1. Product and company identification

Trade Name

FORPRENE – references in black color (901)

Manufacturer, importer, supplier

Ticona Polymers LTDA
Av. Edgar Hoffmeister, 275 - Anexo A
Parque Tecnológico Vale dos Sinos
CEP 93700-000 - Campo Bom - RS
Brazil
Phone: +55 51 2123 2600   Fax: +55 51 2123 2622

Transportation emergency phone numbers:
In Brazil, call +(55) – 21 3958 1449
In USA, call  800 424 9300
Outside USA, call  +001 703 527 3887, collect calls accepted.

Product Information
Brazil: 55 11 4745 8506
info-engineeredmaterials-am@celanese.com

Identified uses
Plastic processing industry.

2. Hazard Identification

Not a dangerous product according to GHS and ABNT NBR 14725-2 (2014).

Symbols:  None
Signal Word:  None
Hazard Statements:  None
Precautionary Statements:  None

3. Composition/information on ingredients

Chemical cauterization
Ethylene, Propylene, Diene Terpolymer / EPDM, CAS-RN.: 25038-36-2;
Polypropylene with CAS-RN.: 9003-07-0.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>1 – 10</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>1314-13-2</td>
<td>1 – 5</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>&gt; 0.1</td>
</tr>
<tr>
<td>Carbon black</td>
<td>1333-86-4</td>
<td>&gt; 0.1</td>
</tr>
</tbody>
</table>
Remarks
This product may contain proprietary ingredients.
This is a polymeric material. Any hazardous constituents are wetted by the polymer system, and therefore are unlikely to present exposure under normal conditions of processing and handling.

4. First aid measures

Skin
Cool skin rapidly with cold water after contact with molten polymer. Immediate medical attention is required. Do not peel solidified product off the skin.

Eyes
Immediately flush eye(s) with plenty of water. Call a physician if irritation persists. Melted product: Quickly cool the affected area with water or ice. Immediately call a physician.

Inhalation
Move to fresh air in case of accidental inhalation of vapors. Get medical attention immediately if symptoms occur.

Ingestion
If swallowed, do not induce vomiting - seek medical advice.

Notes to physician
This product is essentially inert and nontoxic. However, if it is heated at too high a temperature or if it is burned, gases may be released. Patients who have been exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal, asphyxia (carbon dioxide replacing oxygen) is a possibility. As with any fire, irritant gases may have formed. If patients may have inhaled high concentrations of irritating fumes, they should be monitored for delayed onset pulmonary edema.

5. Fire-fighting measures

NFPA: Health: 1  Flammability: 0  Instability: 0

Suitable extinguishing media
Water, Foam, Dry powder, Carbon dioxide (CO2)

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Carbon dioxide (CO2)
Carbon monoxide

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit.

Other Information
Keep people away from and upwind of fire. Dust can form an explosive mixture in air.
6. Accidental release measures

**Personal precautions**
Do not breathe dust. Avoid dust formation. Ensure adequate ventilation, especially in confined areas.

**Environmental precautions**
Do not flush into surface water or sanitary sewer system.

**Methods for cleaning up**
Use mechanical handling equipment. Dispose of in accordance with local regulations.

7. Handling and storage

**Advice on safe handling**
Do not handle hot or molten material without appropriate protective equipment. Do not exceed recommended process temperatures to minimize release of decomposition products. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Maintain good housekeeping in work areas.

**Protection - fire and explosion:**
Do not smoke in areas where polymer dust is present. Appropriate measures should be taken to control the generation and accumulation of dust during conveying and processing operations. Take measures to prevent the build up of electrostatic charge. All equipment used when handling the product must be grounded. Ground and bond containers when transferring material.

**Technical measures/Storage conditions**
No special storage conditions required.

**Material storage**
Keep in a dry, cool place. Maintain dryness of resin. To maintain product quality, do not store in heat or direct sunlight.

**Incompatible products**
Strong oxidizing agents

8. Exposure controls / personal protection

**OSHA Exposure Limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>20 mppcf</td>
<td></td>
</tr>
<tr>
<td>Carbon black</td>
<td>3.5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>10 mg/m³</td>
<td>Fume.</td>
</tr>
</tbody>
</table>
ACGIH Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>2 mg/m³ for 8 hours</td>
</tr>
<tr>
<td>Carbon black</td>
<td>3.5 mg/m³</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

Brazil Annex 11 – NR 15

<table>
<thead>
<tr>
<th>Components</th>
<th>OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>3.5 mg/m³ for 48 hours/week</td>
</tr>
</tbody>
</table>

Mexico National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>LMPE - PPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>2 fibers/cm³</td>
</tr>
<tr>
<td>Carbon black</td>
<td>3.5 mg/m³</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>5 mg/m³ / 10 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>7 mg/m³</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Mexican Carcinogen Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>A4</td>
</tr>
<tr>
<td>Carbon black</td>
<td>A4</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>A4</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering measures
General: May not be adequate as the sole means to control employee exposure.
Local Exhaust: Recommended when appropriate to control employee exposure to dust or process vapors.

