BASELINE® Hydrofluoric Acid

1	PRODU	CT NUN	MBER: S	S020502	2 L	OT NU	MBER:	520901	0		ASSAY	(HF, w/v	v): 48%	0	[
2A Li Be																
< 1	below 3 ti 3B	mes the sta 4B	ndard devia	tion of the b	ank are sho	wn with '<',	no blank val	lue is subtra	cted. 1B	2B	13 AI < 10					
20 Ca < 10	21 Sc < 1	22 Ti < 5	23 V < 0.5	24 Cr < 1	25 Mn < 1	26 Fe < 5	27 Co < 1	28 Ni < 5	29 Cu < 1	30 Zn < 2	31 Ga < 0.5	32 Ge < 1	33 As < 10	34 Se < 50		
38 Sr < 1	39 Y < 0.1	40 Zr < 0.5	41 Nb < 1	42 Mo < 1		44 Ru < 1	45 Rh < 1	46 Pd < 10	47 Ag < 0.5	48 Cd < 0.1	49 In < 0.1	50 Sn < 5	51 Sb < 10	52 Te < 0.5		-
56 Ba < 1	57 La < 0.05	72 Hf < 0.05	73 Ta < 20	74 W < 1	75 Re < 0.1			78 Pt < 5	79 Au < 1	80 Hg < 50	81 TI < 0.05	82 Pb < 1	83 Bi < 0.05			
	2A 4 Be < 1 12 Mg < 1 20 Ca < 10 38 Sr < 1 5 56 Ba	2A Most eler average evaporate Nitric Acid For volati below 3 ti 3B 20 Ca 21 Sc < 10 < 1 38 Sr 39 Y < 0.1 5 56 Ba 57 La	2A 4 Be average of three alice evaporated to drynes Nitric Acid / 2% Hydro For volatile elements below 3 times the state 3B 4 20 Ca 21 Sc 22 Ti < 10 < 1 < 5 38 Sr 39 Y 40 Zr < 1 < 0.1 < 0.5	Most elements are determined average of three aliquots subsate vaporated to dryness. The resundant Acid / 2% Hydrogen Perox For volatile elements (indicated below 3 times the standard deviated below 3 times the	Most elements are determined by high resonance of three aliquots subsampled from evaporated to dryness. The resulting residur Nitric Acid / 2% Hydrogen Peroxide. Operating For volatile elements (indicated by *), the action below 3 times the standard deviation of the blow 3 times the	Most elements are determined by high resolution ICP- average of three aliquots subsampled from three sam evaporated to dryness. The resulting residue is reconsti Nitric Acid / 2% Hydrogen Peroxide. Operations are con- For volatile elements (indicated by *), the acid samples a below 3 times the standard deviation of the blank are sho 3B 4B 5B 6B 7B 20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn < 10 < 1 < 5 < 0.5 < 1 < 1 38 Sr 39 Y 40 Zr 41 Nb 42 Mo < 1 < 0.1 < 0.5 < 1 < 1 36 56 Ba 57 La 72 Hf 73 Ta 74 W 75 Re	A Be average of three aliquots subsampled from three samples represe evaporated to dryness. The resulting residue is reconstituted in a substance of three elements (indicated by *), the acid samples are diluted to below 3 times the standard deviation of the blank are shown with '<', 3B 4B 5B 6B 7B A 20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn 26 Fe < 10 < 1 < 5 < 0.5 < 1 < 1 < 5 < 5 < 0.5 < 1 < 1 < 1 < 5 < 5 < 5 < 5 < 5 < 5 <	Most elements are determined by high resolution ICP-MS using sample pred average of three aliquots subsampled from three samples representative of evaporated to dryness. The resulting residue is reconstituted in a small volume Nitric Acid / 2% Hydrogen Peroxide. Operations are conducted under Class 100 For volatile elements (indicated by *), the acid samples are diluted then directly below 3 times the standard deviation of the blank are shown with '<', no blank value 3B 4B 5B 6B 7B 8 20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn 26 Fe 27 Co < 10 < 1 < 5 < 0.5 < 1 < 1 < 5 < 1 38 Sr 39 Y 40 Zr 41 Nb 42 Mo 44 Ru 45 Rh < 1 < 0.1 < 0.5 < 1 < 1 < 1 56 Ba 57 La 72 Hf 73 Ta 74 W 75 Re	Most elements are determined by high resolution ICP-MS using sample preconcentration average of three aliquots subsampled from three samples representative of the lot. The evaporated to dryness. The resulting residue is reconstituted in a small volume of SEASTA Nitric Acid / 2% Hydrogen Peroxide. Operations are conducted under Class 100 or better class 12 Mg For volatile elements (indicated by *), the acid samples are diluted then directly injected into below 3 times the standard deviation of the blank are shown with '<', no blank value is subtracted and a substantial standard deviation of the blank are shown with '<', no blank value is subtracted and a substantial substantialy substantial substantial substantial substantial substantial sub	A Be average of three aliquots subsampled from three samples representative of the lot. The samples average of three aliquots subsampled from three samples representative of the lot. The samples average of three aliquots subsampled from three samples representative of the lot. The samples average of three aliquots subsampled from three samples representative of the lot. The samples average of three aliquots subsampled from three samples representative of the lot. 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Values below 3 times the standard deviation of the blank are shown with '<', no blank value is subtracted. 3B 4B 5B 6B 7B 8 1B 2B 420 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn 26 Fe 27 Co 28 Ni 29 Cu 30 Zn < 10 < 1 < 5 < 0.5 < 1 < 1 < 5 < 1 < 2 < 2 < 1 < 5 < 1 < 5 < 0.5 < 1 < 1 < 5 < 0.5 < 1 < 1 < 5 < 0.1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 <	A Be 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 SEASTAR™ BASELINE® 2% Nitric Acid / 2% Hydrogen Peroxide. Operations are conducted under Class 100 or better clean-room conditions. For volatile elements (indicated by *), the acid samples are diluted then directly injected into the ICP-MS. 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ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT)

