



ELPROTECT – BKC™ (Benzalkonium Chloride)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White to light yellow viscous liquid (in aqueous solution)
Physical Form	Liquid
Molecular Weight (g/mol)	234.81
Density or Specific Gravity	0.989 g/cm ³
Viscosity	0.581 cP at 20 °C
pH (aqueous solution)	6-8 (10 g/L, 20°C); 7-7.5 (50% solution)
Chemical Properties	
Solubility	Chloroform (Slightly), Methanol (Slightly)
Incompatibilities	Strong oxidizing agents, moisture (hygroscopic)
Hazardous Reactions	Decomposes on heating to toxic/corrosive fumes; may cause contact dermatitis
Thermal Properties	
Boiling Point	100°C
Melting Point	-5°C
Decomposition Temperature	Decomposes on heating
Thermal Stability	Stable below 30°C; decomposes at high temperature

2. Processing Methods



Cosmetic cream

Add BZK during the cool-down phase to prevent degradation. Use compatible emulsifiers to avoid destabilization. Typical concentration is 0.1-0.2%, and ensure the preservative system complements BZK's antimicrobial spectrum.

Key Ingredients	Indicative Dosage (% w/w)
Water (Aqua)	70%
Glycerin	5%
Cetearyl Alcohol	4%
Caprylic/Capric Triglyceride	6%
Isopropyl Myristate	3%
Stearic Acid	2%
Triethanolamine (TEA)	0.8%
Benzalkonium Chloride (50% sol.)	0.2%
Allantoin	0.5%
Panthenol (Pro-Vitamin B5)	1%
Tocopheryl Acetate (Vitamin E)	0.5%
Dimethicone	2%
Fragrance	0.5%
Phenoxyethanol & Ethylhexylglycerin	1%
Citric Acid (10% solution)	0.4%

Cosmetic cleansers

For cosmetic cleansers, add Benzalkonium Chloride during the final formulation stage at temperatures below 40°C to preserve its antimicrobial activity.

Key Ingredients	Indicative Dosage (% w/w)
Emollients	20-30%
Preservatives (BKC)	0.01 to 0.1%
Humectants	~0.8%
Water	70-80%
Fragrance, pH Adjusters, Surfactants etc.	



Shampoo

When adding Benzalkonium Chloride (BKC) to shampoo, incorporate it during the cool-down phase to maintain its antimicrobial efficacy.

Key Ingredients	Indicative Dosage (% w/w)
Benzalkonium chloride	0.5%
Aqua	96.85%
Lauryl Methyl Gluceth-10 Hydroxypropyldimonium Chloride	0.2%
Glycerin, Rosa Canina Fruit Extract	1%
Hexylene Glycol	0.8%
Sodium Chloride	0.5%

Hand Wash

When formulating hand wash with Benzalkonium chloride, ensure it is added during the cooling phase to prevent degradation.

Key Ingredients	Indicative Dosage (% w/w)
Benzalkonium chloride	0.13%
Cocamidopropyl Betaine	1.4%
Water	85-95%
Anhydrous Citric Acid	0.0004%
Sodium Laureth Sulfate:	4.2%
Sodium Chloride	1.4%

3. Dosing by Application

Products	Authorized dosage
Hand sanitizer wipes, Antiseptic creams, and Anti-itch ointments	0.1%
Cosmetic cream	0.01-0.5%
Cosmetic cleansers	0.01 to 0.1%

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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