Protective equipment
A safety shower and eyewash should be readily available.

General advice
Avoid contact with skin and eyes. Do not breathe dust.
Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment.

Skin protection:
When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and face shield when there is a chance of contact.

Eye/face protection:
Safety glasses with side-shields. Safety goggles.

Comments:
Operations involving grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards.

9. Physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>pellets</td>
</tr>
<tr>
<td>Color</td>
<td>black</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ignition Temperature</td>
<td>&gt; 350 °C</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>&gt; 300 °C</td>
</tr>
<tr>
<td>Melting Point</td>
<td>160 – 200 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>0.92 - 1.02 g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactivity
Stable under normal conditions.

Conditions to avoid
Flame. Avoid prolonged heating at or above the recommended processing temperature. Keep away from direct sunlight.

Incompatible Materials
Strong oxidizing agents

Hazardous Combustion or Decomposition Products:
Thermal decomposition products may include oxides of carbon.

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

Potential health effects

Routes of exposure
- Skin, eyes, inhalation, ingestion.

Immediate effects

**Skin**
Polymer particles may cause mechanical irritation. The molten product can cause serious burns.

**Eyes**
Polymer particles may cause mechanical irritation.

**Inhalation**
Dust irritating to respiratory tract. Overheating in processing may generate hazardous, irritating vapors.

**Ingestion**
Low toxicity by this route is expected based on the biological activity of high molecular weight polymers.

**Other**
Titanium Dioxide is listed by IARC as possibly carcinogenic to humans (Group 2B) based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. Carbon Black is listed by IARC as possibly carcinogenic to humans (Group 2B) based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals.

Medical conditions which may be aggravated by exposure: No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratory system.

**Carbon Black** (CAS: 1333-86-4)
- **a) Acute Toxicity**
  - Test – LD50 – oral (rats): > 8,000 mg/kg
- **b) Serious Eye Damage and Irritation**
  - Test – eye irritation in rabbits: negative

**Zinc Oxide** (CAS: 1314-13-2)
- **a) Acute Toxicity**
  - Test – LD50 – oral (rats): = 15,000 mg/kg
  - Test – LC50 – via inhalation (rats): > 5.7 mg/L (4 hours)

**Titanium Dioxide** (CAS: 13463-67-7)
- **a) Acute Toxicity**
  - Test – LD50 – oral (rats): = 10,000 mg/kg

Observe the usual hygienic measures for handling chemicals.
12. Ecological Information

Carbon Black (CAS: 1333-86-4)
Acute aquatic toxicity:
- LC50 (fish): > 1,000 mg/L, 96 hours
- EC50 (daphnia): > 5,600 mg/L, 24 hours
- EC50 (algae): > 10,000 mg/L, 72 hours

Zinc Oxide (CAS: 1314-13-2)
Acute aquatic toxicity:
- LC50 (fish): > 1.1 mg/L, 96 hours
- EC50 (daphnia): > 1,000 mg/L, 24 hours
- EC50 (algae): > 0.17 mg/L, 72 hours

Ecotoxicity: The effects of resin pellets on the wildlife that may ingest them is not well understood. In the case of seabirds, some marine biologists believe that the fowl may not be able to pass plastic pellets through their digestive tracts. Thus, large quantities of ingested pellets may cause intestinal blockage, false feelings of satiation or reduction in absorption of nutrients, causing malnutrition and starvation. The goal of SPI's Operation Clean Sweep is zero loss of pellets into the environment.

Environmental Fate/Information: This material is considered to be non-biodegradable. Do not discharge product unmonitored into the environment.

13. Disposal considerations

Disposal considerations
Recycling is encouraged. Incinerate in chemical incinerator in accordance with all federal, state and local regulations.

14. Transport information

US Department of Transportation Not regulated

TDG Not regulated

Ground Transportation (Brazil) Not dangerous (ANTT Resolution 5232/2016)

ICAO/IATA Not restricted

IMDG Not regulated

15. Regulatory Information

16. Other information

NFPA: Health: 1  Flammability: 0  Instability: 0
HMIS: Health: 1  Flammability: 0  Physical Hazard: 0

Prepared By
Product Stewardship Department
Celanese

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable.

Other Information:
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Abbreviation and Acronym:
ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
NBR = Brazilian Standard
NR = Regulatory Standard
ANTT = National Land Transportation Agency