

Certificate of Analysis

Product: Benzalkonium Chloride 50% Solution

Item Number: BZKNF50

Grade: NF

Lot Number: 230514-A

Manufacture Date: 03/09/2023

Expiration Date: 03/08/2025

Country of Origin: United States

| Tested Property | Specification | Analysis |
|---|--|-------------------------------|
| Assay, Alkylbenzenedimethyl ammonium chloride | 47.5 -52.5% w/v | 51.2%w/v |
| Description | Clear liquid to slightly yellow | Passes |
| Odor | Slightly aromatic odor | Passes |
| Identification A | A white precipitate is formed | Passes |
| Identification B (Chloride) | (191) Meets requirement | Passes |
| Identification C | Organge-Red color is produced | Passes |
| Identification D, HPLC | Retention time corresponds to standard | Passes |
| Alkyl Chain C12, % | ~40.0 | 67.8 |
| Alkyl Chain C14, % | ~20.0 | 26.5 |
| Alkyl Chain C12 + C14, % | ~70.0 | 94.3 |
| Total alkyl ammonium chlorides, % | 47.5-52.5 | 51.2 |
| Limit of Amine and Amine Salts | No Perceptible odor | Passes |
| Free Amine (Mw226), mmol/g | ~0.1 | 0.031 |
| Amine HCL (Mw262.5), mmol/g | Max. 0.011 | ~0.011 |
| Alcohol Content if added | None Added | 0.0000% none detected |
| Benzyl Alcohol, % | ~0.5 | 0.001 |
| Benzaldehyde, % | ~0.15 | None Detected @ 0.0001% limit |
| Chloromethyl Benzene, % | ~0.05 | None Detected @ 0.0001% limit |
| Acidity or Alkalinity | ~0.1ml 0.1N HCL or 0.1N NaOH | 0.075ml 0.1N HCL |
| Microbial Enumeration (61), (62) | Aerobic Plate count <10cfu/g | Passes |

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| | |
|------------------------------|---------------|
| Yeast & Mold <10cfu/g | Passes |
| USP candida albicans | None Detected |
| USP Aspergillus brasiliensis | None Detected |
| USP Bile Tolerant Gram-Neg. | None Detected |
| USP Clostridia sp. | None Detected |
| USP Escherichia coli | None Detected |
| USP Staphylococcus sp. | None Detected |
| USP Pseudomonas aeruginosa | None Detected |
| USA Salmonella sp. | None Detected |

[Benzalkonium Chloride 50% Solution](#)

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