

Atomic Absorption Standards



Reagecon manufacture an extensive range of aqueous AA Standards. These include standards for the measurement of the most common alkali and transition metals.

There are two types of Atomic Absorption Spectrometry, (AAS). Flame Atomic Absorption Spectrometry, (FAAS) and Graphite Furnace Atomic Absorption Spectrometry (GFAAS).

Flame Atomic Absorption Spectrometry, (FAAS) either an air/acetylene or a nitrous oxide/acetylene flame can be used to evaporate the solvent and dissociate the sample into its component atoms. When light from a hollow cathode lamp (selected based on the element to be determined) passes through the cloud of atoms, the atoms of interest absorb the light from the lamp. This is measured by a detector, and used to calculate the concentration of that element in the original sample. The use of a flame limits the excitation temperature reached by a sample to a maximum of approximately 2600°C (with the Nitrous Oxide / acetylene flame). For many elements this is not a problem. However, there are a number of refractory elements like V, Zr, Mo and B which do not perform well with a flame source. This is because the maximum temperature reached, even with the N₂O/acetylene flame, is insufficient to break down compounds of these elements. As a result, flame AAS sensitivity for these elements is not as good as other elemental analysis techniques.

FAAS is an inexpensive technique that is rapid for a few selected elements however it has poor sensitivity (high detection limits), is limited to single element determination each time and requires a large amount of sample. It has a narrow linear range.

Graphite Furnace Atomic Absorption Spectrometry (GFAAS) - This technique is essentially the same as FAAS, except the flame is replaced by a small, electrically heated graphite tube, or cuvette, which is heated to a temperature up to 3000°C to generate the cloud of atoms. The higher atom density and longer residence time in the tube improve furnace AAS detection limits by a factor of up to 1000x compared to flame AAS, down to the sub-ppb range. However, because of the temperature limitation and the use of graphite cuvettes, refractory element performance is still somewhat limited.

GFAAS is relatively inexpensive and requires small sample volume, it has excellent sensitivity (low detection limits) however it is also limited to single element determination and has a narrow linear range.

Single Element Atomic Absorption Standards

Product No.	Description	Pack Size
AAALH	Aluminium Standard 1000ppm in 0.5M Nitric Acid	500ml
AAALM	Aluminium Standard 10000ppm in 1M Nitric Acid	500ml
AASBH	Antimony Standard 1000ppm in Water	500ml
AASBM	Antimony Standard 10000ppm in Water	500ml
AAASH	Arsenic (III) Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAASM	Arsenic (III) Standard 10000ppm in 1M Hydrochloric Acid	500ml
AAAS05H	Arsenic (V) Standard 1000ppm in 1M Nitric Acid	500ml
AA-GLO-BA-500	Barium Standard 1000ppm Ba, as Barium Nitrate in 0.5M Nitric Acid, (trac. to NIST)	500ml
AABAH	Barium Standard 1000ppm in 0.5M Nitric Acid	500ml

Product No.	Description	Pack Size
AABAM	Barium Standard 10000ppm in 1M Nitric Acid	500ml
AABEH	Beryllium Standard 1000ppm in 1M Hydrochloric Acid	500ml
AABEM	Beryllium Standard 10000ppm in 1M Hydrochloric Acid	500ml
AABIH	Bismuth Standard 1000ppm in 0.5M Nitric Acid	500ml
AABIM	Bismuth Standard 10000ppm in 1M Nitric Acid	500ml
AA-GLO-B-500	Boron Standard 1000ppm B, as Boric Acid in Water, (traceable to NIST)	500ml
AAB-H	Boron Standard 1000ppm in Water	500ml
AAB-M	Boron Standard 10000ppm in Water	500ml
AACDH	Cadmium Standard 1000ppm in 0.5M Nitric Acid	500ml
AACDM	Cadmium Standard 10000ppm in 1M Nitric Acid	500ml
AACAD1	Calcium Standard 1ppm in 2% Nitric Acid	500ml
AACAD2	Calcium Standard 2ppm in 2% Nitric Acid	500ml
AACAD3	Calcium Standard 3ppm in 2% Nitric Acid	500ml
AACAD5	Calcium Standard 5ppm in 2% Nitric Acid	500ml
AACAH10A	Calcium Standard 10ppm in 0.5M Nitric Acid	100ml
AACAH10C	Calcium Standard 10ppm in 0.5M Nitric Acid	500ml
AACA1005	Calcium Standard 100ppm in Nitric Acid	500ml
AACA01	Calcium Standard 1000ppm in 0.5M Nitric Acid	100ml
AACAH	Calcium Standard 1000ppm in 0.5M Nitric Acid	500ml
AACAH1	Calcium Standard 1000ppm in 0.5M Nitric Acid	1L
AACAM	Calcium Standard 10000ppm in 1M Nitric Acid	500ml
AACEH1	Cerium Standard 1000ppm in 2.5% Nitric Acid	100ml
AACEH	Cerium Standard 1000ppm in 2.5% Nitric Acid	500ml
AACSH	Cesium Standard 1000ppm in 1M Nitric Acid	500ml
AACSM	Cesium Standard 10000ppm in 1M Nitric Acid	500ml
AA-BAE-STD12	Chromium Standard 0.1ppm in 2% Nitric Acid	250ml
AA-BAE-STD13	Chromium Standard 0.3ppm in 2% Nitric Acid	250ml
AA-BAE-STD14	Chromium Standard 0.65ppm in 2% Nitric Acid	250ml
AACRH	Chromium Standard 1000ppm in 0.5M Nitric Acid	500ml
AACRM	Chromium Standard 10000ppm in 1M Nitric Acid	500ml
AACOH	Cobalt Standard 1000ppm in 0.5M Nitric Acid	500ml
AACOM	Cobalt Standard 10000ppm in 1M Nitric Acid	500ml
AACUR	Copper Standard 1ppm in 2% Nitric Acid	100ml
AACU2PM100	Copper Standard 2ppm in 2% Nitric Acid	500ml
AACU20PB50	Copper Standard 20ppb in 2% Nitric Acid	50ml
AACUH	Copper Standard 1000ppm in 0.5M Nitric Acid	500ml
AACUH-250ML	Copper Standard 1000ppm in 0.5M Nitric Acid	250ml
AACUM	Copper Standard 10000ppm in 1M Nitric Acid	500ml
AAEUH	Europium Standard 1000ppm in 2% Nitric Acid	500ml
AAGDH	Gadolinium Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAGDM	Gadolinium Standard 10000ppm in 1M Hydrochloric Acid	500ml
AAGAH	Gallium Standard 1000ppm in 1M Hydrochloric Acid	500ml

