

G-QUAT 200

Manufacturing Procedure

EPA Number 10324-188-88655

Overview There are two options to choose from when making G-Quat 200: (1) formulating with Quat 2420-

50% and 50% glutaraldehyde or (2) formulating with Quat 2420-80% and

50% glutaraldehyde.

Formulations

Components	% by Weight	Amount (Lbs.)	% by Weight	Amount (Lbs.)	Certified Limits (% by Weight)
Water			7.50	75.00	71.25 – 78.75
Glutaraldehyde	80.00	800.00	80.00	80.00	776.00 - 824.00
Quat 2420-50%	20.00	200.00			190.00 - 210.00
Quat 2420-80%			12.50	125.00	118.75 – 131.25
Total	100.000	1,000.00	100.000	1,000.00	

Density of Actives QUAT 2420-50% (50% active) 5th Generation Quat (Density 7.99 lbs/gal)

QUAT 2420-80% (80% Active) 5th Generation Quat (Density 7.66 lbs/gal)

Glutaraldehyde (50% active) (Density 9.42 lbs/gal)

MW Actives The molecular weight of QUAT 2420-50% and QUAT 2420-80% is 360.

The molecular weight of Glutaraldehyde 50% is 100.

Procedure Mixing Instructions

Note: The process uses either a) QUAT 2420-50% (50% active) or b) QUAT 2420-80% (80% active) as the quaternary ammonium chloride starting material. The relative amount of the water is adjusted accordingly to which quaternary ammonium chloride product is used to manufacture G-Quat 200. The description below shows the amount of QUAT 2420-80% used to prepare 2000kg of finished QUAT 40:10.

Step 1. Addition of Dilution Water - Charge 150kg of deionized water into an appropriate mixing vessel equipped with an agitator (3000L Capacity). The agitator is started.

Step 2. Addition of Active Ingredients – Add 1,600kg of 50% aqueous glutaraldehyde to the mixing vessel. Allow the mixture to mix for at least 30 minutes prior to adding 250kg of QUAT 2420-80%. After the appropriate amount of QUAT 2420-80% 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 200 should be between the following 9.5-10.5% and 38.8 and 41.2%, respectively.

Typical Properties Percent Actives:

Quaternary Ammonium Chloride 9.5 - 10.5% Glutaraldehyde 38.8 - 41.2%

Appearance @ 25°C Colorless to Light Yellow Liquid

pH, (1% aq.) 3.5 - 5.5 Density (lbs./gal) 9.05 <u>+</u> 0.1 Viscosity, cps @ 25°C <100

Flash Point (ASTMD-56, TCC) $>210^{\circ}F (99.3^{\circ}C)$

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