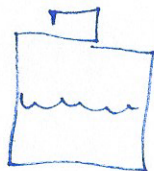


GC
VIAL

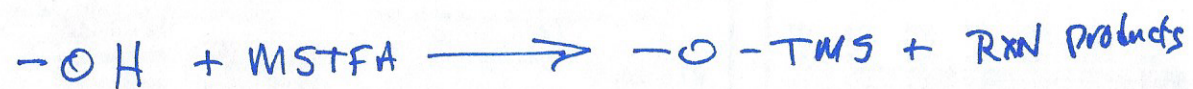


1 mL $C_{12}H_{26}$

+ SAMPLE



50 μ L MSTFA



Can we confirm that 50 μ L MSTFA is adequate?

What about sample size?

STOICHIOMETRY

How many moles are present in 50 μL of MSTFA?

$$\text{assume } \rho = 1 \text{ g/mL}$$

$$\text{MW} \sim 100 \text{ g/mol}$$

$$1 \text{ g/mL} \rightarrow 1 \text{ mg}/\mu\text{L}$$

$$50 \mu\text{L} \rightarrow 50 \text{ mg} \rightarrow 50 \times 10^{-3} \text{ g} \rightarrow 5 \times 10^{-2} \text{ g}$$

$$\frac{5 \times 10^{-2} \text{ g}}{100 \text{ g/mol}} \rightarrow 5 \times 10^{-4} \text{ mol} \rightarrow 500 \times 10^{-6} \text{ mol}$$
$$\rightarrow \boxed{500 \mu\text{mol}}$$

How many mols are in a sample?

1 mg/mL CBDA in G2H24

1 mL sample in GC vial

MW ~ 300 g/mol

3 active H



1 mg/mL & 1 mL $\rightarrow$ 1 mg CBDA

1 mg $\rightarrow 10^{-3}$ g

$$\frac{10^{-3} \text{ g}}{300 \text{ g/mol}} = \frac{1}{3} \times 10^{-5} \text{ mol CBDA}$$

3 H | ~~CBDA~~ $\rightarrow 3 \cdot \frac{1}{3} \times 10^{-5} \text{ mol H}$

10^{-5} mol H

$10 \times 10^{-6} \text{ mol H}$

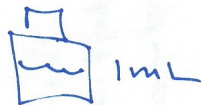
10 μ mol H

How many mols in a Sample?

1 mg/mL METHANOL (CH_3OH) in $\text{C}_2\text{H}_2\text{Cl}_4$

1 mL of sample in GC vial

1 active H MW = 32 g/mol



1 mg/mL $\downarrow$ 1 mL $\longrightarrow$ 1 mg CH_3OH

1 mg $\longrightarrow 10^{-3}$ g

$\frac{10^{-3} \text{ g}}{32 \text{ g/mol}} \longrightarrow \frac{1}{32} \times 10^{-4} \text{ mol}$

$\sim 0.3 \times 10^{-4} \text{ mol}$

$30 \times 10^{-6} \text{ mol}$

30 μmol H