SAFETY DATA SHEET

1. Identification

Product identifier: DEVCON® Aluminum Liquid (F-2) Resin

Other means of identification:

- SKU#: 0103

Recommended use: Not available.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

- Company name: ITW Performance Polymers
- Address: 35 Brownridge Rd, Unit 1, Halton Hills, ON L7G 0C6
- Contact person: Customer Service
- Telephone number: 978-777-1100
- Fax: Not available.
- E-mail: Not available.
- Emergency telephone number: 800-424-9300
- Supplier: Not available.

2. Hazard identification

Physical hazards: Not classified.

Health hazards:

- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2A
- Sensitization, skin: Category 1

Environmental hazards: Not classified.

Label elements:

- Signal word: Warning
- Hazard statement: Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.
- Precautionary statement:
  - Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
  - Storage: Store away from incompatible materials.
  - Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.
- Other hazards: None known.
- Supplemental information: None.

3. Composition/information on ingredients

Mixtures:

Material name: DEVCON® Aluminum Liquid (F-2) Resin
4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Most important symptoms/effects, acute and delayed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Pyrophoric powder.</td>
</tr>
<tr>
<td>Calcium carbonate (CAS 1317-65-3)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Dust.</td>
</tr>
</tbody>
</table>

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Calcium carbonate (CAS 1317-65-3)</td>
<td>STEL</td>
<td>20 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Welding fume.</td>
</tr>
<tr>
<td>Calcium carbonate (CAS 1317-65-3)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

#### Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Flake (CAS 7429-90-5)</td>
<td>15 minute</td>
<td>20 mg/m³</td>
<td>Dust.</td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>10 mg/m³</td>
<td>Pyrophoric powder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>Pyrophoric powder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Dust.</td>
</tr>
<tr>
<td>Calcium carbonate (CAS 1317-65-3)</td>
<td>15 minute</td>
<td>20 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### Biological limit values

No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Wear appropriate chemical resistant gloves.

Hand protection

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Other

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Paste.</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid.</td>
</tr>
<tr>
<td>Form</td>
<td>Paste.</td>
</tr>
<tr>
<td>Colour</td>
<td>Grey.</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>320 °C (608 °F) estimated</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 204.4 °C (&gt; 399.9 °F)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit – upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other information</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>2.17 g/cm3 estimated</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not oxidising.</td>
</tr>
</tbody>
</table>
10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

Incompatible materials
Strong oxidising agents.

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure
- Inhalation: No adverse effects due to inhalation are expected.
- Skin contact: Causes skin irritation. May cause an allergic skin reaction.
- Eye contact: Causes serious eye irritation.
- Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects
- Acute toxicity: Not known.
- Skin corrosion/irritation: Causes skin irritation.
- Serious eye damage/eye irritation: Causes serious eye irritation.

Respiratory or skin sensitisation
- Canada - Alberta OELs: Irritant
  - Aluminum Flake (CAS 7429-90-5) Irritant
  - Calcium carbonate (CAS 1317-65-3) Irritant
- Respiratory sensitisation: Not a respiratory sensitizer.
- Skin sensitisation: May cause an allergic skin reaction.
- Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
- ACGIH Carcinogens
- Canada - Manitoba OELs: carcinogenicity
  - Aluminum Flake (CAS 7429-90-5) Not classifiable as a human carcinogen.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.
13. Disposal considerations

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

**TDG**
Not regulated as dangerous goods.

**IATA**
Not regulated as dangerous goods.

**IMDG**
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable.

15. Regulatory information

**Canadian regulations**
This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

- **Controlled Drugs and Substances Act**
  - Not regulated.

- **Export Control List (CEPA 1999, Schedule 3)**
  - Not listed.

- **Greenhouse Gases**
  - Not listed.

  - Aluminum Flake (CAS 7429-90-5)

- **Precursor Control Regulations**
  - Not regulated.

**International regulations**

- **Stockholm Convention**
  - Not applicable.

- **Rotterdam Convention**
  - Not applicable.

- **Kyoto Protocol**
  - Not applicable.

- **Montreal Protocol**
  - Not applicable.

- **Basel Convention**
  - Not applicable.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Country(s) or region | Inventory name | On inventory (yes/no)*
---|---|---
Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No
Europe | European List of Notified Chemical Substances (ELINCS) | No
Japan | Inventory of Existing and New Chemical Substances (ENCS) | No
Korea | Existing Chemicals List (ECL) | Yes
New Zealand | New Zealand Inventory | Yes
Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes
Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date: 29-May-2019
Version No.: 01

Disclaimer:
ITW Performance Polymers cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.
1. Identification

Product identifier: Aluminum Liquid (F-2) Hardener

Other means of identification

SKU#: 5331

Recommended use: Not available.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Company name: ITW Performance Polymers

Address:
35 Brownridge Rd
Unit 1
Halton Hills, ON L7G 0C6

Contact person: Customer Service

Telephone number: 978-777-1100

Fax: 800-424-9300

E-mail: 800-424-9300

Supplier telephone number: Not available.

2. Hazard identification

Physical hazards: Not classified.

Health hazards:
- Acute toxicity, oral: Category 4
- Acute toxicity, dermal: Category 4
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1
- Sensitization, skin: Category 1

Environmental hazards: Not classified.

Label elements

Signal word: Danger

Hazard statement:
Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage.

Precautionary statement

Prevention:
Do not breathe mist/vapours. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage:
Store locked up.

Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards: None known.
3. Composition/information on ingredients

**Mixtures**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl alcohol</td>
<td></td>
<td>100-51-6</td>
<td>10 - 30</td>
</tr>
<tr>
<td>TRIETHYLENETETRAMINE</td>
<td></td>
<td>112-24-3</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control centre immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately. Chemical burn must be treated by a physician. Wash contaminated clothing before reuse.

