

Process dust handling

Ref : VA – WM – 2015/02

Secondary operations on Telene[®] RIM Polymer Resin parts including sanding, trimming, machining, milling, drilling or sawing may produce hot shavings, granules, and/or very fine particle size dust (powder). Telene RIM Polymer powder, as well as many other finely divided materials including coal dust, flour and grain dust, sugar and aluminum powder, under certain specific circumstances are an explosion hazard.

Accumulation of these materials in a pile or in a confined container such as a box, drum, vacuum dust collector or dumpster may cause rapid decomposition or in extreme cases autoignition. Shavings, granules, and/or powder must be cooled or treated before final collection for disposal.

This powder is also very sensitive to ignition by electrostatic discharge and is itself a static charge generator. Therefore, all dust-handling equipment including containers, conveyors, central vacuum systems, dust control devices, and other transfer equipment should follow the regulations in force for handling fine organic powder.

Dust Handling and Process Environment Recommendations

1. Surface wall temperatures of all long-term (more than a few hours) storage, transfer, transportation containers and processing equipment involving dust must be controlled to a maximum of **55°C**.
2. Prevent accumulation of dust in the workplace (e.g., good housekeeping, well-ventilated conditions, cleaning overhead horizontal surfaces, etc.).
3. Eliminate ignition sources such as sparks or static buildup (e.g. equipment grounding, explosive rated switches and boxes, work area humidification, etc.).
4. All process areas and equipment must be protected from dust explosions by employing a properly engineered explosion suppression system.

Treatment of Telene RIM Polymer Dust

This procedure describes a method of raising the ignition temperature of Telene polymer powder and converting the powder to a non hazardous paste.

Typical equipment supplies

1. 60 liter steel drum container
2. Pneumatic mixer (i.e., air motor & stirrer blade) or protected electrical mixer (observe all spark and static generation and explosion cautions indicated above).
3. Polyethylene Glycol PEG 400 (Carbowax 400) - Obtain from Union Carbide, Ashland or Dow Chemical.

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Procedure

1. Add sufficient Polyethylene Glycol 400 (PEG 400) to fill the drum 40 - 50% full.
2. Simultaneously agitate mixture while adding powder until the drum is full and cannot be stirred. The consistency of the product formed will be paste-like to almost completely dry.
3. If at the end of the production day insufficient powder has been collected to form the paste-like or nearly dry product, cover the drum and continue the process the next day.
4. When the drum is nearly full, the product formed can be disposed of, transferring it into a polyethylene bag.

User's Responsibility

This technical bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if additional precautions may be necessary.

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