



G-Quat 100 Biocide

Manufacturing Procedure

EPA Number: 10324-209

Formulations:

Components	% by Weight	Amount (Lbs.)	% by Weight	Amount (Lbs.)	Certified Limits (% by Weight)
De-Ionized Water	69.00	690.00	--	--	66.90 - 71.10
	--	--	44.00	440.00	42.70 - 45.30
Glutaraldehyde (50%)	25.00	250.00	--	--	23.80 - 26.20
Glutaraldehyde (25%)	--	--	50.00	500.00	47.60 - 52.40
G-quat 2420-50%	6.00	60.00	6.00	60.00	5.60 - 6.40
Total	100.000	1,000.00	100.000	1,000.00	

Components	% by Weight	Amount (Lbs.)	% by Weight	Amount (Lbs.)	Certified Limits (% by Weight)
De-Ionized Water	71.25	712.50	--	--	69.10 - 73.40
	--	--	46.25	462.50	44.90 - 47.60
Glutaraldehyde (50%)	25.00	250.00	--	--	23.80 - 26.20
Glutaraldehyde (25%)	--	--	50.00	500.00	47.60 - 52.40
G-quat 2420-80%	3.75	37.50	3.75	37.50	3.50 - 4.00
Total	100.000	1,000.00	100.000	1,000.00	

Always Check With Flex-Chem to get the latest formulation options available

Density of Actives: G-QUAT 2420-50% (EPA Reg. No. 10324-126) (50% active) 5th Generation Quat (Density 7.99 lbs/gal)
G-QUAT 2420-80% (EPA Reg. No. 10324-127) (80% Active) 5th Generation Quat (Density 7.66 lbs/gal)
Glutaraldehyde (50% active) EPA Reg. No. 464-691, 1448-427, or 33753-23 (Density 9.42 lbs/gal)
Glutaraldehyde (25% active) EPA Reg. No.464-690 (Density 8.88 lbs/gal)

M.W. Actives: The molecular weight of G-QUAT 2420-50% and G-QUAT 2420-80% is 360.
The molecular weight of Glutaraldehyde 25% and 50% is 100.

Procedure: Mixing Instructions

Note: The process uses either a) G-QUAT 2420-50% (50% active) or b) G-QUAT 2420-80% (80% active) and either c) glutaraldehyde 50% or d) glutaraldehyde 25% as the quaternary ammonium chloride and glutaraldehyde starting materials, respectively. The relative amount of the water is adjusted accordingly to which quaternary ammonium chloride and glutaraldehyde products are used to manufacture G-QUAT 12:3. The description below shows the amount of G-QUAT 2420-50% and glutaraldehyde 50% used to prepare 2000kg of finished G-QUAT 12:3.

Step 1. Addition of Dilution Water - Charge 1380kg of de-ionized water into an appropriate mixing vessel equipped with an agitator (3000L Capacity). The agitator is started.

Step 2. Addition of Active Ingredients – Add 500kg of 50% aqueous glutaraldehyde to the mixing vessel. Allow the mixture to mix for at least 30 minutes prior to adding 120kg of G-QUAT 2420-50%.

After the appropriate amount of G-QUAT 2420-50% has been charged to the mixing vessel, the mixture should be agitated for an additional 30 minutes.

Step 3. Once the mixture has been agitated for an additional 30 minutes, the pH of the product should be checked and a small sample drawn to run quat and glutaraldehyde analysis on the product. The quat and glutaraldehyde content of G-QUAT 12:3 should be between the following 2.8 to 3.2% and 11.9 to 13.1%, respectively.

Percent Actives:

Quaternary Ammonium Chloride	2.8 - 3.2%
Glutaraldehyde.....	11.9 – 13.1%
Appearance @25°C	Colorless to Light Yellow Liquid
pH (as is).....	3.5 – 5.5
Density (lbs./gal)	8.5 ± 0.1
Viscosity, cps @ 25°C.....	<50
Flash Point (ASTM D-56, TCC)	>210 °F (99.3°C)