1. Product and company identification

Trade Name

CoolPoly®

The following SDS applies to products described by combinations of the following trade name, product grade and color code listed below.

Product Grade(s):
E5101***

Color Code:
See Section 16 for list of Color Codes

Manufacturer, importer, supplier

Ticona Polymer, Inc.
A business of Celanese
8040 Dixie Hwy.
Florence, KY 41042
United States
www.celanese.com

Transportation emergency phone numbers:
In USA, call 800 424 9300
Outside USA, call +001 703 527 3887, collect calls accepted.

Product Information
1-800-833-4882
info-engineeredmaterials-am@celanese.com

Synonyms:
Polyphenylene sulfide / PPS

Identified uses
Plastic processing industry.

2. Hazard Identification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard (29CFR 1910.1200)

3. Composition/information on ingredients

Chemical characterization
Polyphenylene Sulfide /PPS, glass fiber reinforced
CAS-RN. of the basic polymer: 26125-40-6
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Filler</td>
<td></td>
<td>1 - 60</td>
</tr>
<tr>
<td>Glass oxide; Fiberglass continuous filament</td>
<td>85997-17-3</td>
<td>1 - 60</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. Do not peel solidified product off the skin. Immediate medical attention is required.

Eyes
Immediately flush eye(s) with plenty of water. Call a physician if irritation persists.

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 burns, gases may be released. Gases that may be formed are extremely foul smelling, even at low and relatively nontoxic concentrations. 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, the patients may still have suffered asphyxia from carbon dioxide replacing oxygen if they were exposed in an enclosed space. While it is unlikely that enough hydrogen sulfide would be formed to cause hydrogen sulfide poisoning, the possibility should be considered if the clinical picture is consistent (similar to cyanide toxicity). Sulfur oxides are respiratory tract irritants. Other irritant gases may also have been formed in lesser amounts. If patients may have inhaled high concentrations of irritating fumes, they should be monitored for delayed onset pulmonary edema. The sulfides and mercaptans can cause nausea and headache as a result of their foul odor.

5. Fire-fighting measures

NFPA: Health: 1 Flammability: 0 Instability: 0

Suitable extinguishing media
Water, Dry powder, Foam

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Under conditions giving incomplete combustion, hazardous gases produced may consist of
Carbon monoxide
Carbon dioxide (CO2)
Sulfur oxides (SOx)
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
Avoid dust formation. Do not breathe dust***

Environmental precautions
No special environmental precautions required.

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. Maintain good housekeeping in work areas.. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated***

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..

Technical measures/Storage conditions
No special storage conditions required.

Material storage
Keep in a dry, cool and well-ventilated place. Maintain dryness of resin..

8. Exposure controls / personal protection

OSHA Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Filler</td>
<td>15 mg/m³ Total dust.</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³ Respirable fraction.</td>
</tr>
<tr>
<td>Respirable Dust</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>Total Dust</td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

ACGIH Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass oxide; Fiberglass continuous filament</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>1 fibers / cm³</td>
</tr>
</tbody>
</table>
Components TWA
Respirable Dust 3 mg/m³
Total Dust 10 mg/m³

Mexico National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>LMPE - PPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Filler</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Glass oxide; Fiberglass continuous filament</td>
<td>10 mg/m³</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.

Respiratory protection
In case of insufficient ventilation wear suitable respirator.

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 goggles. Safety glasses with side-shields.

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
Form pellets
Odor slight
Flash point Not applicable***
Ignition temperature No data available
Melting Point > 287 °C (> 550°F)
Density Not determined***
Specific Gravity > 1

Revision Date Jun.02.2016
Issuing date Aug.24.2018***
9. Physical and chemical properties

Water solubility: insoluble
VOC Content(%): Not determined

10. Stability and reactivity

Reactivity
Stable under normal conditions

Conditions to avoid
Flame. Avoid prolonged heating at or above the recommended processing temperature.

Incompatible Materials
Halogens
Strong oxidizing agents
aromatic solvents
Reducing agents***

Hazardous Combustion or Decomposition Products:
Phenyl sulfides, n-methyl-2-pyrrolidone, dichlorobenzene, phenyl mercaptan, hydrogen sulfide, butyrolactone, mesityl oxide, acetic acid, phenol, formic acid, succinic acid, chlorine, palmitic acid, p-chlorothiophenol, stearic acid, aromatic compounds, chlorinated aromatic compounds, carbonyl sulfide, and sulfur compounds.

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
Resin particles, like other inert materials, are mechanically irritating to eyes

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

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

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.

Toxicological data are not available. Observe the usual hygienic measures for handling chemicals.
12. Ecological Information

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. Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

This product as shipped is not a RCRA hazardous waste under present EPA regulations

14. Transport information

US Department of Transportation Not regulated

TDG Not regulated

Mexico Transport Information Not regulated

ICAO/IATA Not restricted

IMDG Not regulated

15. Regulatory Information

US State Regulations
Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):
none

U.S. FEDERAL REGULATIONS

TSCA Inventory:
This product complies with the U.S. Toxic Substances Control Act (TSCA).
Environmental Regulations:

SARA 313 Chemicals
Contains no substances at or above the reporting threshold under Section 313.

SARA 311:
  Acute health:  No
  Chronic health: No
  Fire: No
  Sudden release of pressure: No
  Reactive: No

INTERNATIONAL REGULATIONS

CANADIAN REGULATIONS

WHMIS Classification: Not a WHMIS controlled product.

WHMIS Ingredient Disclosure List IDL:
Fiberglass (65997-17-3)

16. Other information

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

Color code(s)
BLACK

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:
Observe national and local legal requirements
Except as otherwise noted, all of the trademarks referenced herein are owned by Ticona or its affiliates. ***
Changes against the previous version are marked by ***

This product is not intended for use in medical or dental implants.
The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Celanese makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. User has sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.
Safety Data Sheet

<table>
<thead>
<tr>
<th>Product Name</th>
<th>CoolPoly®</th>
<th>NAGH/EN</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSDS number</td>
<td>870032</td>
<td></td>
</tr>
<tr>
<td>Revision Number</td>
<td>1</td>
<td>Revision Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Issuing date</td>
</tr>
</tbody>
</table>

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