JEOL
Mass Spectrometers

Exact Masses of Some Common Elements and Their Isotopes

Disclaimer: These data are for informational use only. No guarantees are made for the accuracy of the data presented.

Element	Symbol	Exact Mass (u)	Rel. Abundance %
Hydrogen	^{1}H	1.00782504	100
Deuterium	^{2}H or D	2.01410179	0.0115
Carbon 12	^{12}C	12	100
Carbon 13	^{13}C	13.003354	1.08157
Nitrogen 14	^{14}N	14.003074	100
Nitrogen 15	^{15}N	15.00011	0.36936
Oxygen 16	^{16}O	15.9949146	100
Oxygen 17	^{17}O	16.9991306	0.03809
Oxygen 18	^{18}O	17.9991594	0.2055
Fluorine	^{19}F	18.998405	100
Sodium	^{23}Na	22.9897697	100
Silicon 28	^{28}Si	27.9769284	100
Silicon 29	^{29}Si	28.9764964	5.07776
Silicon 30	^{30}Si	29.9737717	3.34729
Phosphorus	^{31}P	30.9737634	100
Sulfur 32	^{32}S	31.972074	100

Element	Symbol	Exact Mass (u)	Rel. Abundance %
Sulfur 33	^{33}S	32.9707	0.80059
Sulfur 34	^{34}S	33.96938	4.51912
Sulfur 36	^{36}S	35.96676	0.02107
Chlorine 35	^{35}Cl	34.968854	100
Chlorine 37	^{37}Cl	36.965896	31.96094

Note on terminology: In the table above, the most abundant isotope is assigned a relative abundance of 100%. This is done because the mass spectrometrist is usually interested in how isotope abundances are expressed as relative peak heights or relative peak areas in a mass spectrum. This could be misleading if one thinks in terms of fractional isotope abundances (the usual chemical definition) where the sum of the fractional isotope abundances for all isotopes of a given element cannot be greater than 100%. The relative abundances in the table above can be expressed as fractional abundances if one divides each relative abundance by the sum of all of the relative abundances for all isotopes for the given element.