SAFETY DATA SHEET

1. Identification

Product identifier
DEVCON® Titanium Putty Resin

Other means of identification
SKU# 0113

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

E-mail
800-424-9300

Emergency telephone number
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
- Specific target organ toxicity following single exposure
  Category 3 narcotic effects

Environmental hazards
Not classified.

Label elements

Signal word
Warning

Hazard statement
Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention
Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear eye protection/face protection. Wear protective gloves.

Response
IF ON SKIN: Wash with plenty of 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. Call a POISON CENTRE/doctor if you feel unwell. 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 in a well-ventilated place. Keep container tightly closed. Store locked up.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FERROSILICON</td>
<td></td>
<td>8049-17-0</td>
<td>40 - 70</td>
</tr>
<tr>
<td>Epoxy Resin:--reaction Product Of Bisphenol A And Epichlorohydrin (refer To Epichlorohydrin)</td>
<td></td>
<td>25068-38-6</td>
<td>15 - 40</td>
</tr>
<tr>
<td>Aromatic Hydrocarbon Solvents</td>
<td></td>
<td>64742-95-6</td>
<td>0.11</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td></td>
<td>7 - 13</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**
- Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.

**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**
- May cause drowsiness and dizziness. Headache. Nausea, vomiting. 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. 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**

**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. Avoid breathing 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**
- 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.

**Environmental precautions**
- Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
- Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling: Avoid breathing mist/vapours. 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 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: No exposure limits noted for ingredient(s).

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: Chemical respirator with organic vapour cartridge and full facepiece.

- Skin protection: Wear appropriate chemical resistant gloves.

- Hand protection: Wear appropriate chemical resistant clothing.

- Other: Wear appropriate chemical resistant clothing.

- Respiratory protection: Chemical respirator with organic vapour cartridge and full facepiece.

- Thermal protection: 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

Appearance:
- Physical state: Viscous. Liquid.
- Form: Viscous. Liquid.
- Colour: Not available.

Odour: Slight.

Odour threshold: Not available.

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling range: 320 °C (608 °F) estimated

Flash point: > 204.4 °C (> 399.9 °F)

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: Not available.

Vapour density: Not available.

Relative density: Not available.

Solubility(ies):
- Solubility (water): Not available.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

Other information
- Density 1.52 g/cm³ estimated
- Explosive properties Not explosive.
- Flammability class Combustible IIIB estimated
- Oxidising properties Not oxidising.
- Specific gravity 1.52 estimated
- VOC 0 g/l

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
- 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

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
  - 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 May cause drowsiness and dizziness.
- 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.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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 established.

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>No</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>No</td>
</tr>
<tr>
<td>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</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>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</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.
# SAFETY DATA SHEET

## 1. Identification

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>DEVCON® Titanium Putty Hardener</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>5318N</td>
</tr>
<tr>
<td>SKU#</td>
<td>Not available.</td>
</tr>
<tr>
<td>Recommended use</td>
<td>Not available.</td>
</tr>
<tr>
<td>Recommended restrictions</td>
<td>None known.</td>
</tr>
</tbody>
</table>

**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**

- **SKU#**: 5318N

## 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**: Avoid breathing dust/fume/gas/mist/vapours/spray. 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>FERROSILICON</td>
<td></td>
<td>8049-17-0</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Formaldehyde, Oligomeric Reaction</td>
<td></td>
<td>32610-77-8</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Products With Phenol And Triethylenetetramine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass Oxide</td>
<td></td>
<td>65997-17-3</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Phenol</td>
<td></td>
<td>108-95-2</td>
<td>5 - 10</td>
</tr>
<tr>
<td>TRIETHYLENETETRAMINE</td>
<td></td>
<td>112-24-3</td>
<td>5 - 10</td>
</tr>
<tr>
<td>1h-imidazole, 2-ethyl-4-methyl-</td>
<td></td>
<td>931-36-2</td>
<td>5.15</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td></td>
<td>13463-67-7</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Methylimidazole, 4-</td>
<td></td>
<td>822-36-6</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Other components below reportable levels 19.44

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.

#### Ingestion
Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

#### Most important symptoms/effects, acute and delayed
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.

#### Indication of immediate medical attention and special treatment needed
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.

#### General information
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
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.
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. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing dust/fume/gas/mist/vapours/spray. 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>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td></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>Glass Oxide (CAS 65997-17-3)</td>
<td>TWA</td>
<td>0.2 fibers/cm³ Fiber.</td>
<td>5 mg/m³ Total particulate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ Fiber, total</td>
<td></td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>19 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></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>Glass Oxide (CAS 65997-17-3)</td>
<td>TWA</td>
<td>0.2 fibers/cm³ Fiber.</td>
<td>5 mg/m³ Inhalable fibers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>3 mg/m³ Respirable fraction.</td>
<td>10 mg/m³ Total dust.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
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<th>Components</th>
<th>Type</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Glass Oxide (CAS 65997-17-3)</td>
<td>TWA</td>
<td>5 mg/m³ Inhalable fraction.</td>
<td></td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Components</td>
<td>Type</td>
<td>Value</td>
<td>Form</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------</td>
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</tr>
<tr>
<td>Glass Oxide (CAS 65997-17-3)</td>
<td>TWA</td>
<td>0.5 fibers/ml</td>
<td>Respirable fibers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td></td>
</tr>
<tr>
<td>TRIETHYLENETETRAMINE (CAS 112-24-3)</td>
<td>TWA</td>
<td>3 mg/m3</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ppm</td>
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<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1 fibers/cm3n</td>
<td>Fiber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>fibers, total dust</td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>TWA</td>
<td>19 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Oxide (CAS 65997-17-3)</td>
<td>15 minute</td>
<td>10 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>0.2 fibers/cc</td>
<td>Respirable fibers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>15 minute</td>
<td>7.5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</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**

