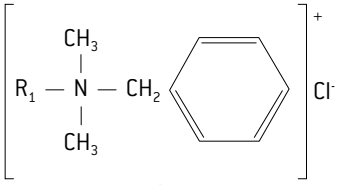
Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials

Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials contain the active substance $C_{12\text{-}14}$ Alkyl dimethyl benzyl ammonium chloride (ADBAC). The active substance is a cationic molecule offering good surfactant properties and can be formulated together with nonionic- and/or amphoteric surfactants. ADBAC has a broad antimicrobial efficacy against gram-positive and gram-negative bacteria, yeast, and enveloped viruses. High antimicrobial efficacy is maintained across a broad pH-range and ADBAC is stable in formulations with a wide range of pH levels. ADBAC's are used in a number of applications such as food processing, institutional, veterinary, healthcare areas, and medical device disinfectants. Barquat® LB-50 is a lower foaming ADBAC and of special interest for applications that require a low foaming level. Barquat® MS-100 is a powder ADBAC and of high interest for solid products like granules, tablets or powder formulations.



$R_1 = C_{12\text{-}14}$

Active Ingredient

$C_{12\text{-}14}$ Alkyl dimethyl benzyl ammonium chloride (ADBAC)

Barquat® LB-50		
	CAS-No.	EC-No.
BPR**:	85409-22-9	287-089-1
REACH	–	939-350-2

REACH Reg. No.: 01-2119970550-39-XXXX

REACH Name: Benzyl-C12-14-alkyldimethylammonium chlorides

Barquat® MS-100		
	CAS-No.	EC-No.
BPR**:	85409-22-9	287-089-1
REACH	139-08-2	205-352-0

REACH Reg. No.: 01-2120754638-42-XXXX

REACH Name: Tetradecyldimethylbenzylammoniumchloride

Application Areas

Customers use $C_{12\text{-}14}$ Alkyl dimethyl benzyl ammonium chloride Antimicrobials as an active ingredient in biocidal products for hygiene applications such as:

- Hospitals and other healthcare settings
- Food & beverage processing
- Food handling and preparation facilities
- Institutional cleaning
- Veterinary hygiene
- Medical Device disinfectants

Non-hygiene applications include uses in Construction Material Preservatives, in Preservatives for liquid-cooling and processing systems, Slimicides and Embalming liquids.

Overview of Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials

The data and information provided in the following tables is not part of a product specification. For purposes of Quality Assurance please refer to the Product Specification and the Certificate of Analysis, which are available on request.

Product	Average active content	Typical C-chain distribution	Average content of water
Barquat® LB-50	50% C_{12-14} ADBAC	C12 ~99%	50% water
Barquat® MS-100	100% C_{12-14} ADBAC, dihydrate	C14 ~99%	–

Typical Physical & Chemical Properties

Average values	Barquat® LB-50	Barquat® MS-100
Physical state	Liquid	Powder
Appearance	Clear colourless to pale yellow	White
Colour (APHA)	max 100	–
Odour	characteristic	characteristic
Average Molecular Weight	350	408
Density (20°C)	0.98 g/ml	–
Bulk Density	–	~800 kg/m3
Flash Point (Abel Pensky c.c.)	> 100 °C	> 100 °C
Viscosity (dynamic, 20°C)	~90 mPa · s	–
pH (1% in Water, 20°C)	6.0–8.0	7.0–8.0
VOC Free	Yes	Yes
Product Shelf Life	2 Years	2 Years

Packaging

Barquat® LB-50
- 200 kg net weight drum

Barquat® MS-100
- 25 kg net weight can

Storage

Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials must be stored in the original sealed container. Products can be stored in the sealed original packaging for a period of up to two years after manufacture, (as stated in the Certificate of Analysis).

Low temperature exposure of Barquat® LB-50 Antimicrobial (below setting point* / melting temperature*) may result in a physical change in the material such as haze formation, crystallisation or stratification of the product. In such cases, the material can be reconstituted by warming (taking into consideration the flash point* and relevant safety data*), ensuring sufficient ventilation to prevent pressurisation and not leaving the container fully open to the atmosphere. Subsequent agitation / mixing will result in the material being reconstituted. This process can be accelerated at higher temperatures, but it is recommended that the temperature should not exceed 40°C. To the best of our knowledge the product quality and the antimicrobial efficacy of homogenised material will not be affected.

Formulation Guidelines

Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials can be used alone or in combination with other biocides to formulate products for a wide range of professional and consumer hygiene applications.
All formulations must be tested for chemical and physical stability and biocidal performance to ensure suitability before placing on the market. The efficacy of such formulations is dependent on a number of parameters, such as pH value and the ratio between ADBAC / surfactants (typically 1:1).

Technical Service

For further technical guidance and support, please contact your nearest Lonza sales representative or office.

Risk Assessment and Management

Lonza professionals have a wide expertise in the fields of Safety, Health, and the Environment. Lonza Specialty Ingredients is committed to and uses this expertise in understanding the suitability of ADBAC for specific applications. Please contact your local Lonza office should you have questions in this area.

Health and Safety

Safety Data Sheets for Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials can be supplied upon request. They should be read and understood by all supervisory personnel and employees before using the product. Please contact your local Lonza sales office for advice in case of any questions.

Regulatory Information

The active substance ($C_{12\text{-}14}$ ADBAC) in Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials is being supported through the European Biocidal Products Regulation (BPR)** Active Substance Review Program for the following Product Types:
- PT1 Human hygiene;
- PT2 Private area and public health area disinfectants and other biocidal products;
- PT3 Veterinary hygiene biocidal products;
- PT4 Food and feed area.

Customers must ensure compliance with any local regulatory requirements which may apply to their end use product, formulated with Barquat® LB-50 and Barquat® MS-100 Special Antimicrobials.

$C_{12\text{-}14}$ ADBAC is also supported for non-hygiene product types:
- PT10 (Construction Material Preservatives)
- PT11 (Preservatives for liquid-cooling and processing systems)
- PT12 (Slimicides)
- PT22 (Embalming liquids)

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* Please refer to the corresponding Safety Data Sheet
** Biocidal Products Regulation; Regulation (EU) 528/2012