CERTIFICATE OF ANALYSIS

BASELINE® Nitric Acid

PRODUCT NUMBER: S020101   **LOT NUMBER: 1217042**   **ASSAY (HNO$_3$, w/w): 68%**

Most elements are determined by high resolution ICP-MS using sample preconcentration. 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 SEASTAR™ BASELINE® 2% Nitric Acid / 2% Hydrogen Peroxide. 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.

1A	2A												3A	4A	5A	6A	7A
													5 B < 10				
3 Li < 0.02	**4 Be** < 0.01																
11 Na < 0.5	**12 Mg** < 0.5	3B	4B	5B	6B	7B		8		1B	2B		**13 Al** < 2				
19 K < 1	**20 Ca** < 10	**21 Sc** < 0.01	**22 Ti** < 0.5	**23 V** < 0.01	**24 Cr** < 1	**25 Mn** < 0.1	**26 Fe** < 5	**27 Co** < 0.1	**28 Ni** < 5	**29 Cu** < 0.5	**30 Zn** < 1		**31 Ga** < 0.1	**32 Ge** < 0.02	**33 As** < 1	**34 Se** < 10	
37 Rb < 0.01	**38 Sr** < 0.05	**39 Y** < 0.01	**40 Zr** < 0.05	**41 Nb** < 0.05	**42 Mo** < 0.2		**44 Ru** < 0.05	**45 Rh** < 0.01	**46 Pd** < 1	**47 Ag** < 0.1	**48 Cd** < 0.01		**49 In** < 0.05	**50 Sn** < 0.2	**51 Sb** < 0.01	**52 Te** < 0.02	
55 Cs < 0.01	**56 Ba** < 0.05	**57 La** < 0.01	**72 Hf** < 0.01	**73 Ta** < 0.01	**74 W** < 0.05	**75 Re** < 0.05		**78 Pt** < 1	**79 Au** < 1	**80 Hg** < 20	**81 Tl** < 0.2		**82 Pb** < 0.05	**83 Bi** < 0.01			

ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT)

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

KEY

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

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

HNO$_3$ (67 - 70%): Properties
Molar Mass: 63.01g/mol
Density: 1.41 g/ml
Molarity: 16 moles/litre
Normality: 16 moles/litre

Release Date: **April 25, 2017**
Expiry Date: **April 25, 2020**

Greg Henson
QA & RA Manager

BASELINE

SEASTAR CHEMICALS INC

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.

Greg Henson
QA & RA Manager

10005 McDonald Park Road, Sidney, BC, Canada V8L 5Y2
Phone: 1 (250) 655-5880   Fax: 1 (250) 655-5888
Toll free: 1 (800) 663-2330 (within Canada & U.S. only)
Email: seastar.technicalsupport@seastarchemicals.com
Web: www.seastarchemicals.com