<table>
<thead>
<tr>
<th>ACGIH Biological Exposure Indices Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHENOL (CAS 108-95-2)</td>
<td>250 mg/g</td>
<td>Phenol with hydrolysis</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

**Exposure guidelines**

- **Canada - Alberta OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.

- **Canada - British Columbia OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.

- **Canada - Manitoba OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.

- **Canada - Ontario OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.
  - TRIETHYLENETETRAMINE (CAS 112-24-3): Can be absorbed through the skin.

- **Canada - Quebec OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.

- **Canada - Saskatchewan OELs: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.

- **US ACGIH Threshold Limit Values: Skin designation**
  - Phenol (CAS 108-95-2): Can be absorbed through the skin.
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.

**Thermal hazards**
Wear appropriate thermal protective clothing, when necessary.

**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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Paste</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Solid</td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>Paste</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Off-white</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Ammoniacal</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>12 °C (53.6 °F) estimated</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>266 °C (510.8 °F) estimated</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>135.6 °C (276.1 °F) estimated</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td></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><strong>Vapour pressure</strong></td>
<td>0.001 hPa estimated</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>337.78 °C (640 °F) estimated</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1.65 g/cm³ estimated</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not explosive</td>
</tr>
</tbody>
</table>

Material name: DEVCON® Titanium Putty Hardener

5318N   Version #: 01   Issue date: 29-May-2019
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. 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><strong>Methylimidazole, 4- (CAS 822-36-6)</strong></td>
<td></td>
</tr>
<tr>
<td>Acute Dermal</td>
<td></td>
</tr>
<tr>
<td>LD50 Rabbit</td>
<td>440 mg/kg</td>
</tr>
<tr>
<td><strong>TRIETHYLENETETRAMINE (CAS 112-24-3)</strong></td>
<td></td>
</tr>
<tr>
<td>Acute Dermal Liquid</td>
<td></td>
</tr>
<tr>
<td>LD50 Rat</td>
<td>1465 mg/kg</td>
</tr>
<tr>
<td>Oral Liquid</td>
<td></td>
</tr>
<tr>
<td>LD50 Rat</td>
<td>1716 mg/kg</td>
</tr>
</tbody>
</table>

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

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitisation

Canada - Alberta OELs: Irritant

<table>
<thead>
<tr>
<th>Irritant</th>
<th>Irritant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Oxide (CAS 65997-17-3)</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td></td>
</tr>
</tbody>
</table>

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
Risk of cancer cannot be excluded with prolonged exposure.

ACGIH Carcinogens

<table>
<thead>
<tr>
<th>A2 Suspected human carcinogen.</th>
<th>A4 Not classifiable as a human carcinogen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Oxide (CAS 65997-17-3)</td>
<td></td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td></td>
</tr>
</tbody>
</table>
Titanium dioxide (CAS 13463-67-7) Not classifiable as a human carcinogen.

Canada - Alberta OELs: Carcinogen category
Glass Oxide (CAS 65997-17-3) Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity
Glass Oxide (CAS 65997-17-3) Suspected human carcinogen.
Phenol (CAS 108-95-2) Not classifiable as a human carcinogen.
Titanium dioxide (CAS 13463-67-7) Not classifiable as a human carcinogen.

Canada - Quebec OELs: Carcinogen category
Glass Oxide (CAS 65997-17-3) Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity
Methylimidazole, 4- (CAS 822-36-6) 2B Possibly carcinogenic to humans.
Phenol (CAS 108-95-2) 3 Not classifiable as to carcinogenicity to humans.
Titanium dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

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. Prolonged exposure may cause chronic effects.

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)
Phenol 1.46

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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 UN3259
UN proper shipping name AMINES, SOLID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, Methylimidazole, 4-), Limited Quantity

Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards Not available.

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

IATA

UN number UN3259
UN proper shipping name: Amines, solid, corrosive, n.o.s. (TRIETHYLENETETRAMINE, Methylimidazole, 4-), Limited Quantity

Transport hazard class(es)
Class: 8
Subsidiary risk: -

Packing group: III
Environmental hazards: No.
ERG Code: 8L

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: UN3259
UN proper shipping name: AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, Methylimidazole, 4-), Limited Quantity

Transport hazard class(es)
Class: 8
Subsidiary risk: -

Packing group: III
Environmental hazards: No.
Marine pollutant: No.
EmS: F-A, S-B

Special precautions for user: Read safety instructions, SDS and emergency procedures before handling. Not applicable.

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

IATA

IMDG; TDG

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.
Greenhouse Gases: Not listed.

Phenol (CAS 108-95-2)

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
Glass Oxide (CAS 65997-17-3)

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>No</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>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</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>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</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.