**Ingestion**
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Most important symptoms/effects, acute and delayed**
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**Indication of immediate medical attention and special treatment needed**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

**Suitable extinguishing media**
Alcohol resistant foam. Powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Use water spray to reduce vapours or divert vapour cloud drift. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling
Do not breathe mist/vapours. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIETHYLENETETRAMINE (CAS 112-24-3)</td>
<td>TWA</td>
<td>3 mg/m^3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ppm</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Canada - Ontario OELs: Skin designation
TRIETHYLENETETRAMINE (CAS 112-24-3) Can be absorbed through the skin.

Appropriate engineering controls
Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Skin protection

Hand protection
Wear appropriate chemical resistant gloves.

Other
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations
Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state
Liquid.

Form
Liquid.

Colour
Amber.

Odour
Amine-like.

Odour threshold
Not available.

pH
Not available.

Melting point/freezing point
-15.2 °C (4.64 °F) estimated

Initial boiling point and boiling range
216 °C (420.8 °F) estimated

Flash point
93.3 °C (199.9 °F) estimated

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.
**Flammability limit - upper (%)**  
Not available.

**Explosive limit - lower (%)**  
Not available.

**Explosive limit – upper (%)**  
Not available.

**Vapour pressure**  
5.73 hPa estimated

**Vapour density**  
Not available.

**Relative density**  
Not available.

**Solubility(ies)**
- **Solubility (water)**  
Not available.

**Partition coefficient (n-octanol/water)**  
Not available.

**Auto-ignition temperature**  
337.78 °C (640 °F) estimated

**Decomposition temperature**  
Not available.

**Viscosity**  
Not available.

**Other information**
- **Density**  
0.97 g/cm³ estimated
- **Explosive properties**  
Not explosive.
- **Flammability class**  
Combustible IIIB estimated
- **Oxidising properties**  
Not oxidising.
- **Specific gravity**  
0.97 estimated
- **VOC**  
100 % SOLIDS

### 10. Stability and reactivity

**Reactivity**
The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability**
Material is stable under normal conditions.

**Possibility of hazardous reactions**
Hazardous polymerisation does not occur.

**Conditions to avoid**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

**Incompatible materials**
Peroxides. Phenols.

**Hazardous decomposition products**
No hazardous decomposition products are known.

### 11. Toxicological information

**Information on likely routes of exposure**
- **Inhalation**  
May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
- **Skin contact**  
Causes severe skin burns. Harmful in contact with skin. May cause an allergic skin reaction.
- **Eye contact**  
Causes serious eye damage.
- **Ingestion**  
Causes digestive tract burns. Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**
 Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Information on toxicological effects**

**Acute toxicity**
Harmful in contact with skin. Harmful if swallowed.

**Components**

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl alcohol (CAS 100-51-6)</td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
</tr>
</tbody>
</table>
Components | Species | Test Results
--- | --- | ---
TRIETHYLENETETRAMINE (CAS 112-24-3)

**Acute**

**Dermal**
- Liquid
  - LD50
    - Rat: 1465 mg/kg

**Oral**
- Liquid
  - LD50
    - Rat: 1716 mg/kg

**Skin corrosion/irritation**
Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Respiratory or skin sensitisation**
- Respiratory sensitisation
  - Not a respiratory sensitizer.
- Skin sensitisation
  - May cause an allergic skin reaction.
- Germ cell mutagenicity
  - No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- Carcinogenicity
  - Not available.
- Reproductive toxicity
  - This product is not expected to cause reproductive or developmental effects.
- Specific target organ toxicity - single exposure
  - Not classified.
- Specific target organ toxicity - repeated exposure
  - Not classified.
- Aspiration hazard
  - Not an aspiration hazard.
- Chronic effects
  - Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity**
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**
No data is available on the degradability of any ingredients in the mixture.

**Bioaccumulative potential**
- Partition coefficient n-octanol / water (log Kow)
  - Benzyl alcohol
    - 1.1
- Mobility in soil
  - No data available.
- Other adverse effects
  - The product contains volatile organic compounds which have a photochemical ozone creation potential.

**13. Disposal considerations**

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**TDG**
- **UN number**: UN2735
- **UN proper shipping name**: AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, Aliphatic Amines), Limited Quantity
Transport hazard class(es)
- Class 8
- Subsidiary risk -

Packing group II

Environmental hazards Not available.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA
- UN number UN2735
- UN proper shipping name Amines, liquid, corrosive, n.o.s. (TRIETHYLENETETRAMINE, Aliphatic Amines), Limited Quantity
- Transport hazard class(es)
  - Class 8
  - Subsidiary risk -
  - Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information
- Passenger and cargo aircraft Allowed with restrictions.
- Cargo aircraft only Allowed with restrictions.

IMDG
- UN number UN2735
- UN proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, Aliphatic Amines), Limited Quantity
- Transport hazard class(es)
  - Class 8
  - Subsidiary risk -
  - Packing group II
  - Marine pollutant No.
  - EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Not established.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IATA

IMDG; TDG

General information IMDG Regulated Marine Pollutant.
15. Regulatory information

Canadian regulations
This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act
Not regulated.

Export Control List (CEPA 1999, Schedule 3)
Not listed.

Greenhouse Gases
Not listed.

Precursor Control Regulations
Not regulated.

International regulations

Stockholm Convention
Not applicable.

Rotterdam Convention
Not applicable.

Kyoto Protocol
Not applicable.

Montreal Protocol
Not applicable.

Basel Convention
Not applicable.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 29-May-2019
Version No. 01

Disclaimer
ITW Performance Polymers cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.