# SEASTAR CHEMICALS

# Certificate of Analysis

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|---|---|---|---|
| **Product Number:** | **S020101** | **CAS Number:** | 7697-37-2 |
| **Product Description:** | Nitric Acid | **Molecular Weight:** | 63.01 g/mol |
| **Product Grade:** | BASELINE® | **Molecular Formula:** | $HNO_3$ |
| **Lot Number:** | 1226051 | **Density:** | 1.41 g/mL |
| **Release Date:** | 07/22/2026 (mm/dd/yyyy) | **Molarity:** | 16 moles/litre |
| **Expiration Date:** | 07/22/2029 (mm/dd/yyyy) | **Normality:** | 16 moles/litre |

## Analytical Data

| Analyte | Specification | Actual Value | Analyte | Specification | Actual Value |
|---|---|---|---|---|---|
| Assay ($HNO_3$) | 67 - 69% w/w | 68% w/w | Molybdenum (Mo) | 10 ppt | < 0.1 ppt |
| Aluminum (Al) | 20 ppt | < 2 ppt | Neodymium (Nd) | 1 ppt | < 0.02 ppt |
| Antimony (Sb) | 10 ppt | < 0.05 ppt | Nickel (Ni) | 20 ppt | < 5 ppt |
| Arsenic (As) | 20 ppt | < 0.5 ppt | Niobium (Nb) | 1 ppt | < 0.1 ppt |
| Barium (Ba) | 10 ppt | < 0.1 ppt | Palladium (Pd) | 20 ppt | < 0.5 ppt |
| Beryllium (Be) | 10 ppt | < 0.05 ppt | Platinum (Pt) | 20 ppt | < 0.5 ppt |
| Bismuth (Bi) | 10 ppt | < 0.01 ppt | Potassium (K) | 10 ppt | < 2 ppt |
| Boron (B) | 10 ppt | < 5 ppt | Praseodymium (Pr) | 1 ppt | < 0.01 ppt |
| Cadmium (Cd) | 10 ppt | < 0.02 ppt | Rhenium (Re) | 10 ppt | < 0.01 ppt |
| Calcium (Ca) | 10 ppt | < 10 ppt | Rhodium (Rh) | 10 ppt | < 0.01 ppt |
| Cerium (Ce) | 10 ppt | < 0.05 ppt | Rubidium (Rb) | 10 ppt | < 0.05 ppt |
| Cesium (Cs) | 10 ppt | < 0.01 ppt | Ruthenium (Ru) | 20 ppt | < 0.1 ppt |
| Chromium (Cr) | 10 ppt | < 0.5 ppt | Samarium (Sm) | 1 ppt | < 0.02 ppt |
| Cobalt (Co) | 10 ppt | < 0.5 ppt | Scandium (Sc) | 10 ppt | < 0.1 ppt |
| Copper (Cu) | 10 ppt | < 1 ppt | Selenium (Se) | Information Only | < 10 ppt |
| Dysprosium (Dy) | 1 ppt | < 0.01 ppt | Silver (Ag) | 10 ppt | < 0.02 ppt |
| Erbium (Er) | 1 ppt | < 0.01 ppt | Sodium (Na) | 10 ppt | < 2 ppt |
| Europium (Eu) | 1 ppt | < 0.01 ppt | Strontium (Sr) | 10 ppt | < 0.02 ppt |
| Gadolinium (Gd) | 1 ppt | < 0.01 ppt | Tantalum (Ta) | Information Only | < 10 ppt |
| Gallium (Ga) | 10 ppt | < 0.05 ppt | Tellurium (Te) | 1 ppt | < 0.02 ppt |
| Germanium (Ge) | 10 ppt | < 0.02 ppt | Terbium (Tb) | 1 ppt | < 0.01 ppt |
| Gold (Au) | 20 ppt | < 2 ppt | Thallium (Tl) | 10 ppt | < 0.01 ppt |
| Hafnium (Hf) | 10 ppt | < 0.01 ppt | Thorium (Th) | 1 ppt | < 0.1 ppt |
| Holmium (Ho) | 1 ppt | < 0.01 ppt | Thulium (Tm) | 1 ppt | < 0.01 ppt |
| Indium (In) | 1 ppt | < 0.01 ppt | Tin (Sn) | 20 ppt | < 0.5 ppt |
| Iron (Fe) | 10 ppt | < 5 ppt | Titanium (Ti) | 10 ppt | < 5 ppt |
| Lanthanum (La) | 1 ppt | < 0.01 ppt | Tungsten (W) | 10 ppt | < 0.2 ppt |
| Lead (Pb) | 10 ppt | < 0.02 ppt | Uranium (U) | 1 ppt | < 0.01 ppt |
| Lithium (Li) | 10 ppt | < 0.02 ppt | Vanadium (V) | 10 ppt | < 0.1 ppt |
| Lutetium (Lu) | 1 ppt | < 0.01 ppt | Ytterbium (Yb) | 1 ppt | < 0.01 ppt |
| Magnesium (Mg) | 10 ppt | < 0.5 ppt | Yttrium (Y) | 1 ppt | < 0.01 ppt |
| Manganese (Mn) | 10 ppt | < 0.2 ppt | Zinc (Zn) | 10 ppt | < 0.5 ppt |
| Mercury (Hg) | 50 ppt | < 10 ppt | Zirconium (Zr) | 10 ppt | < 0.1 ppt |

Greg Henson
QA & RA Manager

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 three times the standard deviation of the blank are shown with '<', no blank value is subtracted.

For terms and conditions of use, please see page 2.

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SEASTAR CHEMICALS

# Terms and Conditions of Use

**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.

**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.

**For SEASTAR™'s Product Expiration Policy and Product Permeation FAQ, please see our website.**

**Notes:**

Reported density, molarity and normality values reflect published literature and are characteristic of the product's assay range. If you require an accurate density, molarity, or normality for the product that you have purchased, you will have to perform the measurement. Bottles within a given lot have small assay variations.

**Definitions:**

- **Actual value:** the measured value in a particular lot analysis.
- **Analyte:** the substance being measured.
- **Specification:** the maximum certified value of an analyte, unless otherwise specified.
- **Unit(s): ppm** – part per million or µg (microgram) of analyte per gram of solution.
  **ppb** – part per billion or ng (nanogram) of analyte per gram of solution.
  **ppt** – part per trillion or pg (picogram) of analyte per gram of solution.

Greg Henson
QA & RA Manager