BIOCIDE DDAC

Product Information (Modified supplier information sheet)

BIOCIDE DDAC is a twin chain quaternary ammonium based biocide with broad activity spectrum against bacteria, moulds, yeasts, algae and enveloped viruses. It has high tolerance to organic soiling, hard water and anionic residues, good surfactant properties, wide use acceptance and a large amount of toxicological and ecotoxicological data.

Chemical and Physical Characteristics

Composition:	50% di-*n*-decyldimethyl ammonium chloride, 99% C_{10}-C_{10}, MW 361
Appearance:	Pale, clear liquid
Cationic Content:	50.0 – 52.5%
Colour (APHA):	<100
Amine value:	<2 mg/g
Solubility:	Fully soluble in water, low molecular weight alcohols and ketones.
Stability in Application*:	Stable in the presence of light, over the pH range 2 - 10 and at up to 120°C.

Biocidal Properties

The active agent typically exhibits the highest biocidal efficacy of all quaternary compounds. The performance advantage is especially evident in the presence of hard water and organic soiling, compared with simple Benzalkonium chloride quaternaries. Given below are examples of relevant organisms against which it is particularly effective:

Test Micro-organisms

Bacteria	Moulds/Yeasts	Algae
Bacillus cereus	Alternaria alternata	Chlorella pyrenoidosa
Bacillus strearothermophilus	Aspergillus niger	Chlorella vulgaris
Bacillus subtilis	Apergillus versicolor	Nostoc commune
Corynebacterium diphtheriae	Aureobasidium pullulans	Phormidium faveolarum
Desulphovibrio desulphuricans	Candida albicans	Phormidium inundatum
Enterobacter aerogenes	Chaetomium globosum	Phormidium uncinatum
Enterococcus faecium	Cladosporidium cladosporoides	Scenedesmus obliquus
Escherichia coli	Coniophora puteana	Scenedesmus vacuolatus
Klebsiella pneumoniae	Coriolus versicolor	**Viruses**
Leuconostoc mesenteroides	Epidermophyton floccosum	
Listeria monocytogenes	Gleophylum trabeum	Adenovirus
Mycobacterium smegmatis	Microsporum canis	Hepatitis B
Pseudomonas aeruginosa	Microsporum gypseum	Herpes virus
Pseudomonas cepacia	Penicillium glaucum	HIV-1
Proteus mirabilis	Penicillium verrucosum	Newcastle Disease
Proteus vulgaris	Poria placenta	Rhabdovirus
Salmonella choleraesuis	Saccharomyces cerevisiae	
Salmonella typhi	Trametes versicolor	
Shigella somnei	Trichoderma viride	
Staphylococcus aureus	Trichophyton mentagrophytes	
Streptococcus faecalis		
Streptococcus pneumoniae		
Streptococcus pyogenes		
Vibrio cholerae		

Applications / Use Levels

BIOCIDE DDAC is suitable for a wide range of applications, e.g.

- for formulation of disinfectants, cleansers and sterilants for the food and drink industries, hospitals, household, industrial kitchen, veterinary and institutional applications.
- as a base for antimicrobial hand scrubs and cleansers
- as a fungicidal/algicidal wash for maintenance or pre-decoration treatment of masonry, brick, timber, plaster, paintwork, etc.
- for the prevention of algae and "slime" in swimming pools, industrial water reservoirs and cooling towers
- for preparation of wood preserving formulations intended for primary treatment and secondary preservation, EU/AWPA classes 2, 3 and 4, by dip, spray or vacuum application.

The concentration to use will depend on the application in question and the degree of antimicrobial performance required. More precise information regarding the concentration required for specific applications, such as timber preservation, can be advised or determined by the local **Microbiological Technical Centre**.

Addition / Compatibility

BIOCIDE DDAC is a strongly cationic product and therefore incompatible with formulations containing anionic components. It may, however, be used with other cationic or non-ionic compounds. Users are therefore strongly advised to carry out their compatibility tests or seek further advice prior to initial application.

Please note that the pH of **BIOCIDE DDAC** on production is in the range 6.5 – 8.0 (2% aqueous solution) but this may drift downwards with time. Such variation has no effect on the product's biocidal properties.

Packaging / Storage / Transport / Regulatory Approvals

Packaging:	180 kg plastic drums and 900 kg intermediate bulk containers
Shelf Life:	24 months from production date when stored at approximately 20°C.
Availability:	Ex stock in the above packaging
Storage:	Protect from extremes of temperature Crystallisation may be seen at below 10°C but this is reversible on warming.
Transportation:	**BIOCIDE DDAC** is classified as hazardous for transport.
Registration of BIOCIDE DDAC or Formulations:	It is the responsibility of the user to obtain registration for formulations based on **BIOCIDE DDAC** appropriate to its recommended application and the country territory in which it will be used. Further advice should be sought from **a supplier**.

Safety / Labelling / Toxicology

For detailed information on the toxicology and handling of **BIOCIDE DDAC** and advice on the labelling of products in which it may be used, please refer to the separate Material Safety Data Sheet or seek specific advice from **a supplier.**

* The data given are time and system dependant.