

Suggested Guidelines for Preparing and Using AQUI-S[®] 20E as a Sedative

General Information:

- 20 - 30 mg/L eugenol (AQUI-S[®]20E is 10% eugenol) should work for sedation to handleable in most situations.
- Fish will usually become handleable in 1 - 5 minutes.
- Quantity of AQUI-S[®]20E needed for treatment should be measured volumetrically (i.e., milliliters).
- AQUI-S[®]20E should be added directly, while constantly mixing, to the full volume of treatment water. Do not make stock solutions or other dilute solutions of AQUI-S[®]20E prior to use. Rinse¹ measuring container (e.g., graduated cylinder) with treatment water to ensure all AQUI-S[®]20E is dispensed.

Suggested calculation: To determine the amount (ml) of AQUI-S[®]20E to add to treatment water to achieve target concentration of eugenol, use the following formula or Table 1 below.

$$\text{AQUI-S}^{\text{®}}20\text{E (ml)} = A \times B \times C \div D$$

Where: A = target concentration eugenol (mg/L)
 B = treatment water volume (gal)
 C = 0.00378 (conversion factor for grams per gallon)
 D = 0.1 (To account for the fact that AQUI-S[®]20E is 10% eugenol)

Example: Target concentration eugenol = 30 mg/L
 Treatment water volume = 10 gal

$$\text{Amount AQUI-S}^{\text{®}}20\text{E (ml) to add} = 30 \times 10 \times 0.00378 \div 0.1 = \mathbf{11.3 \text{ mL}}$$

or

Table 1. *Cheat Sheet* to determine the amount (mL) of AQUI-S[®]20E to add to treatment water to achieve target concentration of eugenol.

Target Conc. eugenol (mg/L)	Volume of Treatment Water (gal)									
	5	10	15	20	25	30	35	40	45	50
10	1.9 ml	3.8 ml	5.7 ml	7.6 ml	9.5 ml	11.3 ml	13.2 ml	15.1 ml	17.0 ml	18.9 ml
15	2.8 ml	5.7 ml	8.5 ml	11.3 ml	14.2 ml	17.0 ml	19.8 ml	22.7 ml	25.5 ml	28.4 ml
20	3.8 ml	7.6 ml	11.3 ml	15.1 ml	18.9 ml	22.7 ml	26.5 ml	30.2 ml	34.0 ml	37.8 ml
25	4.7 ml	9.5 ml	14.2 ml	18.9 ml	23.6 ml	28.4 ml	33.1 ml	37.8 ml	42.5 ml	47.3 ml
30	5.7 ml	11.3 ml	17.0 ml	22.7 ml	28.4 ml	34.0 ml	39.7 ml	45.4 ml	51.0 ml	56.7 ml

Footnote: 1. Although it is understood that graduated cylinders are designed such that the calibration marks take into account residual liquid adhering to its side (and it need not be rinsed to dispense the desired volume), rinsing the cylinder, in this case, will not significantly increase the actual treatment concentration.