CoalPlus* Treatment Program

DusTreat* DC9144 Dust Control Agent and Anti-oxidant

- Reduces dusting during loading, unloading, stack-out and reclamation.
- Reduces in-transit coal losses from rail cars—may eliminate need for car topper treatments.
- Retards the oxidation and weathering of low rank coals, such as Powder River Basin (PRB) coals.
- Significantly reduces hot spots, smokers and spontaneous combustion at generating stations and coal terminals.
- Reduces BTU losses during outside storage at coal yards and terminals.

Description and Use

DusTreat DC9144 is a patented dust control binder / anti-oxidant designed to reduce fugitive dust emissions and inhibit the surface oxidation of low rank coals, especially coals originating from Powder River Basin (PRB) region.

DusTreat DC9144 combines the functionality of a long term “residual” dust control binder, with an anti-oxidant capability.

PRB coals tend to be dustier than other utility coals, due to its inherent friability (ease of breakage) and weathering potential (physical break down due to oxidation). DusTreat DC9144 prevents dusting by two mechanisms – by agglomerating the fine particles as a binder and reducing the weathering of the coal.

The accelerated oxidation potential of PRB coals is due to its unique combination of porosity, moisture and surface chemistry. DusTreat DC9144 is a polymeric material that significantly retards the surface oxidation, which is a catalytic, exothermic, and self-sustaining reaction. Uncontrolled oxidation can lead to significant BTU losses and run away self-heating of the coal in stockpiles, silos and in toe and face areas of the mines.

The anti-oxidant and dust control agents under the CoalPlus program are not coating agents, but specially designed synthetic materials which inhibit the surface oxidation reaction on the coal surface. Traditional oxidation control materials based on oil, pitch, tar or latex, are used to physically coat the surface of coal particles and serve solely as a barrier film to slow air reaching the coal surfaces.

CoalPlus program materials irreversibly bind to the reactive chemical sites on coal surfaces and inhibit the oxidation reaction.

As a comparison, traditional coating and crusting materials have been applied at 1-3 gal/ton of coal; whereas under the CoalPlus treatment program products are applied at 0.1-0.5 lb/ton of coal or less than 0.025 gal/ton of coal.

Typical Applications

For anti-oxidant and dust control applications prior to loading on the rail cars or during coal handling at
terminals or generating stations, DusTreat DC9144 is applied as foamed “body-feed.”

“Body-feed” is GE’s advanced foam system, incorporating state of the art dosing and monitoring technology to ensure complete coverage of the coal surfaces with the product.

DusTreat DC9144 can also be used as a water solution in the 0.1-2.0% concentration range, with spray nozzles for spot applications at transfer points and during unloading, stack-out and reclaim operations.

**Treatment and Feeding Requirements**

For anti-oxidant and dust control “body-feed” applications, DusTreat DC9144 is fed through a foam application system in conjunction with GE’s high performance foaming agent DusTreat DC6109. Foam systems are customized for each application depending on tonnage and feed location. Please consult with your GE representative to select the appropriate foam feed equipment.

For spray applications DusTreat DC9144 can be diluted to the correct concentration by in-line dilution. A simple in-line static mixer will aid the product dilution, but is not absolutely necessary.

Neat DusTreat DC9144 can be handled with any appropriately sized gear or diaphragm pump suitable for viscosities up to approximately 3000 cps. High-density polyethylene and rigid PVC are satisfactory for tanks, tubing, piping, and pumps. Natural rubber, Buna N, and Teflon™ (registered trademark of DuPont) can by used for pump components and hose linings. Flexible PVC tubing (such as Tygon™ - registered trademark of Saint-Gobain Corporation) can be used for short-term installations, but may not be satisfactory in permanent applications. Do not use mild steel and copper alloys because they will experience unacceptable corrosion with this product. Nevertheless, many other materials of construction are compatible with DusTreat DC9144.

Contact your GE representative if you need more information.

**General Properties**

Physical properties of DusTreat DC9144 are shown in the Material Safety Data Sheet (MSDS), a copy of which is available on request.

**Packaging Information**

DusTreat DC9144 is a liquid product, available in a variety of containers. Consult your GE representative for packaging and delivery options.

**Storage and Handling**

DusTreat DC9144 should be stored in closed containers, at moderate temperatures of 40 to 90°F (4 to 32°C) and protected from and excessive heat, sunlight and freezing. To ensure maximum activity, this product should be used within 6 months.

Spilled product is slippery, and precautions should be taken to avoid such spills. If a spill occurs, cover the product with an inert, absorbent material, sweep up the spill, and place it in a waste disposal container prior to flushing the area with water. The wet area may be slippery, so sand, grit, or another suitable material may be used to provide additional traction.

**Safety Precautions**

A MSDS containing detailed information about this product is available upon request.