers, intra-arterial calcium gluconate. Eye exposures are treated with copious water rinse followed by continuous irrigation with calcium gluconate solution. Eye exposure should be evaluated by an ophthalmologist.

**Protection of first-aiders:**
Wear personal protective equipment.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons:**
No information available

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear. Use personal protective equipment.
Special hazards arising from the substance or mixture: Reacts with water to form a weak sulfuric acid solution. In the event of fire, the following can be released: carbon oxides, Sulphur oxides, hydrogen fluoride.

Unusual hazards: None under normal use.

Specific methods: Water mist may be used to cool closed containers.

Flash Point: The product is not flammable
Flash point test method: Not applicable
Autoignition temperature: Not applicable

Flammability Limits in Air:
- Lower: Not applicable.
- Upper: Not applicable.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Use personal protective equipment as required.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Do not flush into surface water or sanitary sewer system. May cause long lasting harmful effects to aquatic life.

**Methods for containment:** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up:** For a spill involving a solid material, clean up promptly by scoop or vacuum. Avoid dust formation. Keep in suitable, closed containers for disposal. Dispose of as special waste in compliance with local and national regulations.

### 7. HANDLING AND STORAGE

**Handling**
- Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation. Keep away from open flames, hot surfaces and sources of ignition.
- Safe handling advice: Avoid contact with skin, eyes and clothing. Do not breathe vapors/dust. Do not ingest. Avoid dust formation.

**Storage**
- Technical measures/storage conditions: Keep tightly closed in a dry, cool and well-ventilated place. Protect from moisture.
- Shelf Life (days): 1095

**Storage Temperature**
- Keep above: 23 °F / -5 °C
- Keep below: 104 °F / 40 °C

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:** Ensure adequate ventilation, especially in confined areas.

**Individual protection measures**
- **Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment.
- **Hand protection:** Protective gloves.
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect. Impervious clothing. Chemical resistant apron. Boots. Consult glove/clothing manufacturer to determine the most suitable chemical resistant glove/clothing for user’s application. Consideration must be given to durability and permeation resistance.

Eye protection: Tightly fitting safety goggles. Face-shield. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

<table>
<thead>
<tr>
<th>Exposure limits</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td>TWA</td>
<td>STEL</td>
<td>Ceilings</td>
</tr>
<tr>
<td>Sodium bisulfate 7681-38-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium fluoride 7681-49-4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor:</td>
<td>None</td>
</tr>
<tr>
<td>pH:</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Melting point:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor density:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>pH</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Boiling point:</td>
<td>&gt; 212 °F (&gt; 100 °C)</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>ca. 23 hPa</td>
</tr>
<tr>
<td>Solubility in other solvents:</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Flash Point: The product is not flammable
Autoignition temperature: Not applicable
Flash point test method: Not applicable
Decomposition temperature: Not applicable

Explosion limits:
Upper: Not applicable
Lower: Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.


Conditions to avoid: Incompatible products. Extremes of temperature and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.

Hazardous decomposition products: In case of fire hazardous decomposition products may be produced such as, hydrogen fluoride, Carbon oxides, sulfur oxides.

Hazardous reactions: Contact with strong acids will produce hydrofluoric acid. Reacts with water to form a weak sulfuric acid solution.
11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

<table>
<thead>
<tr>
<th>Components</th>
<th>LD50/oral/rat</th>
<th>LC50/inhalation/rat</th>
<th>LD50/dermal/rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate - 7681-38-1</td>
<td>2490 mg/kg</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Sodium fluoride - 7681-49-4</td>
<td>52 mg/kg</td>
<td>No information available</td>
<td>175 mg/kg</td>
</tr>
</tbody>
</table>

Product Information

- LC50/inhalation/rat = No information available
- LD50/dermal/rabbit = No information available
- LD50/oral/rat = No information available

Local effects

- **Skin contact:** Irritating to skin. Causes skin burns. Corrosive. The fluoride ion is capable of penetrating the skin where it will attack underlying tissues and bone. Large burns (over 25 square inches) may cause depletion of calcium in the body (hypocalcemia) and other toxic effects which can persist for several weeks and may be fatal.
- **Eye contact:** Severe eye irritation. Risk of serious damage to eyes. The substance has delayed effects.
- **Inhalation:** Contact causes severe skin irritation and possible burns. May cause damage to organs if inhaled. Symptoms may be delayed.
- **Ingestion:** Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance. May cause damage to organs if swallowed.

Specific effects

- **Carcinogenic effects:** No information available
- **Mutagenic effects:** No information available
- **Reproductive toxicity:** No information available
- **Target organ effects:** Skeletal system. Bone.

