Product Safety Assessment

GREENPUR Inorganic-based Color Pastes


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Names
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- GREENPUR 3158D Bianco Color Paste
- GREENPUR O3 Oro Color Paste
- GREENPUR R3 Rame Color Paste

Product Overview
- GREENPUR™ Inorganic-based Color Pastes are solvent-based pastes containing inorganic pigments. For further details, see Product Description.
- GREENPUR Inorganic-based Color Pastes are generally used to color solvent-based polyurethane and vinyl-acrylic resins used in textile coatings and artificial leather production. For further details, see Product Uses.
- Exposure can occur either in facilities that manufacture GREENPUR Inorganic-based Color Pastes or in the various industrial or manufacturing facilities that use these products. Dow does not sell these products for direct consumer use, but they are used in small amounts to color a variety of textiles and artificial leathers to which individuals could be exposed. For further details, see Exposure Potential.
- Direct eye contact to the solvent is essentially nonirritating. Prolonged skin contact with large amounts of the solvent may result in dizziness or drowsiness. Inhalation of vapor or mist from solvent and dust from other ingredients may cause irritation of the nose, throat, and lungs. These products have low toxicity if swallowed. Exposure to the solvent has resulted in reproductive effects in laboratory animals at doses that produce significant toxicity to the parental animals. For further details, see Health Information and request the relevant Safety Data Sheet from the Dow Customer Information Group.
- The solvent in GREENPUR Inorganic-based Color Pastes is readily biodegradable, has a low potential to accumulate in the food chain (bioconcentration potential is low), and is practically nontoxic to aquatic organisms on an acute basis. The main dye

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components are expected to slowly degrade through chemical and biological processes, have a low to moderate potential to accumulate in the food chain, and some are expected to be moderately to highly toxic to aquatic organisms. For further details, see Environmental Information.

- GREENPUR™ Inorganic-based Color Pastes are considered stable under recommended storage and normal use conditions. Avoid contact with strong oxidizers. For further details, see Physical Hazard Information.

Manufacture of Product

- Location – GREENPUR™ products are formulated by approved contract manufacturers to meet stringent Dow specifications for quality and performance. The materials are produced in locations and quantities necessary to meet market demand.
- Process – GREENPUR Inorganic-based Color Pastes are produced using proprietary chemistries, processes, and blending techniques.

Product Description

GREENPUR™ Inorganic-based Color Pastes are solvent-based pastes containing inorganic dyes dispersed in dipropylene glycol monomethyl ether. These products include the pigments indicated below:

<table>
<thead>
<tr>
<th>Name</th>
<th>Color Paste</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREENPUR A3 Argento Color Paste</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 1000C Opacizzante Color Paste</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3011 Bruno Color Paste</td>
<td>Pigment Red 101</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3018 Bianco Color Paste</td>
<td>Titanium dioxide (Pigment White 6)</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3018D Bianco Color Paste</td>
<td>Titanium dioxide (Pigment White 6)</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3021 Bruno Color Paste</td>
<td>Pigment Red 101</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3037 Perla Color Paste</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3041 Bruno Color Paste</td>
<td>Pigment Black 26</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3075 Nero Color Paste</td>
<td>Pigment Black 11</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3099 Giallo Color Paste</td>
<td>Pigment Yellow 42</td>
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</tr>
<tr>
<td>GREENPUR 3118D Bianco Color Paste</td>
<td>Titanium dioxide (Pigment White 6)</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3148D Bianco Color Paste</td>
<td>Titanium dioxide (Pigment White 6)</td>
<td></td>
</tr>
<tr>
<td>GREENPUR 3158D Bianco Color Paste</td>
<td>Titanium dioxide (Pigment White 6)</td>
<td></td>
</tr>
<tr>
<td>GREENPUR O3 Oro Color Paste</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>GREENPUR R3 Rame Color Paste</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

GREENPUR Inorganic-based Color Pastes contain 1 to 60% of the following materials used as fillers, thickeners, and enhancers.

- GREENPUR A3 Argento Color Paste: Aluminum powder
- GREENPUR 1000C Opacizzante Color Paste: Fumed synthetic amorphous silica
- GREENPUR 3018 Bianco Color Paste: Aluminum oxide
- GREENPUR 3018D Bianco Color Paste: Aluminum oxide
- GREENPUR 3099 Giallo Color Paste: Limestone
- GREENPUR 3118D Bianco Color Paste: Aluminum oxide limestone
- GREENPUR 3148D Bianco Color Paste: Aluminum oxide limestone
- GREENPUR 3158D Bianco Color Paste: Aluminum oxide, limestone
- GREENPUR O3 Oro Color Paste: Copper, zinc powder
- GREENPUR R3 Rame Color Paste: Copper, zinc powder

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Product Uses
GREENPUR™ Inorganic-based Color Pastes are generally used to color solvent-based polyurethane and vinyl-acrylic resins used for textile coatings and artificial leather production. These products are also used to color high solids, two-component polyurethane resins.

Exposure Potential
GREENPUR™ Inorganic-based Color Pastes are used in the production of industrial and consumer products. Based on the uses for this product, individuals could be exposed through:

- **Workplace exposure** – Exposure can occur either in facilities that manufacture this product or in the various industrial facilities that use these products. It is produced, distributed, stored, and consumed in closed systems. Those working with these products in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to prevent exposure. See Health Information.

