SEASTAR CHEMICALS INC
A member of the AXYS Group

10005 McDonald Park Road, P.O. Box 2219, Sidney, BC Canada V8L 3S8
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Seastar Chemicals Inc.: Table of Product Properties**

Product (solute)	Weight Percent (weight solute/weight solution x100%)	Boiling Point (°C)	Density at 25°C (g/mL)	Molarity M (mol/L)	Normality N (mol/L)	Molality m (mol/kg)
Nitric Acid	69%	121 (67.4%) [3] 120.5 (68%) [2]	1.41 (68%) [2]	15.6 [5]	15.6 [5]	
Perchloric Acid	70 – 72%	203 (72.5%) [2, 3]	1.67 (70%) @20 ^{0}C [2]	11.6	11.6	
Sulfuric Acid	95 – 98%	279 (93%) [2] 327 (98%) [2]	1.835 (93%) 1.844 (98%) @15^{0}C [2]	18 (98%) [5]	36 (98%) [5]	
Hydrochloric Acid (32%)	32 – 36%	84 (32%) [3] 71 (34%) [3] 61 (36%) [3]	1.1594 (32%) [1] 1.1693 (34%) [1] 1.1791 (36%) [1]	10.175 (32%) [1] 10.904 (34%) [1] 11.642 (36%) [1]	10.175 (32%) [1] 10.904 (34%) [1] 11.642 (36%) [1]	12.907 (32%) [1] 14.129 (34%) [1] 15.427 (36%) [1]
Hydrofluoric Acid	48 – 51%	111.35 (35.6%) [3] 108 (48%) [2]	1.18 (50%) @20 ^{0}C [2]	29 [5]	29 [5]	
Acetic Acid, Glacial	99 – 100%	117.9 Glacial [2]	1.05 @20 ^{0}C (100%)	17.5 [5]	17.5 [5]	
Ammonia Solution (Ammonium Hydroxide)	20 - 22% (as NH_3)		0.92	11.4	11.4	
Hydrobromic Acid	47 - 49		1.5 [5]	9.0 [5]	9.0 [5]	
Hydrogen Peroxide	30%	108 (35%) [4]	1.13 (35%) [4]	9.770 (30%) [4]	9.770 (30%) [4]	12.599 (30%) [4]
Water	100%	100	1.00	55.5	55.5	55.5

NOTE: THIS TABLE REFLECTS PUBLISHED LITERATURE. The assay ranges above are not SEASTAR's products assay ranges but that of published literature.

** Part of our improvement process involves our literature. SEASTAR is always looking for resources of reliable and reputable data. We would gladly accept new physical data for our products as a service to our customers and to prevent transferring erroneous information. **Please note:** if you require an accurate molarity, density or boiling point for the product which you have purchased you will have to do the measurement. Bottles within a given lot have small assay variations.

1 *CRC Press Handbook of CHEMISTRY and PHYSICS on CD-ROM Version 2003*

2 *Canadian Centre for Occupational Health and Safety (CCOHS). http://www.ccohs.ca, CHEMINFO data source.*

3 *Wikipedia, the free encyclopedia, http://en.wikipedia.org/wiki/Hydrochloric_acid, The reference temperature and pressure for the above table are 20°C and 1 atmosphere (101 kPa).*

4 *US Peroxide, http://www.h2o2.com/intro/properties/physical.html#2*

5 *Physical and Theoretical Chemistry Laboratory at Oxford University, http://ptcl.chem.ox.ac.uk/MSDS/acidsbases.html*

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Product	Molecular Formula	Molar Mass (g)	CAS / EINECS	Azeotrope with water (w/w % - B.P. ^{0}C)
Nitric Acid	HNO_3	63.0128	7697-37-2 / 231-714-2	67.4% - 121 ^{0}C positive azeotrope
Perchloric Acid	$HClO_4$	100.4585	7601-90-3 / 231-512-4	72.5% - 203 ^{0}C negative azeotrope
Sulphuric Acid (Sulfuric Acid)	H_2SO_4	98.0734	7664-93-9 / 231-639-5	98.3% - 330 ^{0}C positive azeotrope
Hydrochloric Acid	HCl	36.4609	7647-01-0 / 231-595-7	20.2% - 108.6 ^{0}C
Hydrofluoric Acid	HF	20.0063	7664-39-3 / 231-634-8	35.6% - 111.35 negative azeotrope
Acetic Acid	CH_3COOH	60.0524	64-19-7 / 200-580-7	
Ammonia Solution (Ammonium Hydroxide)	NH_3 (aq) (NH_4OH)	17.0304 (35.0456)	7664-41-7 (1336-21-6) / 215-647-6	
Hydrobromic Acid	HBr	80.9119	10035-10-6 / 233-113-0	
Hydrogen Peroxide	H_2O_2	34.0146	7722-84-1 /	
Water	H_2O	18.0152	7732-18-5 / 231-791-2	