

Lampiran 3. Perhitungan Data Analisis Mikroelementer

1. Perhitungan data mikroanalisis untuk senyawa dibutyltin(IV) oksida [(C₄H₉)₂SnO]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam } [(C_4H_9)_2SnO] \times \text{Ar atom C}}{\text{Mr } [(C_4H_9)_2SnO]} \\ &= \frac{8 \times 12 \text{ gram / mol}}{249 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 38,6 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam } [(C_4H_9)_2SnO] \times \text{Ar atom H}}{\text{Mr } [(C_4H_9)_2SnO]} \\ &= \frac{18 \times 1 \text{ gram / mol}}{249 \text{ gram / mol}} \times 100 \% \\ \% \text{ H} &= 7,3 \%\end{aligned}$$

2. Perhitungan data mikroanalisis untuk senyawa dibutyltin(IV) di-4-nitrobenzoat [(C₄H₉)₂Sn(OCOC₆H₄(NO₂)₂)]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam } [(C_4H_9)_2Sn(OCOC_6H_4(NO_2)_2)] \times \text{Ar atom C}}{\text{Mr } [(C_4H_9)_2Sn(OCOC_6H_4(NO_2)_2)]} \\ &= \frac{22 \times 12 \text{ gram / mol}}{565 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 46,73 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam } [(C_4H_9)_2Sn(OCOC_6H_4(NO_2)_2)] \times \text{Ar atom H}}{\text{Mr } [(C_4H_9)_2Sn(OCOC_6H_4(NO_2)_2)]} \\ &= \frac{26 \times 1 \text{ gram / mol}}{565 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 4,60 \%\end{aligned}$$

3. Perhitungan data mikroanalisis untuk senyawa difeniltimah(IV) dihidroksida [(C₆H₅)₂Sn(OH)₂]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam [(C}_6\text{H}_5)_2\text{Sn(OH)}_2\text{]} \times \text{Ar atom C}}{\text{Mr [(C}_6\text{H}_5)_2\text{Sn(OH)}_2\text{]}} \\ &= \frac{12 \times 12 \text{ gram / mol}}{307 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 46,9 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam [(C}_6\text{H}_5)_2\text{Sn(OH)}_2\text{]} \times \text{Ar atom H}}{\text{Mr [(C}_6\text{H}_5)_2\text{Sn(OH)}_2\text{]}} \\ &= \frac{12 \times 1 \text{ gram / mol}}{307 \text{ gram / mol}} \times 100 \% \\ \% \text{ H} &= 3,9 \%\end{aligned}$$

4. Perhitungan data mikroanalisis untuk senyawa difeniltimah(IV) di-4-nitrobenzoat [(C₆H₅)₂Sn(OCOC₆H₄(NO₂)₂)]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam [(C}_6\text{H}_5)_2\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2)_2\text{]} \times \text{Ar atom C}}{\text{Mr [(C}_6\text{H}_5)_2\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2)_2\text{]}} \\ &= \frac{26 \times 12 \text{ gram / mol}}{605 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 51,57 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam [(C}_6\text{H}_5)_2\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2)_2\text{]} \times \text{Ar atom H}}{\text{Mr [(C}_6\text{H}_5)_2\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2)_2\text{]}} \\ &= \frac{18 \times 1 \text{ gram / mol}}{605 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 2,975 \%\end{aligned}$$

5. Perhitungan data mikroanalisis untuk senyawa trifeniltimah(IV) hidroksida [(C₆H₅)₃SnOH]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam [(C}_6\text{H}_5)_3\text{SnOH}] \times \text{Ar atom C}}{\text{Mr [(C}_6\text{H}_5)_3\text{SnOH}]} \\ &= \frac{18 \times 12 \text{ gram / mol}}{367 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 58,9 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam [(C}_6\text{H}_5)_3\text{SnOH}] \times \text{Ar atom H}}{\text{Mr [(C}_6\text{H}_5)_3\text{SnOH}]} \\ &= \frac{16 \times 1 \text{ gram / mol}}{367 \text{ gram / mol}} \times 100 \% \\ \% \text{ H} &= 4,4 \%\end{aligned}$$

6. Perhitungan data mikroanalisis untuk senyawa trifeniltimah(IV)4-nitrobenzoat [(C₆H₅)₃Sn(OCOC₆H₄(NO₂))]

$$\begin{aligned}\% \text{ C} &= \frac{\sum \text{atom C dalam [(C}_6\text{H}_5)_3\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2\text{))}] \times \text{Ar atom C}}{\text{Mr [(C}_6\text{H}_5)_3\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2\text{))}] } \\ &= \frac{25 \times 12 \text{ gram / mol}}{516 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 58,14 \%\end{aligned}$$

$$\begin{aligned}\% \text{ H} &= \frac{\sum \text{atom H dalam [(C}_6\text{H}_5)_3\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2\text{))}] \times \text{Ar atom H}}{\text{Mr [(C}_6\text{H}_5)_3\text{Sn(OCOC}_6\text{H}_4\text{(NO}_2\text{))}] } \\ &= \frac{19 \times 1 \text{ gram / mol}}{516 \text{ gram / mol}} \times 100 \% \\ \% \text{ C} &= 3,68 \%\end{aligned}$$