



## Sal CURB® CD Dry

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Sal CURB® CD Dry is a dry antimicrobial powder, used for the disinfection of feed system surfaces, such as feed mills, silos, bunkers and vehicles. It is a blend of three organic acids (formic, lactic and propionic acid) and their salts. Its antimicrobial properties curb the growth and accumulation of pathogens, fungi and bacteria, such as *Salmonella* on surfaces. The organic acids are effective in penetrating bacterial cell membranes, causing a decrease in intracellular pH and ultimately resulting in cellular exhaustion and death of bacteria and microbes. Sal CURB® CD Dry is effective in reducing pathogens present on surfaces.

### How does Sal CURB® CD Dry work?

The active ingredients in Sal CURB® CD dry are organic acids, which are known for their use as antimicrobial agents in livestock feed, meat and carcass surfaces.

The different organic acids follow a specific pathway to exert antimicrobial behavior. Intact acids in contact with microbial cell membranes will passively diffuse across the cell wall. Once inside the bacterial cell the organic acid then dissociates. Dissociation leads to an accumulation of protons inside the bacterial cell wall, thus lowering the intracellular pH. The bacterium depletes its energy reserves, trying to stabilise the intracellular pH, by removing the excess protons. Depletion of energy and low pH of the bacterium cell leads to bacteriostatic.

Sal CURB® CD Dry is designed to be applied with a Kemin Powder Duster Applicator. The product sticks when sprayed onto metal surfaces, this is because of its small particle size and it being electro-statically charged by the applicator. This gives it sufficient contact time to effectively reduce and kill-off microbes at the target application point.

### Where can one apply Sal CURB® CD dry?

Sal CURB® CD Dry can be sprayed onto multiple surfaces and has multiple application functions, to treat surfaces where there are microbial concerns. Application can be done within feed mills, especially in your critical control points such as coolers, outloading bins, bagging units and feed loading trucks and silos. See dosage table for further reference on applications.

### How often should one spray Sal CURB® CD Dry on a surface and why?

Sal CURB® CD Dry should be applied on surfaces every 8 - 24 hours. Microbes are continuously replicating when conditions are favourable (nutrient supply, moisture and correct temperature) and replication is exponential, thus application needs to be done regularly, to ensure continuous management of microbial levels. More frequent treatment is often preferable to higher dosages for surface treatments, to keep replication under manageable levels.

### Why is it in a dry powder form and not a liquid form?

One of the key requirements for microbial growth is moisture, thus the addition of any form of a liquid within a stationary region is considered a risk, as there is generally not enough time to allow for drying to take place. A liquid residue within feedmills and trucks would thus be a risk for microbial growth. Organic acids in liquid form are also more corrosive and may thus damage equipment over time. The product is manufactured to be applied onto equipment and surfaces where raw materials and feeds are moving through or being kept before use/delivery and there is a fair amount of dust and residue build up within these types of areas. Using a dry product is a more practical approach and allows for equipment to be used within 20 minutes after application, where wet products may require hours to completely dry in enclosed areas and inaccessible regions.

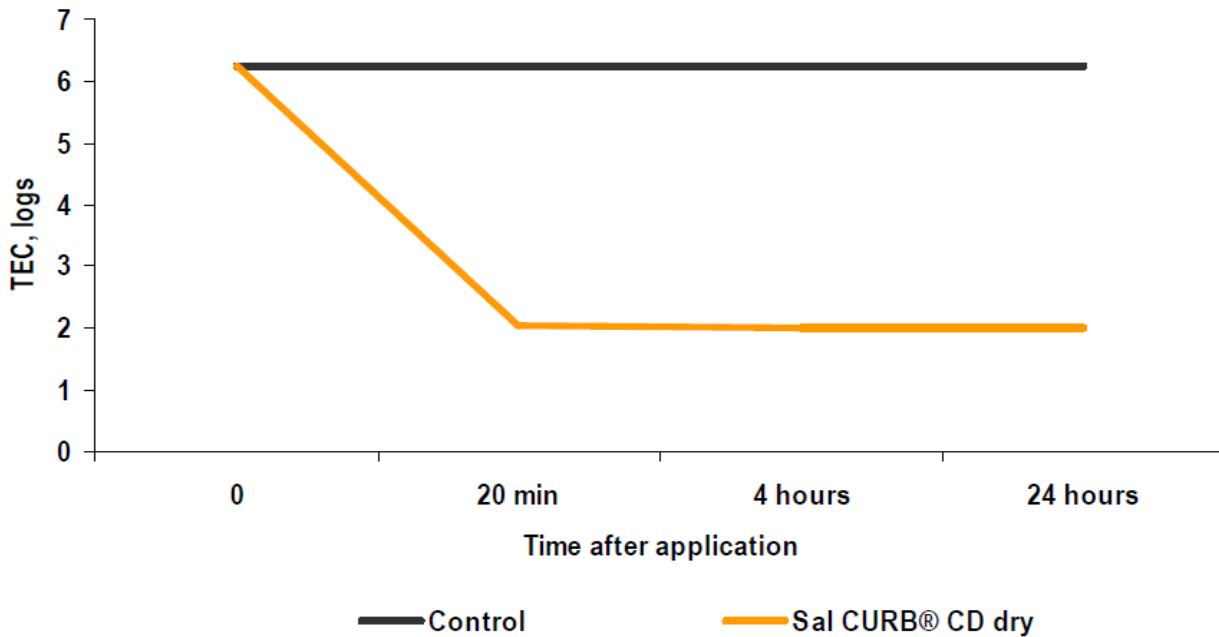
### What happens when sprayed on a wet surface?

