



FILMTEC Membranes

Addendum: Conversion of Concentration Units of Ionic Species

Conversion of
Concentration
Units

The following table gives conversion factors for the conversion of concentration units of ionic species given as gram of the ion per liter (g/l) into equivalent per liter (eq/l) or of gram of CaCO₃ equivalents per liter (g CaCO₃/l).

Table 9.5 Conversion factors for the conversion of concentration units of ionic species

Compound	Formula	Ionic weight	Equivalent weight	Conversion to g CaCO ₃ /l eq/l	
Positive ions					
Aluminium	Al ⁺⁺⁺	27.0	9.0	5.56	0.111
Ammonium	NH ₄ ⁺	18.0	18.0	2.78	0.0556
Barium	Ba ⁺⁺	137.4	68.7	0.73	0.0146
Calcium	Ca ⁺⁺	40.1	20.0	2.50	0.0500
Copper	Cu ⁺⁺	63.6	31.8	1.57	0.0314
Hydrogen	H ⁺	1.0	1.0	50.0	1.000
Ferrous iron	Fe ⁺⁺	55.8	27.9	1.79	0.0358
Ferric iron	Fe ⁺⁺⁺	55.8	18.6	2.69	0.0538
Magnesium	Mg ⁺⁺	24.3	12.2	4.10	0.0820
Manganese	Mn ⁺⁺	54.9	27.5	1.82	0.0364
Potassium	K ⁺	39.1	39.1	1.28	0.0256
Sodium	Na ⁺	23.0	23.0	2.18	0.0435
Negative ions					
Bicarbonate	HCO ₃ ⁻	61.0	61.0	0.82	0.0164
Carbonate	CO ₃ ⁻⁻	60.0	30.0	1.67	0.0333
Chloride	Cl ⁻	35.5	35.5	1.41	0.0282
Fluoride	F ⁻	19.0	19.0	2.63	0.0526
Iodide	I ⁻	126.9	126.9	0.39	0.0079
Hydroxide	OH ⁻	17.0	17.0	2.94	0.0588
Nitrate	NO ₃ ⁻	62.0	62.0	0.81	0.0161
Phosphate (tri-basic)	PO ₄ ⁻⁻⁻	95.0	31.7	1.58	0.0315
Phosphate (di-basic)	HPO ₄ ⁻	96.0	48.0	1.04	0.0208
Phosphate (mono-basic)	H ₂ PO ₄ ⁻	97.0	97.0	0.52	0.0103
Sulfate	SO ₄ ⁻	96.1	48.0	1.04	0.0208
Bisulfate	HSO ₄ ⁻	97.1	97.1	0.52	0.0103
Sulfite	SO ₃ ⁻	80.1	40.0	1.25	0.0250
Bisulfite	HSO ₃ ⁻	81.1	81.1	0.62	0.0123
Sulfide	S ⁻	32.1	16.0	3.13	0.0625
Neutral¹					
Carbon dioxide	CO ₂	44.0	44.0	1.14	0.0227
Silica	SiO ₂	60.0	60.0	0.83	0.0167
Ammonia	NH ₃	17.0	17.0	2.94	0.0588

¹ Calculations based on conversion to monovalent species

FILMTEC™ Membranes
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