- **Consumer exposure to products containing GREENPUR Inorganic-based Color Pastes** – Dow does not sell these products for direct consumer use, but they are used in small amounts to color a variety of textiles and artificial leathers to which individuals could be exposed. Exposure to the final products is not considered to present a risk. See Health Information.

- **Environmental releases** – Engineering controls in facilities that manufacture or formulate GREENPUR Inorganic-based Color Pastes are designed to limit environmental exposure. In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. For small spills, these products should be absorbed with inert materials such as sand. If released to the environment, the dyes are expected to bind to soils, suspended solids, and sediments and would be removed by wastewater-treatment facilities by adsorption to biosolids. The solvent is readily biodegradable and is expected to biodegrade in soil or water environments, including biological wastewater-treatment facilities. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the product should be captured, collected, and reprocessed or disposed of according to applicable governmental regulations. Appropriate protective equipment must be worn when handling a spill of this material. Keep spills and cleaning runoff out of municipal sewers and out of open bodies of water. Eliminate all ignition sources and evacuate personnel to safe areas. Ventilate the area. Floor may be slippery; use care to avoid falling. Soak up material with inert, organic material such as sand, silica gel, acid binder, universal binder, or sawdust. Sweep up or vacuum up spillage, and collect in suitable container for disposal. Avoid breathing vapor. Spills on porous surfaces can contaminate groundwater. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use water spray, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Vapors may travel to a source of ignition and flash back. Closed containers may rupture via pressure buildup when exposed to fire or extreme heat. During a fire, irritating or highly toxic gases and/or fumes may be generated during combustion or decomposition. Move containers promptly out of fire zone. If removal is impossible, cool containers with water spray. Remain upwind and avoid breathing smoke. Firefighters should wear self-contained breathing apparatus (SCBA). See Environmental, Health, and Physical Hazard Information.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Health Information
Health information for GREENPUR™ Inorganic-based Color Pastes is summarized on the relevant Safety Data Sheets. An overview of health information for GREENPUR Inorganic-based Color Pastes appears below. It is important to note that health hazards associated with individual products may vary based on their formulation or intended use. These materials may also contain minor components or additives that have additional health hazards which are at levels that are not a risk to consumers. However, the Safety Data Sheet is the preferred source for specific health information.

**Eye contact** – Direct contact with the solvent is essentially nonirritating to the eyes. Exposure to titanium dioxide dust in some products may be irritating to the eyes via mechanical action.
**Skin contact** – Prolonged skin contact with large amounts of the solvent may result in dizziness or drowsiness. Exposure to titanium dioxide dust in some products may cause skin irritation via mechanical action. Aluminum and copper, in some products may cause allergic reactions in sensitive individuals.

**Inhalation** – Inhalation of vapor or mist from the solvent may cause minor irritation of the nose, throat, and lungs. Exposure to components like aluminum powder, titanium dioxide and limestone, if inhaled in the form of dust, may cause respiratory tract irritation or inflammation.

**Ingestion** – These products have low toxicity if swallowed. Swallowing small amounts incidental to handling is not likely to cause injury; however, swallowing larger amounts may cause injury.

**Repeated exposure** – Excessive exposure to the vapor or mist of the solvent may result in dizziness or drowsiness, and exposure to some of the components in dust form may cause respiratory effects.

**Other** – Exposure to the solvent has resulted in reproductive effects in laboratory animals at doses that produce significant toxicity to the parental animals.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

**Environmental Information**

Environmental information for GREENPUR™ Inorganic-based Color Pastes is summarized on the relevant Safety Data Sheets. These materials may also contain solvents or additives that have additional environmental impact. It is important to note that environmental impact associated with individual products may vary based on their formulation or intended use. An overview of environmental information for GREENPUR Inorganic-based Color Pastes appears below. However, the Safety Data Sheet is the preferred source for specific environmental information.

Dye components and other inert materials used in GREENPUR Inorganic-based Color Pastes have low volatility. If released to water, they are expected to bind to soils, suspended solids, or sediments. Most dye components and other inert materials are expected to degrade slowly in the environment in response to chemical and biological processes, including removal by wastewater-treatment facilities by adsorption to biosolids. Most have a low-to-moderate potential to bioconcentrate (accumulate in the food chain) and some components are anticipated to be moderately to highly toxic to aquatic organisms on an acute basis (LC50/EC50 values ranging from <1 to 10 mg/L in the most sensitive species tested).

The solvent used in GREENPUR Inorganic-based Color Pastes, dipropylene glycol monomethyl ether, has low volatility and is miscible with water. If released to the environment, it would tend to remain in water with minimal tendency to bind to soil or sediment. The solvent is readily biodegradable, which suggests that it will likely be removed in water and soil environments, including biological wastewater treatment facilities. The solvent has a low potential for accumulation in the food chain (bioconcentration potential is low) and is practically nontoxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

**Physical Hazard Information**

GREENPUR™ Inorganic-based Color Pastes are considered stable under recommended storage and normal use conditions.

Avoid contact with strong oxidizers.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.
Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of GREENPUR™ Inorganic-based Color Pastes. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information
- Request the relevant Safety Data Sheets or Technical Data Sheets from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/index.htm)


References
15. “Copper Compounds,” Hazardous Substances Data Bank (HSDB), U.S. National Library of Medicine, TOXNET, Human Health Effects section.
“Amorphous Silica,” Hazardous Substances Data Bank (HSDB), U.S. National Library of Medicine, TOXNET, Human Health Effects section.


NOTICES

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