Carcinogenic substances

<table>
<thead>
<tr>
<th>Components</th>
<th>NTP:</th>
<th>IARC:</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>A4 - Not Classifiable as a Human Carcinogen</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Environmental hazard

- **Toxicity:** Not determined.
- **Aquatic toxicity:** Harmful to fish and other water organisms
- **Mobility:** No information available
- **Bioaccumulative potential:** Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate - 7681-38-1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### Components

**Freshwater Algae**

<table>
<thead>
<tr>
<th>Components</th>
<th>96 h EC50 Selenastrum capricornutum = 272 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride - 7681-49-4</td>
<td></td>
</tr>
</tbody>
</table>

**Freshwater Fish Species**

<table>
<thead>
<tr>
<th>Components</th>
<th>96 h LC50 (Lepomis macrochirus) &gt; 530 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride - 7681-49-4</td>
<td></td>
</tr>
</tbody>
</table>

### Components

**Microtoxicity**

<table>
<thead>
<tr>
<th>Components</th>
<th>48 h EC50 = 190 mg/L</th>
<th>48 h EC50 = 338 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate - 7681-38-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sodium fluoride - 7681-49-4 |                      |

### 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:** Dispose of in accordance with federal, provincial, state, and local regulations

**Contaminated packaging:** Empty containers should be taken for local recycling, recovery or waste disposal

### 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

**DOT (USA)**

- **Proper shipping name DOT:** NON REGULATED
- **Description (DOT):** NON REGULATED

**TDG (Canada)**

- **Proper shipping name TDG:** NON REGULATED
- **Description (TDG):** NON REGULATED

### 15. REGULATORY INFORMATION

**International Inventories**

All of the components in this product are on or exempt from the following inventories:

- USA (TSCA), CANADA (DSL / NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

**International Inventory Legend**

- TSCA: US - Toxic Substance Control Act
- DSL: Canada - Domestic Substance List
- NDSL: Canada - Non-Domestic Substance List
- IECSC: China - Inventory of Existing Chemical Substances China
- EINECS: EU Inventory of Existing Commercial Chemical Substances
- ELINCS: EU List of Notified Chemical Substances
- ECL: Korea - Existing Chemicals List
- AICS: Australia - Inventory of Chemical Substances
- ENCS: Japan - Existing and New Chemical Substances
- PICCS: Philippines - Inventory of Chemicals and Chemical Substances

**U.S. Regulations:**

**HAZARDOUS COMPONENTS**

<table>
<thead>
<tr>
<th>Components</th>
<th>CA PROP 65</th>
<th>SARA 302</th>
<th>SARA 313</th>
<th>CERCLA RQ</th>
<th>TSCA 12(b)</th>
<th>CWC</th>
<th>DEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bisulfate - 7681-38-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| Sodium fluoride - 7681-49-4 | -          | -        | -        | 1000 lb   | 454 kg     | -   | -   |

Revision date: 25-Aug-2011

SAP Number: 2200456-04500  Product name: ACTISALT 8  
5-000
Product name: ACTISALT 8

**U.S. Regulations Legend**

- CA PROP 65: California Proposition 65 - Carcinogens List
- TSCA 12(b): TSCA Section 12(b) - Export Notification
- SARA 313: CERCLA/SARA - Section 313 - Emission Reporting
- CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities
- CW: Chemical Weapons Convention - Annex on Chemicals
- DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and / or Essential Chemicals

<table>
<thead>
<tr>
<th>SARA 311</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
</tr>
<tr>
<td>Fire Hazard</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
</tr>
<tr>
<td>Reactive Hazard</td>
</tr>
</tbody>
</table>

**Canada**

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**WHMIS Controlled List**

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>Sodium bisulfate</td>
</tr>
<tr>
<td>Sodium fluoride</td>
</tr>
</tbody>
</table>

**WHMIS hazard class:**
- E Corrosive material
- D2B Toxic materials

**Substances currently restricted by WEEE/RoHS (European Directive 2002/96/EC, 2002/95/EC) or ELV (European Directive 2000/53/EC):**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PBDE</td>
<td>PBB</td>
<td>Cr(VI)</td>
<td>Hg</td>
<td>Pb</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**16. OTHER INFORMATION**

**NFPA:**
- Health: 2
- Flammability: 0
- Instability: 0

CAREFULLY READ THE FOLLOWING: The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al. at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.
THE INFORMATION CONTAINED HEREIN, TO THE BEST OF OUR KNOWLEDGE, IS CONSIDERED TO BE ACCURATE. SUCH INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION, AND WE DO NOT SUGGEST OR GUARANTEE THAT ANY PRECAUTIONS, PROCEDURES, RECOMMENDATIONS ETC. ARE PREFERRED OR UNIQUE. ATOTECH USA INC. AND ATOTECH CANADA LTD. MAKE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE USE OF THIS INFORMATION OR THE USE OF MATERIAL IDENTIFIED HEREIN, IN COMBINATION WITH ANY OTHER MATERIAL OR PROCESS, AND ASSUMES NO RESPONSIBILITY THEREFORE. THIS DOCUMENT WAS DEVELOPED UNDER THE REQUIREMENTS OF THE UNITED STATES AND CANADA, AND AS SUCH MAY NOT SATISFY OTHER STATE, PROVINCIAL OR REGIONAL REQUIREMENTS.

Prepared by: H.E.S. Department