CHEM 10301

1.2 Key terms

Sep 1-6:23 PM

H_2 molecule
not a compound

H–H
covalent bond

NaCl not a molecule (ionic compound solid)

He atom
not a molecule
not a compound

NaCN sodium cyanide

$Na^+ CN^-$

Scientific notation

exponential notation

1 dozen atoms = 12 atoms

1 mole atoms = 6.02×10^{23} atoms

602000000000000000000000 atoms

$\frac{300000}{1 \text{ Al can}}$ $\frac{3 \times 10^{23} \text{ atoms}}{\text{atom}}$

Sep 1-7:06 PM

1 mm

1 cm = 10 mm

1 in = 2.54 cm exactly

SI units

length	m
mass	kg
time	s
temp	K

0 K = -273.15 °C
exact

Sep 1-7:16 PM

$$H_2 + \frac{1}{2}O_2 \longrightarrow H_2O$$

making water

$$2H_2 + O_2 \longrightarrow 2H_2O$$

He

1.4 Precision + Accuracy

1107 km 4 sig figs

0.0016 g 2 sig figs

1.107×10^{3} km

1.6×10^{-3} g

1000 s ? sig figs

1×10^3 s — 1 sig fig

1E3

1.0×10^3 s — 2 " "

1.00×10^3 s — 3 " "

1.000×10^3 s — 4 " "

1000.0 s — 5 sig figs

1.0000×10^3 s

$$H_2O_2 \xrightarrow{\text{dec.}} H_2O + \frac{1}{2}O_2$$

making water

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sucrose

$$2\,C_6H_{12}O_6 \xrightarrow{-H_2O} C_{12}H_{22}O_{11}$$

$$\text{hydrocarbon} + O_2 \longrightarrow CO_2 + H_2O$$