Dust Gobbler™


Environmentally friendly superior performance dust suppressant and surface stabiliser for unsealed roads. Provides massive cost savings while hugely increasing on-site safety.

Description:

Dust Gobbler™ Liquid is a high lignin content liquid product while Dust Gobbler™ Powder is a high lignin content powder product aimed primarily at road dust management and soil stabilisation applications. Both products provide vast cost savings while significantly increasing on-site safety.

Dust Gobbler™ Technology:

Lignin, a major component of wood, is one of the most abundant natural polymers on the planet. In an eco-friendly process, lignosulphonate is a sulphonated technical lignin which is derived from the chemical pulping process when cellulose and lignin are separated.

Dust Gobbler™ Liquid:

Dust Gobbler™ Liquid is a neutral pH, high lignin content, liquid product, providing superior surfactant wetting and binding performance in road dust management and soil stabilisation applications. Dust Gobbler™ has a solid content ranging from 45-49%.

Dust Gobbler™ Powder:

Dust Gobbler™ Powder is a neutral pH, high lignin content powder product, providing superior surfactant wetting and binding performance in road dust management and soil stabilisation applications.

Packaging:

Dust Gobbler™ Liquid can be packaged to meet customer requirements as follows:

- Flexitanks loaded into containers (for export)
- ISO tanks (for export subject to availability)
- IBC Containers (subject to availability)
- Bulk road tankers

Dust Gobbler™ Powder is packaged in big bags — 1m³ bags with a bottom discharge valve — that hold 600kg. Also available in 1000L liquid flow bins.

How Does It Work?

Dust Gobbler™ acts a surfactant, polymeric binder and disperser/plasticiser.

Surfactants: Proprietary and specially tested and designed surfactants lower the surface tension between liquid and solid particles, acting as a highly efficient wetting agent. Effective wetting of dust particles suppress the tendency for fines to become airborne.

Polymeric Binder: Lignosulphonate is specially stabilized and formulated to act as natural glue to bind fines and soil aggregates together, and the polymer traps moisture which retards evaporation thus prolonging the wetting effect. The binding action is further uniquely aided by presence of sugars which are derived from hemicellulose breakdown.

Disperser/plasticizer: This product contains precisely calculated amounts lignosulphonate which acts as disperser in a matrix of fines and clay to disperse clay particles effectively for improved plasticity at lower moisture levels — leading to reduced abrasion and erosion. This allows for denser and firmer compaction of the road surface. As an ongoing benefit, lignosulphonate continually leaches into the road matrix.

Cost Savings:

Dust Gobbler™ offers savings in significantly reduced water usage and road maintenance, improved vehicle tyre lifespan and fuel consumption, reduced vehicle wear and tear as well as increased uptime.

Increased Safety:

Dust Gobbler™ improves driving conditions — visibility and braking

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ability — and reduces occupational hazards such as silicosis, asthma and cancer.

Environmentally Friendly:

Dust Gobbler™ is environmentally friendly, biodegradable and manufactured from renewable resources.

Methods Of Application:

There are 2 methods for applying Dust Gobbler™. *The following application rates as quoted for the powder version. Double the below application rates for the liquid:*

Spray-on Application: Surface treatments involve the spraying of diluted product directly onto the road surface. As a rule of thumb, less permeable soils (like clay) require Dust Gobbler™ to be diluted down to at least 10% dry solids (preferably 2 – 5%) and applied multiple times to facilitate surface penetration. This application method produces a less permanent solution to that of the mix-in application where Dust Gobbler™ is blended with the soil prior to compaction, but it is ideally suited when:

- Road building equipment is not available for the mix-in application
- Maintenance of previously compacted roads needs to be conducted
- A short term dust suppression solution is required.

Mix-in Application: Blending Dust Gobbler™ with the soil prior to compaction will provide a more permanent or longer lasting solution compared to surface treatments. This process is ideally suited when compaction water is substituted by a lignosulphonate mix during the re-gravelling process of unsealed road construction. Additional costs incurred will be recovered because less frequent rejuvenation will be required and the overall improved road surface will translate into reduced vehicle operating costs.

Spray On Application:

- Blade the road to the correct crown (typically 4% camber) to ensure proper water drainage
- Pre-wet road surface with water to improve Dust Gobbler™ penetration
- Apply Dust Gobbler™ in 4-6 applications, over a period of three weeks, to mitigate over-wetting and run-off
- On mine haul roads, apply Dust Gobbler™ at a rate of 0.01 kg/m2 as part of the normal watering program until dust reduction is evident. Spray intervals will increase as Dust Gobbler™ takes effect.
- Previously untreated roads may require an initial application of 0.1–0.4 kg/m2 in order to establish a residual concentration of the active ingredients.

Mix In Application:

- Rip the road to a depth of 100-200mm depending on the mechanical strength of the in-situ soil and the nature of the traffic
- Break down lumps with a rotavator
- If re-gravelling, windrow dumped material on top of the lightly scarified surface
- Considering inherent soil moisture, calculate the water volume required to achieve the optimum moisture content for compaction
- Mix two-thirds of the required Dust Gobbler™ powder into water; allow it to stand for approximately an hour for the powder to dissolve
- Alternatively, add water to Dust Gobbler™ liquid to make up the calculated volume
- The liquor solution dosage should typically be 0.1 - 0.4 kg/m2 lignosulphonate on a dry basis.
- Apply the solution onto the prepared surface in multiple applications, mixing thoroughly with a rotavator, disc plough or grader between applications
- Shape the crown to the desired camber (typically 4%) to facilitate proper water drainage
- Compact with a pneumatic tyred or vibrating smooth drum roller
- Apply the remaining product as a surface treatment while the road is still damp
- Sound civil and structural engineering principles should be

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adhered to during the road construction process.

Maintaining Treated Roads:

Isolated areas of road surface which have disintegrated and require maintenance can be replaced with in-situ substrate, sprayed with Dust Gobbler™ and compacted. Should grader maintenance of the road surface be required, then the road must first be sprayed with water to soften the crust before being bladed. The bladed surface should typically be finished off with a light 0.1 –0.3 kg/m2 spray-on application of Dust Gobbler™.

Frequency Of Rejuvenation:

The rejuvenation frequency of Dust Gobbler™ stabilised roads will depend on the nature of the soil substrate, climatic conditions, traffic load and road construction techniques. Mining operations which result in continual dust deposition may require more frequent applications (0.4 kg/m2 per month) of Dust Gobbler™ as part of the standard dust control regime.

Benefits Summary:

Savings: The correct application of Dust Gobbler™ will provide the following savings:

- Water usage
- Road maintenance
- Improved vehicle tyre lifespan
- Fuel consumption
- Reduced wear and tear on vehicles
- Increased uptime and operating hours.

Safety: The correct application of Dust Gobbler™ will improve safety due to:

- Improved driving conditions (visibility and braking ability)
- Reduction in occupational hazards such as silicosis, asthma and cancer.

Environmental: Dust Gobbler™ is environmentally friendly, biodegradable and manufactured from renewable resources.

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