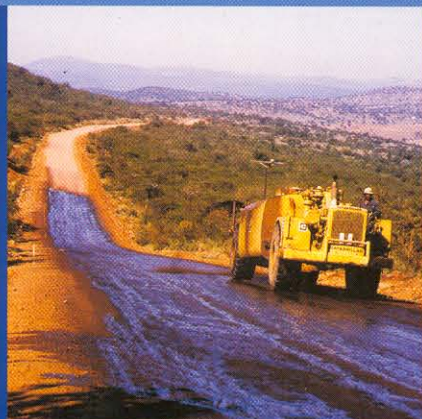
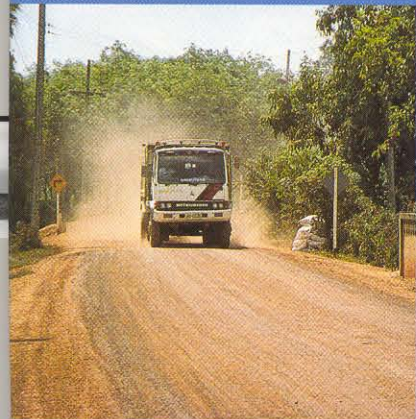


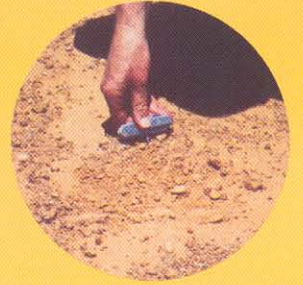


**A surface for a road better travelled**



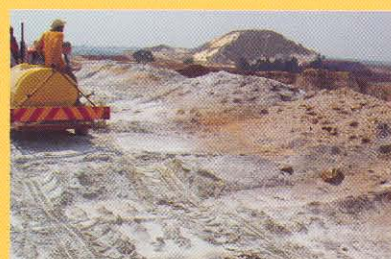
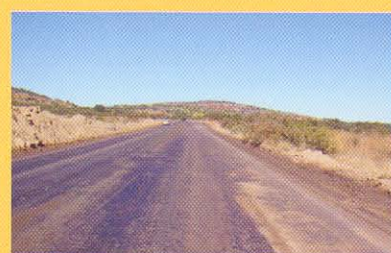
# Down with Dust

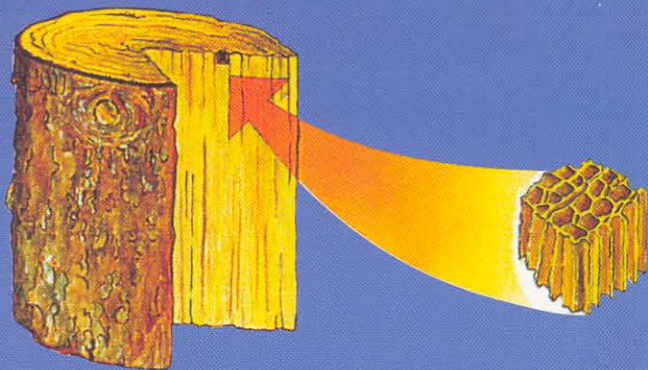
In many environments, the existence of dust is both undesirable and costly. Undesirable from a human comfort, safety, health, environmental, legal and aesthetic perspective. Costly because the loss of fine dust and gravel materials off road surfaces amounts to many thousands of tons each year, and this damage needs to be repaired – at considerable expense.



The loss of dust particles, or fines, from a road causes accelerated gravel loss. This in turn causes corrugations to form in the road, making travel uncomfortable or even impossible. A poor road surface presents a safety risk for motorists, poorer quality of life for people who live adjacent to or near the road, lower agricultural yields and higher vehicle operating costs.

Dustex is a preferred dust suppression agent on areas that are starting to generate dust. The aim is to bind the small particles, making bigger particles and thus preventing dust. Treatment with Dustex last considerably longer than can be achieved by simply watering the surface.





Dustex is made from lignin, a natural polymer found in wood. Lignin is located between the fibres and in the cell walls, offering the binding properties that make lignin the natural choice for Dustex.

## The Dustex Solution

Dustex is calcium lignosulphate, which is a natural material that acts as a binding agent for gravel roads and other applications. Dustex is derived from lignin, which is a natural polymer found in wood. Lignin gives rigidity to the cell walls and binds wood cells, creating a composite material that resists impact and bending. Applied to a road, Dustex binds the surface materials. The pressure on roads applied by vehicles helps to harden the surface (instead of causing erosion or wear). This reduces the cost of maintenance and the need for complementary aggregates. It also enhances the aesthetics of the road, improves safety standards for motorists and provides a cost effective solution to dust and road surface deterioration.

