



Arquad[®] MCB-50 antimicrobial



Guideline formulations with BKC
for surface disinfection

Nouryon

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We are a leading producer of biocidal active substances based on fatty amines and derivatives like quaternary ammonium compounds (quats or QAC). One of these quats highly potent is BKC = Alkyl (C12-16) dimethylbenzyl ammonium chloride (CAS number 68424-85-1). It is widely used in formulations for control of bacteria, fungi, viruses and algae in the field of disinfection.

BKC is a highly potent biocidal active substance with broad spectrum of efficacy

Our product Arquad® MCB-50 antimicrobial contains 50% BKC in water.

Microbiological efficacy data

The data below refer to aqueous dilutions of Arquad® MCB-50 antimicrobial. They allow to calculate effective levels for different concentrations of dilutable concentrates or ready to use products resulting from dilution of Arquad® MCB-50 antimicrobial with water.

All EN tests were performed at clean conditions (0.3 g/l Albumin).

EN 1276 (Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas)
Test strains: Staphylococcus aureus, Enterococcus hirae, Escherichia coli, Pseudomonas aeruginosa
Passing criteria: log 5 reduction
Test passed at 0.04% Arquad® MCB-50 = 0.02% BKC in 5 min

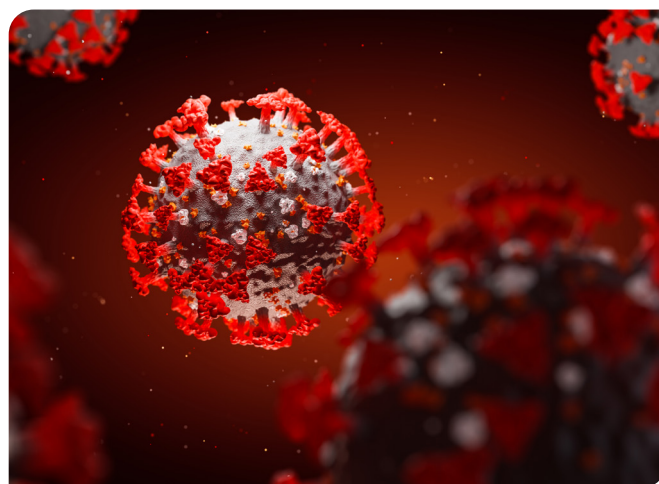
EN 1650 (Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas)
Test strain for yeasticidal activity: Candida albicans
Passing criteria: log 4 reduction
Test passed at 0.4% Arquad® MCB-50 = 0.2% BKC in 5 min

EN 13697 (Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas)
Test strains for bactericidal activity: Staphylococcus aureus, Enterococcus hirae, Escherichia coli, Pseudomonas aeruginosa
Test strain for yeasticidal activity: Candida albicans
Passing criteria for bactericidal activity: log 4 reduction
Passing criteria for yeasticidal activity: log 3 reduction
Test passed at 0.4% Arquad® MCB-50 = 0.2% BKC in 5 min

EN 16615 (Quantitative test method for the evaluation of bactericidal and yeasticidal activity on non-porous surfaces with mechanical action employing wipes in the medical area (4-field test))

Test strains for bactericidal activity: Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa
Test strain for yeasticidal activity: Candida albicans
Passing criteria for bactericidal activity: log 5 reduction
Passing criteria for yeasticidal activity: log 4 reduction
Test passed at 0.01% Arquad® MCB-50 = 0.005% BKC in 5 min

EN 14476 (Quantitative suspension test for the evaluation of virucidal activity in the medical area)
Test strain for virucidal activity of surface disinfectants against enveloped viruses: modified vaccinia virus Ankara (MVA)
Passing criteria: log 4 reduction
Test passed at 0.2% Arquad® MCB-50 = 0.1% BKC in 5 min



EN 16777 (Quantitative non-porous surface test without mechanical action for the evaluation of virucidal activity of chemical disinfectants used in the medical area)
Test strain for virucidal activity against enveloped viruses: modified vaccinia virus Ankara (MVA)
Passing criteria: log 4 reduction
Test passed at 0.5% Arquad® MCB-50 = 0.25% BKC in 15 min

