

PROCESS AND DUST CONTROL

PROCESS DESIGN OVERVIEW

1 SCOPE

In many construction, mining and manufacturing operations dust and dust creation is an ongoing issue that has to be monitored then mitigated. The use of specialty products to control dust is very common in the industry. Fugitive dust can be hazardous, combustible and lead to loss of inventory. The dust suppressants can also act as an anticaking solution.

1.1 DEFINITIONS

The process control palliative is an application of a diluted asphalt, petroleum or organic emulsion sprayed directly on a stockpile or misted during the stockpiling process.

2. MATERIALS

2.1 Asphalt Emulsions:

Asphalt emulsions economical, environmentally friendly and can be formulated with a combination of special wetting agents to aid in penetrating the material so that the fugitive dust is controlled. There are many emulsions that can be used depending on the material being sprayed. When sprayed on coal piles the emulsion adds to the BTU value.

Organic Emulsions:

Organic emulsions can be made from tree extracts and oil seeds. These emulsions are environmentally friendly and can be formulated with a number of additives such as: wetting agents, moisture inhibitors and anti-rust chemicals.

Petroleum Oils

Petroleum oils that are used as the base material in the manufacture of beauty products are called white oils and may be used as dust suppressants and anticaking oils. They are preferred for commodities such as fertilizers that find their way into our food chain.

3 DESIGN CRITERIA

Aggregates, minerals, fertilizers, soils and other commodities stockpiled degrade due to handling and weather creating airborne particulates reducing commodity integrity and potentially loss of revenue. The material to be sprayed should be analyzed for mineralogy, gradation, porosity, density, end use and weathering characteristics so the proper product can be used in the appropriate quantity.

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4 RECOMMENDED PERFORMANCE GUIDELINES

In order to construct a proper well designed process control product the following guidelines should be followed:

- Evaluate the material or commodity to be sprayed
- Determine wants and needs of the owner
- Based on the assessment choose the appropriate palliative
- Confirm engineering parameters utilizing a certified laboratory
- Develop storage and handling procedures.
- Develop application, QC and QA procedures



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