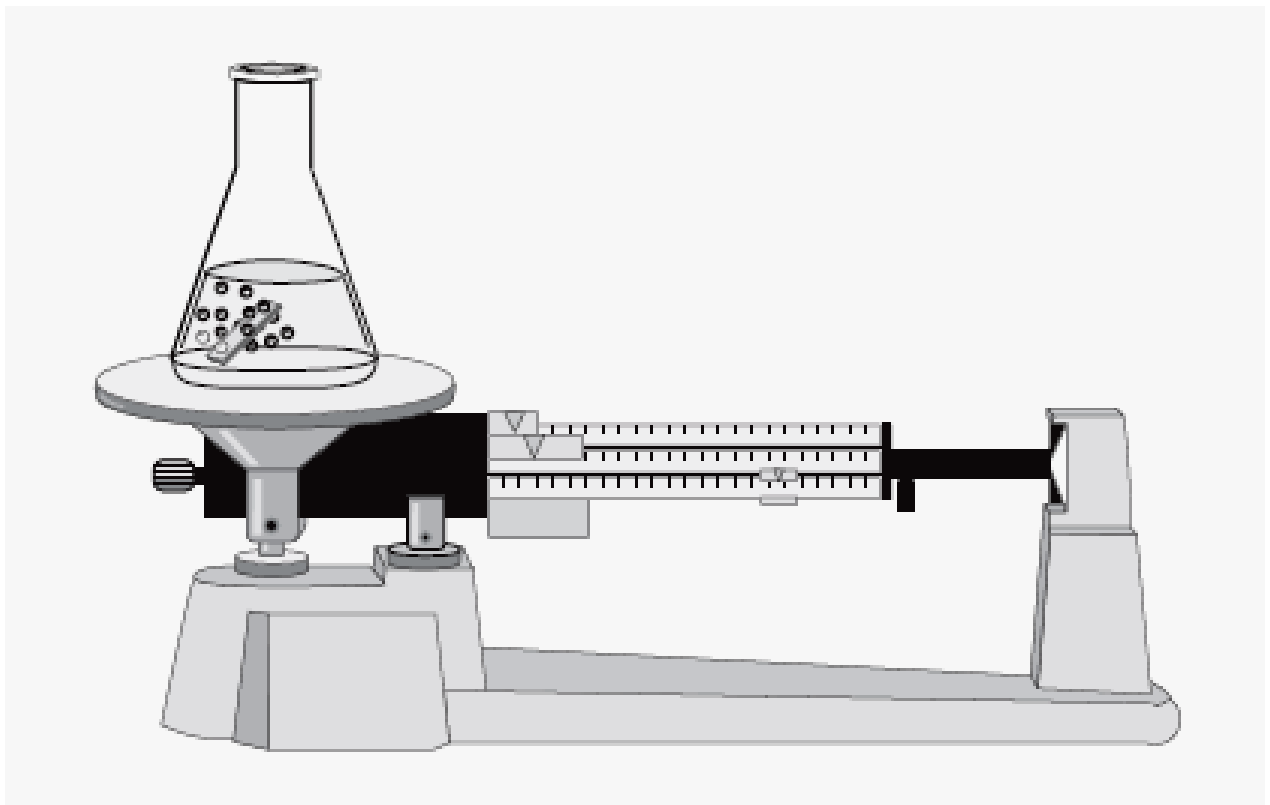


SC20F

Data Booklet



Work done in this booklet
will not be marked.

Periodic Table of the Elements

Group 1																		18
1 H Hydrogen 1.01												2 He Helium 4.00						
3 Li Lithium 6.94	4 Be Beryllium 9.01											13 B Boron 10.8	14 C Carbon 12.0	15 N Nitrogen 14.0	16 O Oxygen 16.0	17 F Fluorine 19.0	18 Ne Neon 20.2	
11 Na Sodium 23.0	12 Mg Magnesium 24.3											13 Al Aluminum 27.0	14 Si Silicon 28.1	15 P Phosphorous 31.0	16 S Sulphur 32.1	17 Cl Chlorine 35.5	18 Ar Argon 39.9	
19 K Potassium 39.1	20 Ca Calcium 40.1	21 Sc Scandium 45.0	22 Ti Titanium 47.9	23 V Vanadium 50.9	24 Cr Chromium 52.0	25 Mn Manganese 54.9	26 Fe Iron 55.8	27 Co Cobalt 58.9	28 Ni Nickel 58.7	29 Cu Copper 63.5	30 Zn Zinc 65.4	31 Ga Gallium 69.7	32 Ge Germanium 72.6	33 As Arsenic 74.9	34 Se Selenium 79.0	35 Br Bromine 79.9	36 Kr Krypton 83.8	
37 Rb Rubidium 85.5	38 Sr Strontium 87.6	39 Y Yttrium 88.9	40 Zr Zirconium 91.2	41 Nb Niobium 92.9	42 Mo Molybdenum 95.9	43 Tc Technetium (98)	44 Ru Ruthenium 101.1	45 Rh Rhodium 102.9	46 Pd Palladium 106.4	47 Ag Silver 107.9	48 Cd Cadmium 112.4	49 In Indium 114.8	50 Sn Tin 118.7	51 Sb Antimony 121.7	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.3	
55 Cs Cesium 132.9	56 Ba Barium 137.3	57 La* Lanthanum 138.0	72 Hf Hafnium 178.5	73 Ta Tantalum 180.9	74 W Tungsten 183.8	75 Re Rhenium 186.2	76 Os Osmium 190.2	77 Ir Iridium 192.2	78 Pt Platinum 195.1	79 Au Gold 197.0	80 Hg Mercury 200.6	81 Tl Thallium 204.4	82 Pb Lead 207.2	83 Bi Bismuth 209.0	84 Po Polonium (210)	85 At Astatine (210)	86 Rn Radon (222)	
87 Fr Francium (223)	88 Ra Radium (226)	89 Ac** Actinium (227)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (263)	107 Bh Bohrium (264)	108 Hs Hassium (265)	109 Mt Meitnerium (266)										