KEY (3) (4)

(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
< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
90 Th		92 U										
< 0.05		< 0.01										



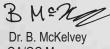
HF (47 - 51%): Properties Molar Mass: 20.01g/mol Density: 1.18 g/ml Molarity: 29 moles/litre

Normality: 29 moles/litre

Maximum Actual Analyte Specification Value (in ppb) Total Sulphur (S) 100 ppb < 50

Release Date: **Expiry Date:** July 16, 2009

July 16, 2012



Product Integrity:

Based on extensive testing results, SEASTAR CHEMICALS INC have found our products, unopened and sealed, maintain the certified integrity, or product quality, for a minimum of three years under the following conditions:

- Stored at room temperature, maximum range 15°C (59°F) to 25°C (77°F).
- Minimum exposure to light.
- For limited time, storage/transport temperature range 5°C (41°F) to 35°C (95°F)

Upon opening the product, the product's integrity will depend on proper handling and exposure to contaminants. The product has been bottled under CLASS 100 clean room conditions, to maintain the certified quality it should be used under these conditions. Furthermore to reduce trace metal contamination, the inner pack of plastic bags and bottle should be opened under CLASS 100 particle conditions to maintain the integrity of the product. The use of plastic gloves, hair net and a clean room suit is also advised.

Safety:

PRIOR to opening or storing this product be sure to consult the Material Safety Data Sheet (MSDS) Section 7 Handling and Storage to ensure safe storage and handling with regards to this hazardous material. This information must be understood prior to its use or storage.

SAFETY HANDLING NOTES: Consult your MSDS, PRIOR to handling these materials. Use proper safety apparel according to the recommendations of the MSDS. 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.

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Dr. B. McKelvey QA/QC Manager

10005 McDonald Park Road, Sidney, BC, Canada V8L 5Y2

phone: (250) 655-5880 fax: (250) 655-5888

toll free: 1 (800) 663-2330 (within Canada & U.S. only) Email: seastar.technicals.upport@seastarchemicals.com