Lamberti ceramics

Technical data sheet
June 2023

Carbosan CD 50

Chemical description

Mixture of isothiazolinones

Main use

Antimicrobial preserving agent for the ceramic industry.

Typical values

Appearance at 20°C: clear liquid
Colour at 20°C: yellow-brown
2-metil-4-isotiazolin-3-one (MIT): 4.50 -5.50
pH: 8 ÷ 9,5

Properties

In absence of suitable preserving agents, the fluids used in the manufacturing of ceramics, such as body, engobe and glaze slips, solutions of fixing agents and screen-printing pastes, can be affected by the action of micro-organisms, with subsequent alteration of their properties and appearance of defects, bad odours, etc. In particular the attack effected by the microorganisms against glues, binding agents, fixing agents is a well-known cause for viscosity decreasing and poor performance of these products. This causes losses affecting productivity and quality, or at least uneasiness for the workers, which are forced to do corrective actions.

CARBOSAN CD50 is particularly suitable to meet with the different requirements of the ceramic industry;
Concerning the use in the ceramic industry, the qualifying characteristics are:

Effective at alkaline pH

Body, engobe and glaze slips frequently show high pH values. CARBOSAN CD50 is effective up to pH 10 -11 and more. It is often omitted that many preserving agents have no activity, or degrade when the pH value exceeds 9.

Thermal stability

In body grinding, glaze application, etc. it is possible to get temperatures up to 60°C. This condition wouldn't affect the preservative activity.

Liquid state

Reduces contact and inhalation risks inherent in handling powdered products. It simplifies use and dosing, which can be easily automated where continuous and regular dosing is necessary (collection pits, water basins, decanters).

A wide spectrum of action

A good protection against all the dangerous microorganisms (bacteria, yeasts or moulds) is guaranteed, and the development of resistant species is very rare. In fact the peculiarity of some products for some microorganisms surely causes their disappearance but, in the meantime, improve the growth of the kinds immune to the action of the biocide. The wide spectrum of action reduces greatly the possibility of adaptation.
CARBOSAN CD 50 is an energetic product, recommended when the operating conditions are on average more critical than normal, when pH and temperature values are high, for long-term storage, etc.

The problem of enzymes

Bacteria, molds and yeasts carry out their degradation action by means of the secretion of enzymes, proteins which in a certain sense constitute their "gastric juices". If these microbes have been given the opportunity to proliferate before intervening with suitable antimicrobials, it is possible that the enzymes remain present and active after the disappearance of the microorganisms that generated them. In this case we will see very rapid effects (e.g. enamel slips that lose their viscosity within a few hours), and the addition of preservatives will seem to have no effect. If this eventuality occurs (typically, after reopening from the summer holidays), The only solution is to clean the machinery, pipes and tanks and remediate them with a high dose of Carbosan CD 40 or CARBOSAN 135/TR.

Applications

CARBOSAN CD 50 can be introduced at the beginning of the preparation in the mill and/or in the water in case of preparations of mother solution of organic binders. The doses of use depend on the type of material to be preserved, the nature of the contamination present and the preservation time you intend to achieve. As an indication, these dosages can be adopted:

CARBOSAN CD50 0.05 - 0.15%

Antimicrobials generally demonstrate two levels of action: at low doses there is a biostatic effect, i.e. the inhibition of the proliferation of the microorganisms present, while at higher doses there is a biocidal effect, i.e. the total elimination of contaminants.

Therefore, the most convenient use involves adopting a medium-low dosage day by day, while with a frequency that can be weekly, monthly or seasonal depending on the needs, it is advisable to proceed with total disinfection with a dosage of up to 0.2 ÷ 0.3% of CARBOSAN CD 40 or CARBOSAN 135/TR.

Storage and handling

Avoid exposure to extremes of temperature. Do not store at temperatures above 40°C and do not expose to frost. Keep containers tightly closed. Carbosan CD 50 is stable for at least 12 months under normal conditions of good storage.

Packaging

25 kg drums
50 kg baskets
1000 kg tanks

Material safety

Consult the Safety Data Sheet