

CERTIFICATE OF ANALYSIS

BASELINE[®] Hydrobromic Acid

1A

PRODUCT NUMBER: S020801

LOT NUMBER: 8217010

ASSAY (HBr, w/w): 48%

	Most elements are determined by magnetic sector ICP-MS using sample pre-concentration. The results are an average of three aliquots subsampled from three samples representative of the lot. The samples are slowly evaporated to dryness, the resulting residue is reconstituted in a small volume of 2% SEASTAR [™] BASELINE [®] Nitric Acid. For volatile elements (indicated by *), the acid samples are diluted then directly injected into the ICP-MS. Values below 3 times the standard deviation of the blank are shown with "<", no blank value is subtracted.																																	
	3A 4A 5A 6A 7A																																	
	3	Li	4	Be											5	B																		
	< 0.02		< 0.1												< 1000																			
	11	Na	12	Mg											13	Al																		
	< 10		< 1												< 5																			
					3B		4B		5B		6B		7B		8		1B		2B															
	19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga								
	< 1		< 20		< 0.01		< 0.2		< 0.01		< 0.5		< 0.2		< 10		< 0.02		< 5		< 0.5		< 1		< 0.01									
	37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo			44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te		
	< 0.01		< 0.1		< 0.01		< 0.02		< 0.05		< 5			< 0.01		< 0.01		< 1		< 0.05		< 0.5		< 0.5		< 0.01		< 2		< 1		< 0.02		
	55	Cs	56	Ba	57	La	72	Hf	73	Ta	74	W	75	Re			78	Pt	79	Au			81	Tl	82	Pb	83	Bi						
	< 0.01		< 0.05		< 0.01		< 0.01		< 1		< 0.1		< 0.02			< 1		< 1				< 0.01		< 1		< 0.05								

ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT)

KEY

(1)	Atomic Number
(2)	Elemental Symbol
(3)	Concentration (mean in ppt)
(4)	1 Standard Deviation (N=3)

	58	Ce	59	Pr	60	Nd			62	Sm	63	Eu	64	Gd	65	Tb	66	Dy	67	Ho	68	Er	69	Tm	70	Yb	71	Lu	
	< 0.01		< 0.01		< 0.01				< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01		< 0.01
	90	Th			92	U																							
	< 0.01				< 0.01																								

HBr (44 - 49%): Properties
 Molar Mass: 80.91g/mol
 Density: 1.5 g/ml
 Molarity: 9 moles/litre
 Normality: 9 moles/litre

Release Date: August 10, 2017
Expiry Date: August 10, 2020



Greg Henson

Greg Henson
QA & RA Manager





SEASTAR™'s Product Integrity Guidelines:

We have found our products, unopened and sealed, maintain the certified integrity, or product quality, for their stated certification period under the following conditions:

- Store at room temperature, maximum range 15°C (59°F) to 25°C (77°F).
- Avoid exposure to sunlight or ultraviolet light sources.
- Open in a 'particle free' environment. SEASTAR recommends a HEPA or ULPA particle filtered trace metal clean room. Open product should be handled under Class 100 or ISO 5 clean room or better conditions.

Once opened, product integrity will depend on proper handling and exposure to contaminants. To reduce trace metal contamination, the inner pack of plastic bags and bottle should be opened under Class 100 or ISO 5 clean room or better conditions to maintain the integrity of the product. The use of plastic gloves, hair net and a clean room suit is also advised.

Safety Guidelines:

PRIOR to opening or storing this product be sure to consult the Safety Data Sheet (SDS) to ensure safe storage and handling with regards to this hazardous material. This information must be read and understood prior to use or storage.

SAFETY HANDLING NOTES: Consult the SDS PRIOR to handling this product. Use proper safety apparel according to the recommendations of the SDS. Exposure controls and personal protection should include: a properly functioning fume hood, protection for eyes (safety glasses), hands (chemically compatible gloves), feet (chemically compatible boots), and exposed skin (splash protection and a chemically compatible apron). All of these items must conform to local/regional/national regulatory requirements.

A handwritten signature in black ink, appearing to read "Greg Henson".

Greg Henson
QA & RA Manager

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