EN 17387 (Quantitative test for the evaluation of bactericidal and yeasticidal and/or fungicidal activity of chemical disinfectants in the medical area on non-porous surfaces without mechanical action)
Test strains for bactericidal activity: Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa
Test strain for yeasticidal activity: Candida albicans
Passing criteria for bactericidal activity: log 5 reduction
Passing criteria for yeasticidal activity: log 4 reduction
Test passed for bactericidal activity at 0.3% Arquad® MCB-50 = 0.15% BKC in 5 min
Test passed for yeasticidal activity at 0.6% Arquad® MCB-50 = 0.3% BKC in 5 min



EN 14561 (Quantitative carrier test for the evaluation of bactericidal activity for instruments used in the medical area)

Test strains: Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa

Passing criteria: log 5 reduction

Test passed at 0.6% Arquad® MCB-50 = 0.3% BKC in 5 min

EN 14562 (Quantitative carrier test for the evaluation of fungicidal or yeasticidal activity for instruments used in the medical area)

Test strain for yeasticidal activity: Candida albicans

Passing criteria for yeasticidal activity: log 4 reduction

Test passed for yeasticidal activity at 0.4% Arquad® MCB-50 = 0.2% BKC in 5 min

EN 17111 (Quantitative carrier test for the evaluation of virucidal activity for instruments used in the medial area)

Test strain: modified vaccinia virus Ankara (MVA)

Passing criteria: log 4 reduction

Test passed at 0.3% Arquad® MCB-50 = 0.15% BKC in 15 min



Modified OECD 201 (Suspension test on algaecidal activity)

Test strains: Chlorella vulgaris; mixed terrace culture

Dirty conditions: 3 g/l Albumin

Passing criteria: 95% reduction

Test passed with 100% reduction at 0.1% Arquad® MCB-50 = 0.05% BKC in 48 hours

Field test on algaecidal activity (Field test performed on naturally grown green deposit on 3 outside surfaces)

Test strains: naturally grown green deposit

Dirty conditions according to natural soiling of outside surface

Passing criteria: reduction of green color, visualized via photos

Test passed at 1.5% Arquad® MCB-50 = 0.75% BKC (200 ml/m²) in 4-68 days

Phys/chem data

Appearance, pH, density, viscosity

	50% BKC	0.25% BKC
Appearance	light yellow liquid	clear liquid
pH value	7.9	7.7
Density at 20°C [g/cm ³]	0.9846	0.9982
Kin. Viscosity OECD 114 at 20°C [mm ² /s]	135.7	0.94
Kin. Viscosity OECD 114 at 40°C [mm ² /s]	43.9	0.64

Persistent foaming

(CIPAC MT 47.3.: A glass stoppered measuring cylinder with test solution was inverted 30 times without bouncing the fluid at a temperature of 22°C. The measuring cylinder was then left undisturbed for 12 minutes on the bench while the foam volume was read after 10 seconds, 1 minute, 3 minutes and 12 minutes.

Foam volume [ml] after	0.75% BKC	0.25% BKC
10 seconds	20	21
1 minute	19	21
3 minutes	18	19
12 minutes	10	14

Regulatory background

Nouryon supports BKC as active substance according to European Biocidal Product Regulation (EU BPR: Regulation (EU) No 528/2012) for the Product Types (PT) 1, 2, 3, 4, 8, 10, 11, 12.

More detailed information on the BPR and the status of the approval process of all our active substances can be taken from our Nouryon Factsheet Biocides available on request.

Regarding the disinfectant product types 1, 2, 3 and 4 BKC is already approved according to the EU BPR. This means that biocidal products based on this active substance had to undergo authorisation process by submission of a corresponding application. Based on the specific deadlines per PT the evaluation of these applications might be still ongoing meaning that the products may stay on the market in those countries in which they were on the market under transitional legislation before the deadline.

Nouryon applied for a Biocidal Product Family for Union Authorisation based on BKC concentrations between 50% and 0.25% for PT2 and 4. The application of our "Nouryon BKC Family" was submitted in June 2025 and is currently under evaluation.

Customers of Arquad® MCB-50 antimicrobial interested to join the "Nouryon BKC Family" after authorisation (not expected before mid-2028) can pick up contact with their corresponding Account Manager.



Contact us directly for detailed product information and sample request
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email | cleaning@nouryon.com

Nouryon

Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of more than 8,200 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

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