

# Recommendations for safe handling of Redicote® and Wetfix® products

Asphalt Applications

**AkzoNobel** 

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### **Introduction**

This document is intended to be a general guide to the handling of the Redicote® and Wetfix® product ranges of chemicals for road construction. For details on safety issues related to specific products, our individual “Material Safety Data Sheets” should always be consulted.

### **What is the chemical composition?**

The active ingredients in these products are fatty amines and their derivatives, amidoamines and imidazolines which are alkaline in nature. Some products contain additional chemicals and solvents.

### **What are the functions?**

Redicote® emulsifiers are essential in the production of emulsions of bitumen in water which are used for warm or cold paving and other construction purposes.

Wetfix® adhesion promoters improve the adhesive bond between bitumen and aggregate which in turn enhances the long-term performance of the pavement.

### **Health and safety considerations**

Redicote® and Wetfix® products present no danger to operatives if handled according to Safety Data Sheets and these recommendations.

### **24 h emergency phone number**

If an emergency occurs you could call the emergency number. They will assist you in doing a first assessment of the acute health risks and the need of assistance. Once the assessment is completed they will give advice and recommendations.

# What are the associated hazards to personnel and environment?

## Toxicity



The products are classified as harmful by ingestion.

## Skin contact



Most products are classified as irritating to skin but some are corrosive. They are skin sensitising through repeated or prolonged exposure.

## Eye contact

Most products are classified as corrosive to the eye.

## Inhalation

Due to the low volatility of the active ingredients at ambient temperatures harmful inhalation of vapour is unlikely to occur under normal conditions. However, some of the additional chemicals and solvents are volatile and therefore inhalation should be avoided.

## Flammability



The active ingredients themselves are not classified as flammable. Some products contain flammable or highly flammable solvents.

## Environmental



Most products are classified as hazardous to the aquatic environment.

## Biodegradability

Most products are biodegradable but some are classed as not readily biodegradable.



### **What are the hazards associated with Redicote® products in emulsions and dope solutions?**

It has been shown that the level of emulsifiers or dope in run-off water arising from paving operations is below the level that would be hazardous to personnel or the environment.

Flammable products should not be used to prepare dope solutions on site as water-based alternatives are available.

### **What are the hazards associated with Wetfix® products in binders during paving?**

Although ammoniacal odours may be detected from vapours arising from hot paving applications with treated binders, measurements have shown that the concentrations are below that are hazardous to health (ref Previa report).

### **How do I handle the products safely?**

Suitable face mask, gloves (see SDS for each product) and protective clothing should always be worn when handling the products. The use of contact lenses should be avoided.

Do not eat, drink or smoke in the vicinity of the products.

For optimal safety and performance of our products they should be mechanically added avoiding skin contact and minimizing the risk of splashing. Special care should be taken if manual addition to hot bitumen can't be avoided.

### **What action should be taken in case of contact with personnel?**

**Ingestion** Do not induce vomiting. Seek medical advice.

**Skin contact** Remove contaminated clothing and protective equipment. Wash skin with 0.5 % acetic acid solution followed by water or use diphoterine, then soap and water. Dry clean contaminated clothing and clean protective equipment before re-use. Seek medical advice if symptoms appears.

**Eye contact** Rinse with 0.5 % acetic acid solution or use diphoterine, followed by plenty of clean water. Seek immediate medical attention.

**Inhalation** Vacate affected area. Seek medical advice if there are any prolonged symptoms.



### **What action should be taken in case of release to the environment?**

Spillage should be contained as far as possible. Products should be collected using absorbing materials and disposed of according to local regulations. Alert appropriate authorities in the event of large spillage or fire.

### **How are the products used?**

Redicote® emulsifiers are dispersed in warm acidic water containing approximately 50% of desired amount of acid. Once the emulsifier is dispersed the remaining acid is added establish the desired pH.

Wetfix® adhesion promoters are preferably added to hot binders using an in-line dosing system.

Some paste products need to be heated to be liquefied.

### **How should the products be stored?**

To avoid degradation the products should be stored at ambient temperature in closed containers. Some products should preferably be stored at 20°C to maintain in a liquid state. If solidification has occurred due to cold storage, liquefaction can be accelerated by warming.

In the case of Bulk or Tank storage, we recommend the use of a nitrogen blanket which prevents the discolouration and slows the breakdown of the product. It is also recommended to use lowwatt density heaters in combination with stirring or circulation pumping to prevent local overheating. Contact our sales representative for further information.

Contamination with water will cause most products to gel and some to degrade. Therefore water ingress into storage containers must be prevented.

Proper storage conditions will ensure that most products remain stable for a minimum of three years.

### **What should I do with waste packaging?**

All containers should be thoroughly emptied and drip free before disposal.

IBC's can be returned to the manufacturer for recycling – use contact details on container label.

Drums should be disposed of according to local regulations.





### **How long can Wetfix® adhesion promoters be stored in hot binders?**

Wetfix® products are alkaline and will, therefore, degrade due to reaction with the acidic components in the bitumen which reduces effectiveness. The rate of this degradation is normally referred to as the heat stability of the system. This is dependent on the acid value and storage temperature of the bitumen, and the heat stability of the adhesion promoter.

### **How should products be dosed?**

Redicote® emulsifiers and Wetfix® adhesion promoters are best added using a metered pump.

Wetfix® products should be added in a manner which minimises storage time in the hot binder where possible in order to reduce degradation.

### **How can I check dosage levels after addition?**

Some of the Redicotes can be determined in an aqueous solution by a suitable titration method for surface active cat ions.

It is not possible to determine Wetfix® levels once the treated binder has been mixed with an aggregate and therefore it is recommended to confirm by keeping good, accurate and detailed records of a mass balance.

Alternatively, retained treated bitumen samples may be examined by a standard stripping test.

If necessary addition levels can be accurately determined by specialised analytical techniques using retained samples of treated binders.

### **What materials should be used in equipment?**

Mild steel is suitable for all Wetfix® products.

Mild steel is suitable for most Redicote® emulsifiers. Some products contain chloride ions and/or water in which case special advice should be sought.

PTFE (i.e. Viton C) or polyamide seals or gaskets may be used.

### **What materials should be avoided in equipment?**

Copper alloys, aluminium, butyl and natural rubbers will be adversely affected.

The manufacturer's advice should be obtained.

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