

Jayden's group

remember 1 mL weighs 1g for water

	dye	pool water
averages	0.767 g or 0.767 mL	0.633 g 0.633 mL

STEP 1

Calculate [Methyl Orange Dye]

(MeO) Methyl orange ($C_{14}H_{14}N_3NaO_3S$)

so molar mass of MeO = 327.34 g/mol

The dye was made by dissolving 0.5g/L

so for MeO

$$n = \frac{m}{MM}$$

$$C = \frac{n}{V}$$

$$n(\text{MeO}) = \frac{\text{mass}(\text{MeO})}{\text{MM}(\text{MeO})}$$

$$= \frac{0.5}{327.34}$$

$$= 0.00153 \text{ mol}$$

$$\text{so } [\text{MeO}] = \frac{n}{V}$$

$$= \frac{0.00153}{1 \text{ L}}$$

$$= \underline{\underline{0.00153 \text{ M}}}$$

this is the same for all of you.

* From handout MeO reacts 1:1 with free chlorine.
so we can use this to calculate [free chlorine]

$$\text{use } C_1 V_1 = C_2 V_2$$