Certificate of Analysis

800 Kaderly Dr
Columbus, OH 43228-1034
USA

www.gfschemicals.com

Tel: 800.858.9682 . 740.881.5501
Fax: 740.881.5989

Product name: NITRIC ACID, 69%, VERITAS REDISTILLED

Item #: 63

Lot #: 24000540

Certified Values:

Specifications	Status	Results
Assay 68.0 % - Min	Pass	69.6
Chloride 0.00001 % Max	Pass	<0.00001
Sulfate 0.00001 % Max	Pass	<0.00001
Arsenic 0.0000001 % Max	Pass	<0.0000001
Heavy Metals 0.000001 % Max	Pass	<0.000001
Iron 0.000001 % Max	Pass	<0.000001
Residue after ignition 0.0001 % Max	Pass	<0.0001
Color (APHA) 10 Max	Pass	<10
Al 5.00 ppb Max	Pass	<0.50
Ag 1.00 ppb Max	Pass	<0.50
Au 1.00 ppb Max	Pass	<0.50
B 10.00 ppb Max	Pass	1.15
Ba 2.00 ppb Max	Pass	<0.50
Be 1.00 ppb Max	Pass	<0.50
Bi 1.00 ppb Max	Pass	<0.50
Ca 10.00 ppb Max	Pass	2.14
Cd 1.00 ppb Max	Pass	<0.50
Ce 1.00 ppb Max	Pass	<0.50
Co 1.00 ppb Max	Pass	<0.50
Cr 1.00 ppb Max	Pass	<0.50
Cs 1.00 ppb Max	Pass	<0.50
Cu 2.00 ppb Max	Pass	<0.50
Dy 1.00 ppb Max	Pass	<0.50
Er 1.00 ppb Max	Pass	<0.50

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Eu 1.00 ppb Max	Pass	<0.50
Fe 5.00 ppb Max	Pass	<0.50
Ga 1.00 ppb Max	Pass	<0.50
Gd 1.00 ppb Max	Pass	<0.50
Ge 1.00 ppb Max	Pass	<0.50
Hg 2.00 ppb Max	Pass	<0.50
Ho 1.00 ppb Max	Pass	<0.50
In 1.00 ppb Max	Pass	<0.50
Ir 1.00 ppb Max	Pass	<0.50
K 2.00 ppb Max	Pass	<0.50
La 1.00 ppb Max	Pass	<0.50
Li 1.00 ppb Max	Pass	<0.50
Lu 1.00 ppb Max	Pass	<0.50
Mg 2.00 ppb Max	Pass	<0.50
Mn 1.00 ppb Max	Pass	<0.50
Mo 1.00 ppb Max	Pass	<0.50
Na 10.00 ppb Max	Pass	2.66
Nd 1.00 ppb Max	Pass	<0.50
Ni 1.00 ppb Max	Pass	<0.50
Os 1.00 ppb Max	Pass	<0.50
Pb 1.00 ppb Max	Pass	<0.50
Pd 1.00 ppb Max	Pass	<0.50
Pr 1.00 ppb Max	Pass	<0.50
Pt 1.00 ppb Max	Pass	<0.50
Rb 1.00 ppb Max	Pass	<0.50
Rh 1.00 ppb Max	Pass	<0.50
Ru 1.00 ppb Max	Pass	<0.50
Sb 1.00 ppb Max	Pass	<0.50
Sc 1.00 ppb Max	Pass	<0.50

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Se 1.00 ppb Max	Pass	<0.50
Sm 1.00 ppb Max	Pass	<0.50
Sn 1.00 ppb Max	Pass	<0.50
Sr 1.00 ppb Max	Pass	<0.50
Tb 1.00 ppb Max	Pass	<0.50
Te 1.00 ppb Max	Pass	<0.50
Th 1.00 ppb Max	Pass	<0.50
Ti 1.00 ppb Max	Pass	<0.50
U 1.00 ppb Max	Pass	<0.50
V 1.00 ppb Max	Pass	<0.50
W 1.00 ppb Max	Pass	<0.50
Y 1.00 ppb Max	Pass	<0.50
Yb 1.00 ppb Max	Pass	<0.50
Zn 5.00 ppb Max	Pass	<0.50
Zr 1.00 ppb Max	Pass	<0.50

Comments

CoA #: COA-097913
Certificate Created By: Karen Hirsch
CoA Creation Date: April 3, 2023
Certified by: Aron Becza - Quality Assurance Manager

Aron Becza

Best by: March 6, 2028
Print Date: May 1, 2023

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Traceability:

This material was processed under a quality management system that is registered to ISO 9001:2015. The equipment used in the testing of material is NIST traceable. In cases where NIST traceability is not possible, equipment manufacturer recommendations and/or industry best practices are followed.

The following tests are performed under an A2LA accredited ISO/IEC 17025 management system:

- UV/VIS Spectrophotometer testing is performed according to ASTM method E169-16
- Turbidity according to ASTM methods D6855-17 and ASTM D7315-17
- Conductivity according to ASTM method D1125-14
- pH according to ASTM method D1293-18
- Karl Fischer titration according to ASTM methods DE203-16 and E1064-16

Samples for testing are obtained using GFS procedure GFSW-LAB-PPG-0022.

Testing is performed in a laboratory temperature of 22 ℃ +/- 2 ℃ and/or a solution temperature of 25 ℃ +/- 0.2 ℃.

Karl Fischer testing is performed at a laboratory temperature of 25 ℃ +/- 5 ℃ and a relative humidity of less than or equal to 60%.

Measurement Uncertainty:

The reported measurement uncertainty is an expanded measurement uncertainly according to the ASM method E2554-18, calculated using 2 as the coverage factor (which gives a confidence level of approximately 95%).

-Example for a reported conductivity value of 2124 uS/cm:
2124uS/cm ± 0.65%, k=2

-Example for a reported pH value of 8.32:
8.32 ± 0.01, K=2

-Karl Fischer for values between 0.1 to 10 mg/g
- o Example for a reported Karl Fischer value of 5.3 mg/g:
5.3mg/g ± 3.76%, k=2