* 58 Ce Cerium 140.1	59 Pr Praseodyme 140.9	60 Nd Neodymium 144.2	61 Pm Promethium (145)	62 Sm Samarium 150.4	63 Eu Europium 152.0	64 Gd Gadolinium 157.2	65 Tb Terbium 158.9	66 Dy Dysprosium 162.5	67 Ho Holmium 164.9	68 Er Erbium 167.3	69 Tm Thulium 168.9	70 Yb Ytterbium 173.0	71 Lu Lutetium 175.0
** 90 Th Thorium 232.0	91 Pa Protactinium (231)	92 U Uranium 238.0	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (254)	100 Fm Fermium (257)	101 Md Mendelevium (256)	102 No Nobelium (259)	103 Lr Lawrencium (257)

(Based on a mass of ¹²C at 12.00. Values in parentheses are the mass of the most stable or best known isotopes for elements which do not occur naturally)

Names, Formulas, and Charges of Common Ions

POSITIVE IONS (CATIONS)

Name	Symbol	Name	Symbol
aluminum	Al ³⁺	lithium	Li ⁺
ammonium	NH ₄ ⁺	magnesium	Mg ²⁺
barium	Ba ²⁺	manganese(II)	Mn ²⁺
cadmium	Cd ²⁺	manganese(IV)	Mn ⁴⁺
calcium	Ca ²⁺	mercury(I)	Hg ₂ ²⁺
chromium(II)	Cr ²⁺	mercury(II)	Hg ²⁺
chromium(III)	Cr ³⁺	nickel(II)	Ni ²⁺
copper(I)	Cu ⁺	potassium	K ⁺
copper(II)	Cu ²⁺	silver	Ag ⁺
hydrogen,	H ⁺	sodium	Na ⁺
iron(II)	Fe ²⁺	strontium	Sr ²⁺
iron(III)	Fe ³⁺	tin(II)	Sn ²⁺
lead(II)	Pb ²⁺	tin(IV)	Sn ⁴⁺
lead(IV)	Pb ⁴⁺	zinc	Zn ²⁺

NEGATIVE IONS (ANIONS)

Name	Symbol	Name	Symbol
acetate	C ₂ H ₃ O ₂ ⁻ (CH ₃ COO ⁻)	nitrate	NO ₃ ⁻
azide	N ₃ ⁻	nitride	N ³⁻
bromide	Br ⁻	nitrite	NO ₂ ⁻
bromate	BrO ₃ ⁻	oxalate	C ₂ O ₄ ²⁻
carbonate	CO ₃ ²⁻	hydrogen oxalate	HC ₂ O ₄ ⁻
hydride	H ⁻	oxide	O ²⁻
hydrogen carbonate	HCO ₃ ⁻	perchlorate	ClO ₄ ⁻
chlorate	ClO ₃ ⁻	permanganate	MnO ₄ ⁻
chloride	Cl ⁻	phosphate	PO ₄ ³⁻
chlorite	ClO ₂ ⁻	monohydrogen phosphate	HPO ₄ ²⁻
chromate	CrO ₄ ²⁻	dihydrogen phosphate	H ₂ PO ₄ ⁻
citrate	C ₆ H ₅ O ₇ ³⁻	silicate	SiO ₃ ²⁻
cyanide	CN ⁻	sulfate (sulphate)	SO ₄ ²⁻
dichromate	Cr ₂ O ₇ ²⁻	hydrogen sulfate (sulphate)	HSO ₄ ⁻
fluoride	F ⁻	sulfide (sulphide)	S ²⁻
hydroxide	OH ⁻	hydrogen sulfide (sulphide)	HS ⁻
hypochlorite	ClO ⁻	sulfite (sulphite)	SO ₃ ²⁻
iodide	I ⁻	hydrogen sulfite (sulphite)	HSO ₃ ⁻
iodate	IO ₃ ⁻	thiocyanate	SCN ⁻

PHYSICS FORMULAE

Average Speed: $v_{av} = \frac{\Delta d}{\Delta t}$

Average Velocity: $\vec{v}_{av} = \frac{\Delta \vec{d}}{\Delta t}$

Average Acceleration: $\vec{a}_{av} = \frac{\vec{v}_2 - \vec{v}_1}{\Delta t}$

Braking Distance: $d = kv^2$