

NORMAL and MOLAR SOLUTIONS DATA SHEET

A normal solution of a solute contains 1g-equivalent of solute per litre of solution. A molar solution contains 1g-molecule of solute per litre of solution.

Substance	Density of usual concentrated solution	% purity	Volume required to make 1 litre of molar solution
Acetic Acid	1.05	99.5	58cm ³
Ammonia	0.880	35	55cm ³
Hydrochloric acid	1.18	36	86cm ³
Hydrofluoric acid	1.13	40	44cm ³
Nitric acid	1.42	70	63cm ³
Perchloric acid	1.54	60	109cm ³
Phosphoric acid (ortho)	1.75	90	63cm ³
Sulphuric acid	1.84	98	54cm ³
Hydrogen peroxide (20 vol)		6	560cm ³

SOLIDS

The details relate to Analytical Reagent standard materials where possible, and primary standards are marked P. (Z signifies sparingly soluble)

Substance	Formula	Mass in g req'd to make 1 litre of Molar solution	
Ammonium Ceric Nitrate	(NH ₄) ₂ [Ce(NO ₃) ₆]		Z
Ammonium Ferrous Sulphate	(NH ₄) ₂ SO ₄ FeSO ₄ 6H ₂ O		
Ammonium Persulphate	(NH ₄) ₂ S ₂ O ₈		Z
Ammonium Thiocyanate	NH ₄ CNS		
Arsenious Oxide	As ₂ O ₃	197.82	PZ
Barium Hydroxide	Ba(OH) ₂ .8H ₂ O	315.50	Z
Borax	Na ₂ B ₄ O ₇ .10H ₂ O	381.42	P
Chromium Trioxide	CrO ₃	100.01	
Citric Acid	H ₃ C ₆ H ₅ O ₇ .H ₂ O	210.15	
Copper Sulphate	CuSO ₄ 5H ₂ O		
Iodine	I ₂		P
Oxalic Acid	(COOH) ₂ .2H ₂ O	126.07	
Potassium Bromate	KBrO ₃	167.02	P
Potassium Chloride	KCl		P
Potassium Dichromate	K ₂ Cr ₂ O ₇	294.22	P
Potassium Hydrogenphthalate	COOH.C ₆ H ₄ COOK		P
Potassium Hydroxide	KOH		
Potassium Iodate	KIO ₃	214.01	P
Potassium Permanganate	KMnO ₄	158.04	
Potassium Tetroxalate	KH ₃ (C ₂ O ₄) ₂ 2H ₂ O	(as acid) (as reducer)	
Sequestic Acid, disodium salt. EDTA	H ₂ Na ₂ C ₁₀ H ₁₂ O ₈ 2H ₂ O	372.25	Z
Silver Nitrate	AgNO ₃		
Sodium Carbonate (anhydrous)	Na ₂ CO ₃	105.99	P
Sodium Chloride	NaCl		P
Sodium Bicarbonate	NaHCO ₃		
Sodium Hydroxide	NaOH		
Sodium Oxalate	(COONa) ₂	133.99	P