Product No.	Description	Pack Size
AAGAM	Gallium Standard 10000ppm in 1M Hydrochloric Acid	500ml
AAGEH	Germanium Standard 1000ppm in 1% Hydrofluoric Acid & 5% Nitric Acid	500ml
AAAU10	Gold Standard 10ppm in 5% Hydrochloric Acid	500ml
AAAU5	Gold Standard 1000ppm in 0.5N Hydrochloric Acid	500ml
AAAUH	Gold Standard 1000ppm in 2M Hydrochloric Acid	500ml
AAAUM	Gold Standard 10000ppm in 2M Hydrochloric Acid	500ml
AAINH	Indium Standard 1000ppm in 1M Nitric Acid	500ml
AAINM	Indium Standard 10000ppm in 1M Nitric Acid	500ml
AAIRH	Iridium Standard 1000ppm in 10% Hydrochloric Acid	500ml
AAIRM	Iridium Standard 10000ppm in 10% Hydrochloric Acid	500ml
AAFEN	Iron Standard 1ppm in 2% Nitric Acid	100ml
AAFEH	Iron Standard 1000ppm in 0.5M Nitric Acid	500ml
AAFEH-250ML	Iron Standard 1000ppm in 0.5M Nitric Acid	250ml
AAFEM	Iron Standard 10000ppm in 1M Nitric Acid	500ml
AALAH	Lanthanum Standard 1000ppm in 1M Nitric Acid	500ml
AALAM	Lanthanum Standard 10000ppm in 1M Nitric Acid	500ml
AAPBH-250ML	Lead Standard 1000ppm in 0.5M Nitric Acid	250ml
AAPBH	Lead Standard 1000ppm in 0.5M Nitric Acid	500ml
AAPBM	Lead Standard 10000ppm in 1M Nitric Acid	500ml
AALIH	Lithium Standard 1000ppm in 0.5M Nitric Acid	500ml
AALIM	Lithium Standard 10000ppm in 1M Nitric Acid	500ml
AALUH	Lutetium Standard 1000ppm in 2% Nitric Acid	500ml
AAMGH	Magnesium Standard 1000ppm in 0.5M Nitric Acid	500ml
AAMGM	Magnesium Standard 10000ppm in 1M Nitric Acid	500ml
AAMNE	Manganese Standard 1ppm in 2% Nitric Acid	100ml
AAMNH	Manganese Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAMNH-250ML	Manganese Standard 1000ppm in 1M Hydrochloric Acid	250ml
AAMNH/2HNO3	Manganese Standard 1000ppm in 2% Nitric Acid	100ml
AAMNM	Manganese Standard 10000ppm in 1M Hydrochloric Acid	500ml
AAHG1	Mercury Standard 1ppm in 0.5M Nitric Acid	500ml
AAHG10	Mercury Standard 10ppm in 0.5M Nitric Acid	500ml
AAHG100	Mercury Standard 100ppm in 0.5M Nitric Acid	500ml
AAHGH	Mercury Standard 1000ppm in 0.5M Nitric Acid	500ml
AAHGM	Mercury Standard 10000ppm in 1M Nitric Acid	500ml
AAMOH	Molybdenum Standard 1000ppm in Water	500ml
AAMOM	Molybdenum Standard 10000ppm in Water	500ml
AANI05	Nickel Standard 0.05ppm in 5% Nitric Acid	500ml
AANIH	Nickel Standard 1000ppm in 0.5M Nitric Acid	500ml
AANIM	Nickel Standard 10000ppm in 1M Nitric Acid	500ml
AAPDF	Palladium Standard 10ppm in 10% Hydrochloric Acid	50ml
AAPDH	Palladium Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAPDM	Palladium Standard 10000ppm in 1M Hydrochloric Acid	500ml

