SECTION 1, PRODUCT AND COMPANY IDENTIFICATION

Product Name: TPR² Fireshell Ultra F1E, F1EP, ICP, F1ES
Effective Date: May 22, 2015
Product Use/Class: Fire Retardant Coating
Manufacturer: TPR² Corporation
Preparer: Chemistry Department, TPR² Corporation
36 Plains Road
Essex, CT 06426 USA
1-860-767-8772
In Case of Emergency: CHEMTREC
1-800-424-9300
Supersedes: New

SECTION 2, HAZARDS IDENTIFICATION

GHS Classification:

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
<th>Route of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity – Inhalation</td>
<td>4</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>2B</td>
<td>Eye</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>2</td>
<td>Skin</td>
</tr>
</tbody>
</table>

Signal word: Warning

Symbol(s): !

Hazard Statements:
- Harmful if inhaled
- Causes eye irritation
- Causes skin irritation

Precautionary Statements:
- Avoid breathing mist/spray
- Wear eye protection
- Avoid contact with exposed skin
- Wear protective gloves
- Wash thoroughly after handling

Response:
- If inhaled: Remove person to fresh air
- If in eyes: Rinse with water for several minutes
- If eye irritation persists: Get medical attention
- If on skin: Wash with soap and water
- If skin irritation persists: Get medical attention

Storage:
- Store material in cool dry place

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

### Section 3, Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Wt. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Trihydrate</td>
<td>21645-51-2</td>
<td>20-50</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>1-10</td>
</tr>
<tr>
<td>Expandable Flake Graphite</td>
<td>12777-87-6</td>
<td>5-10</td>
</tr>
</tbody>
</table>

### Section 4, First Aid Measures

**General** – If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: get medical attention

**First Aid – Skin Contact:** Wash with soap and water. Remove contaminated clothing. If persistent irritation occurs, seek medical attention.

**First Aid – Eye Contact:** Flush eyes for at least 15 minutes. Seek medical attention if irritation persists.

**First Aid – Ingestion:** If swallowed: Do not induce vomiting. Rinse mouth out with water. If irritation persists: seek medical attention.

### Section 5, Fire Fighting Measures

**Extinguishing Media:** Use ABC dry chemical, foam or carbon dioxide.

**Unusual Fire & Explosion Hazards:** Closed container may rupture (due to a buildup of pressure) when exposed to extreme heat. Carbon monoxide and/or carbon dioxide may be released when exposed to very high temperatures.

**Special Protective Equipment and Precautions for Fire-Fighters:** Wear positive pressure self-contained NIOSH approved breathing equipment and approved protective equipment if necessary.

### Section 6, Accidental Release Measures

**Personal precautions, Protective Equipment, and Emergency Response:** Use personal protective equipment as recommended in section 8.

**Environmental Precautions:** Do not allow material to be released into waterways.

**Methods and materials for containment and cleaning up:** If spilled, absorb with vermiculite or other inert material (i.e. sand). Collect up and place in an appropriate container.

### Section 7, Handling and Storage

**Precautions for safe handling:** When working with any chemical product, use good workplace procedures. Do not cut, puncture, or weld on or near the container. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well ventilated conditions. Avoid skin and eye contact. Avoid inhalation of mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse.
Conditions for safe storage: Keep away from heat, sparks and open flames. Avoid extreme heat or cold. Store above freezing. Do not store in open, unlabeled or mislabeled containers. Keep containers closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty containers.

Section 8, Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Trihydrate</td>
<td>21645-51-2</td>
<td>15 mg/m³ TWA (total dust)</td>
<td>10 mg/m³ TWA (total dust)</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ (respirable dust)</td>
<td>3 mg/m³ (respirable dust)</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>15 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
<td>5000 mg/m³ IDLH</td>
</tr>
<tr>
<td>Expandable Flake</td>
<td></td>
<td>None Listed use 2.0 mg/m³ TWA 3 mg/m³ nuisance dust</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Graphite</td>
<td>12777-87-6</td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Engineering Controls: Use mechanical ventilation (cross, dilution and local exhaust) to control exposure. Local exhaust as required by job conditions to keep TLV below acceptable limits. Refer to OSHA Regulations 29 CFR 1910.94

Respiration Protection: A dust mask should be used in cases where individual are exposed to airborne mists of the material.

