

Algoclear Pro: The sustainable way to clean thatch safely & effectively

1 The product

Algoclear Pro is a high purity Didecyl dimethyl ammonium chloride (DDAC). It is a quaternary ammonium, a *cationic surface-active agent* also described as a biocidal surfactant. The surfactant property is to form a foam blanket when sprayed. Like all surfactants, it has an affinity with lipids and makes them water soluble. It is sometimes used to degrease or de-grime surfaces.

The biocidal property is at work on a roof. The active ingredient has several properties:

- **It kills the biofilm.** This consists of mixtures of many species of bacteria, as well as fungi, algae, yeasts, protozoa, and other microorganisms living on a surface.
- **Algoclear Pro does not oxidise or interact with materials or metabolites.** It is safe for use on all building materials, coatings and sealants. Specifically the Nitrogen element is not deleterious to reed or straw.
- **It is safe in use.** The recommended concentration for thatch is 1.3% w/w. At this dilution the product bears the same SDS hazard and precautionary statements as common domestic product. Animals should be kept away during wet work, it is a safe environment once dried. As appropriate, any accidental overspray should be rinsed with water. Algoclear Pro has received HSE approval for "PT2" applications - surface biocide - as safe for use on children's play areas and equipment.
- **Algoclear Pro degrades in contact with live biomass.** This is the mechanism of environmental acceptability: The product cannot migrate in the ground or drain without being quickly de-activated. The amount of live biomass to treat on a surface always influences the dosage.

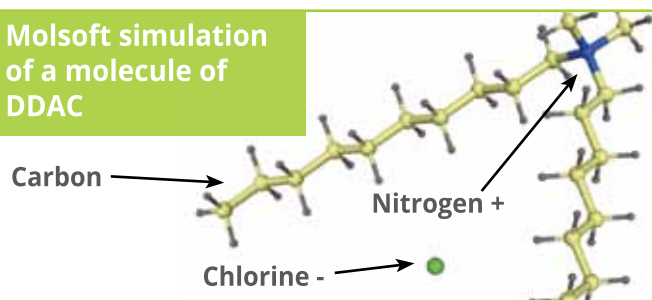


Apply by spray



Algoclear Pro kills the biofilm

Molsoft simulation of a molecule of DDAC



Algoclear Pro degrades in contact with live biomass

2 Application

A successful application consists in soaking the reeds as deep as the rainwater penetrates. The amount of **Algoclear Pro** to use will vary with the amount of live organisms to kill. It is therefore sensible to remove moss and loose material before application.

The jet should be directed to penetrate the reed open end and the space between them. A fan jet will foam the mix and give a good visual for an even application. The surfactant mix penetrates deeper than water by capillary action. If the lower layer of the biofilm is not reached on the day, percolating rain water will further disseminate the active ingredient.

The amount of active ingredient in dry form per m² of roof is the real measure of the treatment potency. The dosage can be applied with a weak mix applied liberally or a strong one applied thinly. When the water evaporates, the active ingredient remains as a pure salt deposit. It is very potent in this form and active at 70% relative humidity.

3 Results

The effect of the treatment on the biofilm is rapid. The biofilm is by and large dead when the reed has dried. The post treatment result may not always be immediately visible.

Algae disappears within a few hours, leaving a temporary milky sheen if the biofilm is dense.

Moss will turn brown within a few hours and begin to decay. Lichen can be deceptive in keeping their colour after the algae within it has died. They eventually crumble and fall.

Fungi will also die by contact. They are not visible but the dark metabolites they excrete to protect themselves from sunlight is. It is water soluble and undergoes photolysis (decomposes by the action of light): Black/grey discolouration takes time to disperse, however roofs are sufficiently exposed to natural elements of wind and rain to show visual results within a few weeks or a few months.

For that we consider an application at a concentration of 1 part **Algoclear Pro** to 30 parts water, applied at a rate of two litres per m². At this rate 10 litres of **Algoclear Pro** treats 150 m² of thatched roof.

On clay tiles or natural slates with little or no absorption the concentration is increased to leave enough deposit through a thinner application rate. We recommend fitting a flow meter to the equipment as a mean of monitoring quantities.

Mixing is best made using a precise injection device. A self-contained box, easy to carry on site which will auto mix as you spray. Mains pressure is often sufficient to obtain a good plume of coarse and fast droplets using a pole or sprinkling device. If mains pressure does not produce a straight fan jet a booster pump will be needed. A UK wide network of **Algoclear Pro** trained applicators, with experience and equipment of roof treatments, is available for those preferring to outsource delivery of treatment.

For good results the roof should be dry on the day of the treatment. This is particularly important for moss if gorged with rain water at the time of treatment, the biocide will not penetrate and the moss eventually revive.

Lead work: Upon exposure lead can leach grey carbonates onto the reeds or in less polluted areas turn brown (Lead oxide). Lead work should be cleaned from time to time. Use **Oxiclear** - an acidic gel formulated to dissolve oxides from any metal used in roofing.

4 Treatment time & periodicity

The ideal treatment time is when the first moss balls begin to appear. This will vary from site to site and elevation to elevation. Following consultation with Master Thatchers, treatment will be best carried out on average at year 3 on a new roof of a north facing elevation and a year later elsewhere.



Injection box



Lead work should be cleaned using Oxiclear



4 year old roof ready for first maintenance treatment

The treatment periodicity will vary as much as the rate of contamination in any given environment. Reed and straw will store some active ingredient and slowly release it as with any porous substrate. On thatch treatment durability predictions learned on roof tiles would be hazardous. However, a 3 year period seems a reasonable assumption.

Guarantee: Manufacturers and artisans can only guarantee what they can control: Given the prominence of environmental conditions in the durability of a treatment, the conditions are not met where a valid guarantee can be issued.



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