

3.3 Isotopes

Isotopes - atoms of the same element with a nucleus containing a different # neutrons.

(2x)

$\begin{array}{ c } \hline 12 \\ \hline \end{array}$ \swarrow mass # $\oplus + \ominus$	$\left[\begin{array}{l} 12 \\ 6 \end{array} \right]$ 99.9% atoms are neutral $\# \oplus = \# \ominus$	$\left[\begin{array}{l} 14 \\ 6 \end{array} \right]$ less than 0.1%	Atomic # = $\# \oplus$ Characteristic for the elements
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$6e^-$ $\left(\begin{array}{c} 6p \\ 6n \end{array} \right)$ nucleus	vs.	$6e^-$ $\left(\begin{array}{c} 6p \\ 8n \end{array} \right)$ nucleus has 2 more neutrons
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Average atomic mass \rightarrow average of all isotopes for an element considering the natural abundance.

Most stable isotopes for an element have $\oplus : \ominus$ of 1:1

Chart of naturally occurring isotopes

20	21	22	
Ne	Ne	Ne	
10+	10+	10+	}
10n	11n	12n	

all have $10e^-$

most stable

Average 20.1797