## CERTIFICATE OF ANALYSIS

## **BASELINE®** Hydrochloric Acid

PRODUCT NUMBER: BA-04 LOT NUMBER: 4206010 ASSAY (HCI, w/w): 33%																
2A 4 Be <5	average of evaporate Nitric Acid	of three alied to drynes d. Operatio	quots subsass, the resul	ampled fror Iting residue Iducted und	n three sam is reconstituder Class 10	nples repres uted in a sm 00 particle	sentative of all volume of or better cle	the lot. The f2% SEAS an-room co	e samples a FAR <sup>™</sup> <b>BA⊆</b> onditions. F	are slowly <b>SELINE</b> ®  or volatile	3A 5 B <10	4A	5A	6A	7A	
<b>12 Mg</b> <5									P-MS. Value	es below 3 2B	<b>13 AI</b> <10					
<b>20 Ca</b> <10	21 Sc <1	<b>22</b> Ti <10	23 V <1	<b>24</b> Cr <10	25 Mn <2	<b>26 Fe</b> <10	27 Co <3	28 Ni <10	29 Cu <3	<b>30 Zn</b> <5	31 Ga <1		<b>33 As</b> <20	<b>34 Se</b> <50		
38 Sr <1	<b>39 Y</b> <0.1	40 Zr <1	41 Nb <1	<b>42 Mo</b> <5		<b>44 Ru</b> <10	45 Rh <1	<b>46</b> Pd <10	<b>47 Ag</b> <5	48 Cd <0.1	<b>49 In</b> <0.1	<b>50 Sn</b> <10	<b>51 Sb</b> <20	<b>52</b> Te <1		-
56 Ba <1	<b>57</b> La <0.05	<b>72</b> Hf <0.05	<b>73 Ta</b> <20	<b>74 W</b> <5	<b>75 Re</b> <0.1			78 Pt <1	<b>79 Au</b> <10	<b>80</b> Hg	<b>81 TI</b> <0.1	82 Pb <1	<b>83</b> Bi <0.05			
	2A 4 Be <5 12 Mg <5 20 Ca <10 38 Sr <1 56 Ba	2A  4 Be average of evaporate Nitric Aci elements times the 3B  20 Ca 21 Sc <10 <1  38 Sr 39 Y <0.1  56 Ba 57 La	A Be average of three ali evaporated to dryner Nitric Acid. Operation elements (indicated times the standard dryner) and the standard dryner of the standard dry	Most elements are determined average of three aliquots subsevaporated to dryness, the result Nitric Acid. Operations are correlements (indicated by *), the attimes the standard deviation of the SB 20 Ca 21 Sc 22 Ti 23 V <10 <1 Sc 22 Ti 23 V <10 <1 Sc 22 Ti 23 V <10 <1 Sc 22 Ti 23 V <10 Sc 21 Sc 22 Ti 23 V <10 Sc 21 Sc 21 Sc Sc 21 Sc Sc 21 Sc	Most elements are determined by magnetic average of three aliquots subsampled from evaporated to dryness, the resulting residue Nitric Acid. Operations are conducted und elements (indicated by *), the acid samples times the standard deviation of the blank are 3B 4B 5B 6B  20 Ca 21 Sc 22 Ti 23 V 24 Cr <10 <1 <10 <1 <10 <1 <10 <1 <10 <1 <10 <1 <10 <10	Most elements are determined by magnetic sector ICP average of three aliquots subsampled from three same evaporated to dryness, the resulting residue is reconstitus. Nitric Acid. Operations are conducted under Class 10 elements (indicated by *), the acid samples are diluted times the standard deviation of the blank are shown with 3B 4B 5B 6B 7B  20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn < 10 < 1 < 10 < 1 < 10 < 2  38 Sr 39 Y 40 Zr 41 Nb 42 Mo < 10 < 1 < 10 < 5  56 Ba 57 La 72 Hf 73 Ta 74 W 75 Re	Most elements are determined by magnetic sector ICP-MS using saverage of three aliquots subsampled from three samples represented to dryness, the resulting residue is reconstituted in a smooth Nitric Acid. Operations are conducted under Class 100 particles elements (indicated by *), the acid samples are diluted then direct times the standard deviation of the blank are shown with "<", no blank as a shown with "<", no blank	Most elements are determined by magnetic sector 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 of Nitric Acid. Operations are conducted under Class 100 particle or better clear elements (indicated by *), the acid samples are diluted then directly injected times the standard deviation of the blank are shown with "<", no blank value is suggested as a second se	Most elements are determined by magnetic sector ICP-MS using sample preconcentratic 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 2% SEAS Nitric Acid. Operations are conducted under Class 100 particle or better clean-room concentration elements (indicated by *), the acid samples are diluted then directly injected into the ICP times the standard deviation of the blank are shown with "<", no blank value is subtracted.  3B 4B 5B 6B 7B 8  20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn 26 Fe 27 Co 28 Ni < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	Most elements are determined by magnetic sector ICP-MS using sample preconcentration. The resultable 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. 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. 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 average of three aliquots subsampled from three samples representative of the lot. The samples average of three aliquots average of three samples representative of the lot. The samples average of three aliquots average of three aliquots average of three aliquots average of three aliquots average of three samples average of three samples average of the lot. The samples average of three aliquots average of the lot. The samples average of the lot. The samples average of the lot. The samples average of the lot. The s	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 2% SEASTAR™ BAS€LIN€° Nitric Acid. Operations are conducted under Class 100 particle or better clean-room conditions. 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.  3B 4B 5B 6B 7B 8 1B 2B  20 Ca 21 Sc 22 Ti 23 V 24 Cr 25 Mn 26 Fe 27 Co 28 Ni 29 Cu 30 Zn <10 <1 <10 <1 <10 <3 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	A Be 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. Operations are conducted under Class 100 particle or better clean-room conditions. 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.  38	A Most elements are determined by magnetic sector ICP-MS using sample preconcentration. The results are an average of three aliquots subsampled from three samples representative of the lot. 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## ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT)

(1) (2) (3) (4)

(1) Atomic Number

(2) Elemental Symbol (3) Concentration (mean

in ppt)

(4) 1 Standard Deviation (N=3)

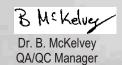
58 Ce	59 Pr	60 Nd	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01	<0.01	<0.01	<0.01
1.0												
90 Th		92 U										
<0.05		<0.01										

Release Date: Expiry Date:

February 21, 2006

February 21, 2009







## **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.

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.

A further note 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.

Appropriate safety precautions must be taken as well as wearing the required safety apparel. A properly functioning fumehood, protection for eyes, hands, feet and exposed skin must also be worn. All of these items must conform to local/regional/national regulatory requirements.

Dr. B. McKelvey QA/QC Manager

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