Skin Protection: Wear cloth, rubber, or latex gloves. Use long sleeve work cloth or a polypropylene suit.

Eye Protection: Wear proper eye protection; at minimum, safety glasses with side shields.

Section 9, Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Grey Liquid</td>
</tr>
<tr>
<td>Odor:</td>
<td>mild odor</td>
</tr>
<tr>
<td>pH:</td>
<td>6-7</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>&gt;212°F</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>&gt;200°F</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>&gt;1 (water=1)</td>
</tr>
<tr>
<td>Flammability:</td>
<td>N/A</td>
</tr>
<tr>
<td>Lower Exposure Limit:</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Exposure Limit:</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg):</td>
<td>N/A</td>
</tr>
<tr>
<td>Relative Density (kg/mm³):</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific Gravity (H2O=1):</td>
<td>1.25 +/- 0.1</td>
</tr>
<tr>
<td>Physical State:</td>
<td>Grey Liquid</td>
</tr>
<tr>
<td>% Volatiles:</td>
<td>30-40%</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>1500-3000 CPS</td>
</tr>
<tr>
<td>Auto Ignition Temperature:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 10, Stability and Reactivity

Chemical Stability: Stable (normal temperature and conditions)
Possibility of Hazardous Reactions: None
Conditions to Avoid: Avoid high temperatures or freezing. Avoid strong acid, bases and oxidizing agents.
Incompatibility: Strong acid, bases and oxidizing agents.
Section 11, Toxicological Information

Information on likely exposure:

General: Use personal protective equipment to minimize exposure.

Eyes: May cause eye irritation.

Skin: Causes skin irritation.

Inhalation: Protect from high airborne concentrations of mist resulting from spray. May cause irritation of the respiratory tract and mucous membranes.

Ingestions: May cause irritation.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group 2A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group 2B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Known</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suspect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Aluminum Trihydrate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Expandable Flake Graphite</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Acute Toxicity:
No toxicity studies have been conducted on this product.

Titanium Dioxide:
- LD50 Oral: Rat >10,000 mg/kg
- LD50 Inhalation: Rat >6.8 mg/L
- LD50 Dermal: Rat >10,000 mg/kg

Aluminum Trihydrate:
- LD50 Oral: Rat >5,000 mg/kg

Expandable Flake Graphite
- Not Available

Chronic effects: For this category no toxicological test data is available for the whole product.
Carcinogenicity: For this category no toxicological test data is available for the whole product.
Mutagenicity: For this category no toxicological test data is available for the whole product.
Teratogenicity: For this category no toxicological test data is available for the whole product.
Developmental effects: For this category no toxicological test data is available for the whole product.
Fertility effects: For this category no toxicological test data is available for the whole product.
Target Organs: For this category no toxicological test data is available for the whole product.

Section 12, Ecological Information

Ecological Information: No ecological testing has been conducted on this product.
Ecotoxicity:

Persistence and degradability: N/E

Bioaccumulative Potential: N/E
Mobility in Soil: N/E

Section 13, Disposal Considerations

Disposal Information: For waste disposal purposes, this product is not known to be designated as hazardous. Incinerate waste products in accordance with federal, state and local regulations. Liquids cannot be disposed of in a landfill.

Section 14, Transportation Information

Proper Shipping Name: Not regulated
Technical Name: Not regulated
Hazard Class: Not regulated
UN/NA Number: Not regulated
Freight Class: 
Skid(s): 55
Drum(s): 50
Additional Notes: None

Section 15, Regulatory Information

US Regulations
HCS Classification Irritating material, Sensitizing material
SARA 313 – Supplier Notification None per 40 CFR Part 372
SARA 311/312 – U.S. Federal Regulations
Immediate Health (Acute): Yes (Irritant)
Delayed Health (Chronic): No
Fire: No
Pressure: No
Reactive: No
Chemical Inventory List:
U.S. TSCA - All chemicals in this product are listed or exempt from listing.

HMIS Ratings:
Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: G

Volatile Organic Compounds (VOC): <50 g/L

NFPA:
Health: 1 Flammability: 0 Reactivity: 0

Section 16, Other Information

Prepared by: Chemistry Department, TPR² Corporation, USA
Phone: (860)767-8772

To the best of our knowledge, the information contained herein is accurate, obtained from sources believed by TPR² Corporation to be accurate at the time of preparation. TPR2 Corporation does not assume any legal responsibility for use or reliance upon same.