Dustex is available in a liquid and powder form. It is harmless (non-toxic to humans, plants and animals), easy to use (requires no specialised equipment) and, because it is source from trees, it is environmentally-friendly binder that is biodegradable and renewable.

## Material Selection

Dustex performs effectively on a range of materials. However, the formation of typical defects such as erosion, corrugation, ravelling, potholes and slipperiness, related to the use of inappropriate materials or poor construction and maintenance, will be retarded



Lignosulphonates are effective binders for different types of soil and road aggregates. The primary product applications include:

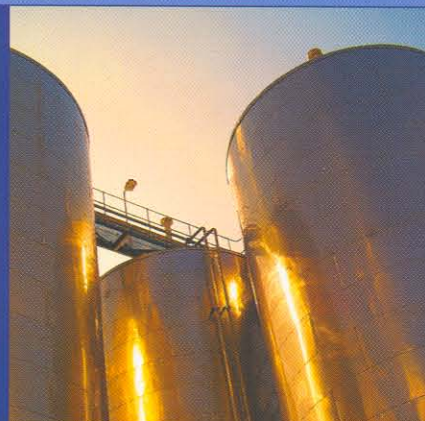
- Streets and roads in rural and residential areas
- Haul roads
- Roads in game reserves
- Road shoulders
- Construction sites
- Quarries
- Runways
- Plant spray applications
- Mine dumps and workings
- Temporary bypasses
- Sports fields
- Parking areas
- Paddocks
- Dust-sensitive agricultural and forestry roads



In South Africa, Dustex is produced and supplied by LignoTech South Africa – a Borregaard/Sappi joint venture based at Umkomaas on the coast of KwaZulu Natal. LignoTech SA's speciality lignin chemical plant is among the largest of its kind in the world, with a capacity of 155 000 tons per annum using a primary raw material, lignosulphonates, sourced directly from the Sappi pulp manufacturing facility on which LignoTech SA is situated.



The LignoTech SA operation uses advanced lignin beneficiation technology which involves processes of evaporation, chemical processing and spray drying to produce a range of speciality lignin chemicals. These are supplied in liquid and dry form. LignoTech SA operates in line with ISO 9001 (quality) and ISO 14001 (environmental) practices.



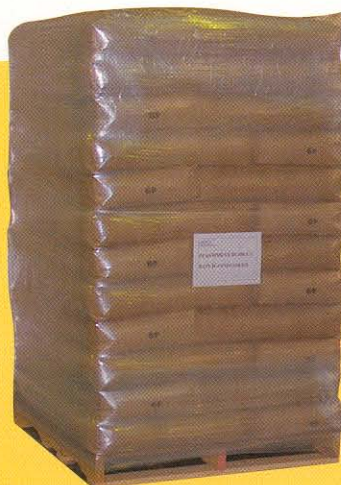
# A natural, cost-effective dust solution



Dustex application rates and methods can be adapted to suit specific requirements and situations. To get the best result, Dustex is mixed with water to a 5-8% solution. Between 1 and 1.5 litres of this solution is spread per square meter evenly over the surface. The treatment should be repeated when the surface starts to dust again. With rejuvenation, the amount of Dustex in the solution may be reduced.

In addition to dust suppression, Dustex is also used to stabilise roads. This involves binding and stabilising a road layer with a thickness of between 5 and 20cm, with the aim of reducing maintenance, increasing the bearing capacity of existing road material, or improve the quality of in-situ road material. In this application, the amount of Dustex needed is between 1-3% of the weight of road material to be bound – calculated as dry matter on dry aggregates. The Dustex powder and water should be mixed with the aggregate, which is normally done with a cultivator or grader. The amount of water used should be as close as possible to the optimal water content for compaction of the aggregate. The mixing process is usually done in steps, depending on the type of equipment used.

Dustex is supplied in powder or concentrated liquid form. Powder is available in 25kg bags or 600kg bulk. Liquid is supplied by bulk tanker in quantities as required. Product is exported to countries in North America, South East Asia, Middle East and Australasia.





## Holistic Approach

Manufactured in South Africa, Dustex is distributed countrywide through an agency network. Approved Dustex agents provide a complete solution to customers: from needs analysis and identifying the preferred application methodology, to securing the timeous delivery and application of the chosen product.

As part of our service programme, LignoTech SA offers customers technical support by means of product analyses at our laboratory, collaboration on new product development, material test reports and related services. Please contact our research and development department for more information.



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