

BIOCIDE BAC 50

Description

Colourless/pale yellow liquid, cationic

Chemical and physical data

Chemical Base: Alkyl benzyldimethylammonium chloride

Synonyms: Quaternary ammonium salt, Preventol*

Solvent: Water

Characteristic	BAC 50
Assay	Potentiometric titration 48-52%
Odour	Odourless
pH (1 % in demineralized water)	7-8, DIN ISO 787(9)
Density at 20°C	approx 0.98 g/cm ³
Viscosity at 20°C	approx 107 mPas DIN 53211
Solidification point	approx. -6°C
Boiling point	approx. 100°C
Flash point	> 100°C
Ignition temperature	470°C DIN 51794
Surface tension	0.1% H ₂ O solution, 49 dyn/cm
Stability range	pH 1-12
Solubility	water, alkalis, lower alcohols, ketones

Applications

Quaternary ammonium salt, BAC 50 has broad spectrum of activity covering algae, lichens and slime-forming organisms as well as bacteria, fungi and yeasts.

Suited for formulating disinfectants. Microbicidal activity is influenced by germ count.

If the germ count is low (10³ per ml disinfectant solution), micro-organisms can be completely eliminated with much lower application concentration than is needed if germ count is high (10⁷). To expand spectrum of activity to cover gram-negative bacteria, in particular hospitalism germs *Pseudomonas aeruginosa* and tubercle bacillus, BAC 50 can be combined with phenolic microbicides.

Improves their poor ability to withstand dirt and serum. BAC 50 activity against *Staphylococcus aureus* and *Escherichia coli* is not influenced by pH.

Activity against *Pseudomonas* species is affected by pH.

In weakly acidic range these germs are eliminated completely, even in presence of organic matter, using much lower application concentration than is needed in the neutral or alkaline range. Combination with non-ionic or cationic surfactants to improve cleaning power also have favourable effect on antimicrobial activity. Anionic surfactants and soaps, on the other hand, reduce antimicrobial activity and should therefore not be used.

BAC 50 reduces surface tension of water, which ensures optimum surface wetting

The high affinity of this microbicide for surface increases duration of activity but is undesirable for cleaning production equipment used in live microbe cultures.

Production equipment must be rinsed with fresh water after disinfection.

BAC 50 is effective to prevent growth of lichens, algae, fungi on stone or concrete

terraces, roofs, gravestones. Prevents algae and slime formation in swimming pools

Effectiveness

Bacteria

Mould fungi

Staphylococcus aureus

Escherichia coli

Pseudomonas aeruginosa

Disinfectant properties can be optimized by carefully combining various disinfectant active ingredients with other suitable components such as surfactants, solvents, complexing agents, fragrances, corrosion inhibitors, etc.

Suggested formulations for various fields of application can be supplied on request.

Safety data

Registry of Toxic Effects of Chemical Substances, NIOSH USA, NT 8050000

BAC 50-Acute toxicity: LD₅₀ oral, rat: approx. 650 mg/kg (calculated from toxicity of concentrated active ingredient) In tests in rabbits, the product has corrosive effect on skin (after 24-hour exposure) and eyes. It clouds the cornea.

Ecotoxicity.

Acute fish toxicity:

BAC 50: LCo In Brachydanlo rerlo - 4 mg/J (test duration - 96 h)

L^{oo} In Brachydanlo rerlo - 5 mg/J (test duration - 96 h)

LCo In Leuciscus idus - 0.5 mg/J (test duration - 48 h)

German water hazard classification (WGK): 3 - extremely hazardous

BAC 50 Biodegradability: The product is eliminated from water.

The test was carried out using adapted bacteria.

Tolerable concentrations for bacteria in activated sludge:

BAC 50: approx. 20 mg/l

Labelling: Products are labelled in accordance with Regulations on Hazardous Substances Appendix I No.1, of April 23, 1990 (principle of definition)

and the relevant EC Directives: Symbol: C

Hazard classification: corrosive. Contains alkyl dimethylbenzylammonium chloride

Toxicity – BAC 50 Acute toxicity:

LD₅₀ oral, rat: approx. 350 mg/kg

(for alkyl benzyldimethylammonium chloride 80%)

LD₅₀ oral, rat: 5,045 mg/kg (for isopropanol) [1]

LC₅₀ Inhaled, rat: 16,000 ppm, after 8-hour exposure (for isopropanol) r11

Precautions: When handling BAC 50, the precautions generally recommended for handling chemicals should be observed. Protective gloves and safety goggles should be worn. If the product comes into contact with skin, the affected area should be washed immediately with soap and plenty of water.

Splashes in the eyes should be rinsed out immediately with plenty of water.

If irritation persists, medical attention should be obtained.

Soiled clothing should be changed immediately.

Fire precautions: In event of fire, hydrogen chloride and nitrogen oxides may occur.

Extinguishing agents: where possible use water mist, at same time cooling container with a water jet; otherwise foam, CO₂ or dry powder.

Precautions after spillage and leakage: Contain BAC 50 with absorbent material

(e.g. sand), remove mechanically and fill into labelled containers.

When disposing of any spillage or leak, always observe the relevant local regulations, e.g. controlled incineration. If empty containers are passed on uncleaned, they should be treated in the same way as the product. Inform the recipient on product properties. Special precautions: Prevent electrostatic pick-up, which may occur depending on the handling and packaging of the product and on the equipment used.

*Preventol is trademark of Bayer Company

As we have no control over product R&D and manufacturing, we don't guarantee accuracy or completeness of information released from manufacturing sources. Before order and use, user shall determine suitability of product for intended use. Supplier's only obligation is to replace the product quantity proved to be defective. The user is responsible for safety storage, handling, application and disposal.