Grams & Particles
Conversion Worksheet

Answer the following questions.

1) How many molecules are present in 200 grams of CCl_4?

2) How much does 4.5×10^{22} molecules of $Ba(NO_2)_2$ weigh?

3) How many molecules are there in 9.34 grams of LiCl?

4) How many molecules are present in 450 grams of Na_2SO_4?

5) How many molecules are present in 2.3 grams of NH_4SO_2?

6) How many grams do 4.3×10^{21} molecules of UF_6 weigh?

7) How many molecules are there in 230 grams of NH_4OH?

8) How many molecules are present in 230 grams of $CoCl_2$?

9) How many grams do 9.4×10^{25} molecules of H_2 weigh?

10) How many grams do 7.5×10^{23} molecules of H_2SO_4 weigh?

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Answers

1) How many molecules are present in 200 grams of CCl_4?

Number of molecules = (200/153.82) x 6.023×10^{23} = 7.83×10^{23}

2) How much does 4.5×10^{22} molecules of $Ba(NO_2)_2$ weigh?

The weight of 4.5×10^{22} molecules of $Ba(NO_2)_2$ is = $[(4.5 \times 10^{22})/(6.023 \times 10^{23})] \times 229.35$ = 17.13 grams

3) How many molecules are there in 9.34 grams of LiCl?

Number of molecules = (9.34/42.39) x 6.023×10^{23} = 1.33×10^{23}

4) How many molecules are present in 450 grams of Na_2SO_4?

Number of molecules = (450/142) x 6.023×10^{23} = 1.9×10^{24}

5) How many molecules are present in 2.3 grams of NH_4SO_2?

Number of molecules = (2.3/82.1) x 6.023×10^{23} = 1.69×10^{24}

6) How many grams do 4.3×10^{21} molecules of UF_6 weigh?

4.3×10^{21} UF_6 molecules weigh $[(4.3 \times 10^{21})/(6.023 \times 10^{23})] \times 352$ grams = 2.51 grams

7) How many molecules are there in 230 grams of NH_4OH?

Number of molecules = (230/35) x 6.023×10^{23} = 3.95×10^{24}

8) How many molecules are present in 230 grams of $CoCl_2$?

Number of molecules = (230/129.84) x 6.023×10^{23} = 1.06×10^{24}

9) How many grams do 9.4×10^{25} molecules of H_2 weigh?

9.4×10^{25} H_2 molecules weigh $[(9.4 \times 10^{25}/6.023 \times 10^{23})] \times 2$ grams = 312.13 grams

10) How many grams do 7.5×10^{23} molecules of H_2SO_4 weigh?

7.5×10^{23} H_2SO_4 molecules weigh $[(7.5 \times 10^{23})/(6.023 \times 10^{23})] \times 98$ grams = 122 grams

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