

Question #51729, Chemistry, Other

A flow of 1.4 MGD is treated with sodium silicofluoride (Na_2SiF_6) to provide a fluoride ion dose of 1.3 mg/L. what is the feed rate in pounds per day? Commercial sodium silicofluoride has a purity of 98.5 percent and the fluoride ion purity as sodium silicofluoride is 60.7 percent.

Answer:

$$Q = \frac{1,400,000 \cdot 1.3}{0.985 \cdot 0.607} = 3,044,013 \text{ mg} / d = 3.04 \text{ kg} / d$$

1 pound = 0.45 kg

$$Q = \frac{3.04}{0.45} = 6.76 \text{ ponds} / \text{day}$$