POLY QUAT
WATER TREATMENT
QUATERNARY BIOCIDES

CAS Number- 68424-95-3 and 68424-85-1

POLY QUAT is a radically new development based upon atomes "Twin Chain" quaternary ammonium compound technology. **POLY QUAT** , when evaluated by accepted laboratory procedures, provides superior bactericidal, algaecides and fungicidal activity far beyond that achieved with other available quaternary ammonium compounds. This provides the formulator with unequaled latitude in the design of biocidal products.

Chemical Composition – Typical
Active Ingredients POLY QUAT
Alkyl (C14 50%, C12 40%, C16 10%) Dimethyl Benzyl Ammonium Chloride 2.0%
Octyl decyl dimethyl ammonium chloride 1.5%
Dioctyl dimethyl ammonium chloride 0.6%
Didecyl dimethyl ammonium chloride 0.9%

Specifications
pH (1% Active Solution): 7.00
POLY QUAT contains 5% active polyquats. When used at:
-0.2% (2 mL/L), it generates 100 active ppm
-0.4% (4 mL/L), it generates 200 active ppm
-0.8% (8 mL/L), it generates 400 active ppm
-1.0% (10 mL/L), it generates 500 active ppm

Summary of the superior performance characteristics of POLY QUAT :

- Broad spectrum biocidal activity against both gram-positive and gram-negative organisms.
- Increased hard water tolerance.
- Superior fungicidal performance.

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MICROBIAL ACTIVITY

Test Organism	Minimum Effective Concentration
Staphylococcus aureus	250 ppm active quaternary
Salmonella choleraesuis	250 ppm active quaternary
Pseudomonas aeruginosa	450 ppm active quaternary
Pseudomonas cepacia	450 ppm active quaternary
Escherichia coli	250 ppm active quaternary
Serratia marcesens	250 ppm active quaternary
Brevibacterium ammoniagenes	250 ppm active quaternary
Salmonella typhi	250 ppm active quaternary

Test Organism	Hard Water Concentration	Minimum Effective Concentration
Pseudomonas aeruginosa	0 ppm/$CaCO_3$	450 ppm active quaternary
	300 ppm/$CaCO_3$	850 ppm active quaternary
	400 ppm/$CaCO_3$	850 ppm active quaternary
	500 ppm/$CaCO_3$	1000 ppm active quaternary
Salmonella choleraesuis	0 ppm/$CaCO_3$	250 ppm active quaternary
	300 ppm/$CaCO_3$	600 ppm active quaternary
	400 ppm/$CaCO_3$	600 ppm active quaternary
	500 ppm/$CaCO_3$	700 ppm active quaternary
Pseudomonas cepacia	400 ppm/$CaCO_3$	850 ppm active quaternary

POLY QUAT has been cleared by the FDA as an “Indirect Food Additive’’, under 21 CFR part 178.1010 at a concentration of 150-400 ppm active, and requires no water rinse. This clearance covers the usage of **POLY QUAT** on food processing equipment and utensils and food contact surfaces in public eating places. In addition, the use of sanitizing solutions based on **POLY QUAT** fulfills the criteria of the Grade “A” Pasteurized Milk Ordinance 1978 Recommendations of the United States Public Health Service.

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Fungicidal Activity
Test Organism Ten Minute Killing Dilution (100% Active)
Trichophyton mentagrophytes 1:8000 (125 ppm)

APPLICATIONS
POLY QUAT will control algae and bacterial slimes found in recirculating cooling tower water and oil field water floods. They help clean and loosen slime deposits from cooling and flooding system surfaces. When used in slug doses, no other biocide is often required.

Application	**Recommended Use-levels on a 100% Active Basis**
Recirculating Cooling Tower	
- Initial Dosage	20-30 ppm
- Subsequent Dosages	7-10 ppm
Oil FieldWater Flood	
- Continuous Addition	5-10 ppm
- Intermittent Addition	5-20 ppm

P&P MILLS
Initially use 20 ppm active quaternary.
Once control is achieved, lower dosage to 7-10 ppm to maximize cost performance.

Oil Field Water Flood/Salt Water Disposal System
DO NOT APPLY IN MARINE AND ESTUARINE OIL FIELDS.
For control of slime-forming and sulfate-reducing bacteria in oil field water flood or salt water disposal systems, add 5-10 ppm active quaternary continuously. Levels for effective control will vary depending on conditions at the site. For intermittent use, dose at a rate of 5-20 ppm active for 4-8 hours per day, one to four times a week as needed to maintain control.

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