The product should be applied onto dry surfaces, after physical cleaning has been completed. Wet spots within a production region can lead to accumulation of material and wetness, which may increase the risk of microbial growth and “hot spots” where a permanent risk is present due to high microbial growth and moisture in a location. Application of a dry product onto a wet region or any dusty area will result in only surface treatment of the area, leading to ineffective microbial control, as the product cannot penetrate through layer of dust/ material, as it is designed as a surface disinfectant and will treat the area it is in contact with only. The mechanism of action relies on direct contact with the microbes, thus wet surfaces will hinder the efficacy of the product to treat an area and this method of application is not advised.

### What is the recommended dosage of Sal CURB® CD Dry?

For the disinfection of surfaces Sal CURB® CD Dry is recommended at a rate of 1 kg/25 m<sup>2</sup> surface area and left for a period of 20 minutes to ensure kill-off.

Area	General Dosage Recommendation (kg / treatment)
Feed Intakes	2 – 6 (depending on size)
Elevators	0.5
Conveyors	1
Mixer	2 – 4 (depending on size)
Conditioner	0.5
Cooler	2
Raw Material Silos	1 kg/ 25 m <sup>2</sup>
Bunkers	1 kg/ 25 m <sup>2</sup>
Farm Feed Silos	2 kg/ silo (depending on size)
Truck Compartments	1 kg/ compartment
Truck Socks & Hopper Boxes	0.5
Mash Feed Treatment	3 – 8 kg/ton
Pelleted Feed Treatment	3 – 6 kg/ton
Flushing	450 kg blended with 550 kg carrier (eg. ground maize)



**Figure 1.** Efficacy of Sal CURB® CD dry on reduction of TEC

### **Can it be used as an alternative to pesticides?**

Sal CURB® CD Dry is specifically designed to decontaminate surfaces from microorganisms such as bacteria, fungi and pathogens. The product has not been registered for use against insects and has never been tested for this purpose. Kemin does not advise using the product for managing insects/ pests.

### **Is Sal CURB® CD Dry dangerous?**

Kemin strives to ensure the highest possible safety levels and always recommends protecting yourself from dust and fine particles, when working around feed and feed ingredients. The correct PPE should always be worn when working with Sal CURB® CD Dry, as the product does have a pungent/ strong smell and does contain organic acids, which can be irritants. Although the smell is not harmful, it can be an irritant and a full face mask with respirator valves is recommended, when applying and working with the product, to ensure comfortable and safe application of the product. Kemin always advises wearing gloves, face masks and protective clothing when working with the product.

### **Is the product harmful to humans if inhaled/ smelled?**

No, the product is not harmful if inhaled/ smelled. The smell of the product may be an irritant however, as the product does have a strong smell. Wearing of PPE, such as a face mask with respirator valves and gloves is advised.



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### **How does one order the Kemin Powder Duster Applicator?**

Contact your Kemin account manager/ distributor for a quotation from the PAD department.

### **What is the shelf life of the product?**

The shelf life of Sal CURB<sup>®</sup> CD Dry is 24 months from the date of manufacturing.

### **References**

1. Kemin Internal Document: BB-07-00024.