

# POSITION STATEMENT

## CF211 Dust Control Agent

The growing awareness of dust pollution problems and the related health issues has created an environmental and legal imperative for mining and associated industries to solve their dilemma.

The major area of concern is concentrated on the dust generated at the mine face during mining operations.

The problem, however, is a very difficult one to address. The main areas of concern are:

- The dynamic nature of the dust production
- Scale of the problem
- Hydrophobic nature of the dust
- Requirement for instantaneous effect
- High volume of water usage
- Environmental considerations of high volume of chemical usage

The chemical industry, buoyed by the prospect of new impetus in a substantial market sector, has responded with a wide range of surfactant solutions to try to deal with the problem.

### *So why should you use Hammersley's DUST CONTROL AGENT CF211? Why are we a different and better alternative?*

- Our product is not designed or augmented from products designed for other dust control purposes. Hammersley's CF211 is a new and holistic solution to the problem. Designed from the ground up for the specific purpose of suppressing dynamically generated, airborne dust during coal winning operations.

- **Low HLB**

The HLB (Hydrophilic/Lipophilic Balance) is a measure of the relative water/oil solubility.

The higher the HLB the more water-soluble – lower HLB less water-soluble/more oil soluble.

Hammersley's CF211 uses new technology to provide a product with a much lower HLB that is normally possible in a water-soluble solution.

This offers two important advantages:

- Lowers the surface tension below normal achievable levels
- Has a greater affinity with the oily character of the coal dust particles

- **Synergistic non-ionic/anionic surfactant blend**

Normal dust control products are blends of non-ionic surfactants.

It is well known that strong synergies exist in specific ratio blends of anionic/non-ionic wetting agents and Hammersley's CF211 has achieved this benefit without the unwanted usually associated with the use of anionics.

- **Lower critical micelle concentration (CMC)**

The CMC is the concentration at which wetting agents begin to work at their highest efficiency.

The CMC for anionics is much lower than that for non-ionic surfactants and this allows Hammersley's CF211 to perform more efficiently at the dilution levels required for economic usage.

- **Safe co-solvent**

The use of non-toxic, water-soluble co-solvents further increase the wetting of and affinity for the hydrophobic coal dust surface.

Instantaneous wetting of the fine particle dust is achieved.

- **Readily biodegradable**

A number of wetting agents currently in use contain nonylphenol ethoxylates. While these compounds are inexpensive and relatively efficient, they are non-biodegradable and have a high toxicity to marine environments.

All ingredients in CF211 are biodegradable. The product is unlikely to accumulate in the soil or water or cause long term problems.

- **Low mammalian and aquatic toxicity**

The major surfactants used CF211 are new generation compounds with strong environmental credentials. The product exhibits very low mammalian and aquatic toxicity and is therefore safe to use and environmentally gentle.

- **Scale control**

Continuous operation of automatic mining equipment results in a build-up of hard-water scale in water spray lines and jets. CF211 incorporates a scale inhibiting mechanism that minimises or eliminates the need for downtime descaling.

Hammersley's CF211 Dust Control Agent is a highly efficient, purpose-built product and heralds a new era of efficient, operational dust control for the industry.

If further information is required, Hammersley's friendly team can be contacted via the following channels:

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