Product No.	Description	Pack Size
AAP-H	Phosphorus Standard 1000ppm in Water	500ml
AAP-M	Phosphorus Standard 10000ppm in Water	500ml
AAPTF	Platinum Standard 10ppm in 10% Hydrochloric Acid	50ml
AAPTH	Platinum Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAPTM	Platinum Standard 10000ppm in 1M Hydrochloric Acid	500ml
AAKD1	Potassium Standard 1ppm in 2% Nitric Acid	500ml
AAKD2	Potassium Standard 2ppm in 2% Nitric Acid	500ml
AAKD5	Potassium Standard 5ppm in 2% Nitric Acid	500ml
AAKH10A	Potassium Standard 10ppm in 0.5M Nitric Acid	100ml
AAKH10C	Potassium Standard 10ppm in 0.5M Nitric Acid	500ml
AAKH-250ML	Potassium Standard 1000ppm in 0.5M Nitric Acid	250ml
AAK-H	Potassium Standard 1000ppm in 0.5M Nitric Acid	500ml
AAKH1	Potassium Standard 1000ppm in 0.5M Nitric Acid	1L
AAK-M	Potassium Standard 10000ppm in 0.5M Nitric Acid	500ml
AARHE	Rhodium Standard 1ppm in 10% Hydrochloric Acid	50ml
AARHH	Rhodium Standard 1000ppm in 1M Nitric Acid	500ml
AARHM	Rhodium Standard 10000ppm in 1M Nitric Acid	500ml
AASMH	Samarium Standard 1000ppm in 2-5% Nitric Acid	500ml
AASMH1	Samarium Standard 1000ppm in 2-5% Nitric Acid	100ml
AASEH	Selenium Standard 1000ppm in 0.5M Nitric Acid	500ml
AASEM	Selenium Standard 10000ppm in 1M Nitric Acid	500ml
AASIH	Silicon Standard 1000ppm in Water	500ml
AA-GLO-SIL-100	Silicon Standard 1000ppm Silicon as Sodium Silicate in Water	100ml
AASIM	Silicon Standard 10000ppm in Water	500ml
AAAGH	Silver Standard 1000ppm in 0.5M Nitric Acid	500ml
AAAGM	Silver Standard 10000ppm in 1M Nitric Acid	500ml
AANAD05	Sodium Standard 0.5ppm in 2% Nitric Acid	500ml
AANAD1	Sodium Standard 1ppm in 2% Nitric Acid	500ml
AANAD2	Sodium Standard 2ppm in 2% Nitric Acid	500ml
AANAH10A	Sodium Standard 10ppm in 0.5M Nitric Acid	100ml
AANAH10C	Sodium Standard 10ppm in 0.5M Nitric Acid	500ml
AANA1005	Sodium Standard 100ppm in Hydrochloric Acid	500ml
AANAH	Sodium Standard 1000ppm in 0.5M Nitric Acid	500ml
AANAH1	Sodium Standard 1000ppm in 0.5M Nitric Acid	1L
AANAH-250ML	Sodium Standard 1000ppm in 0.5M Nitric Acid	250ml
AANASP	Sodium Standard 1000ppm in 1M Nitric Acid	500ml
AANAM	Sodium Standard 10000ppm in 1M Nitric Acid	500ml
AASRH	Strontium Standard 1000ppm in 0.5M Nitric Acid	500ml
AASRM	Strontium Standard 10000ppm in 1M Nitric Acid	500ml
AAS-H	Sulphur Standard 1000ppm in Water	500ml
AAS-M	Sulphur Standard 10000ppm in Water	500ml
AATEH	Tellurium Standard 1000ppm in 1M HCl	500ml
AATEM	Tellurium Standard 10000ppm in 1M HCl	500ml

Product No.	Description	Pack Size
AATLA	Thallium Standard 1ppm in 2% Nitric Acid	100ml
AA-TL-1-250	Thallium Standard 1ppm in 2% Nitric Acid	250ml
AATL15	Thallium Standard 1ppm in 2% Nitric Acid	500ml
AA-TL-2-250	Thallium Standard 2ppm in 2% Nitric Acid	250ml
AATL25	Thallium Standard 2ppm in 2% Nitric Acid	500ml
AA-TL-3-250	Thallium Standard 3ppm in 2% Nitric Acid	250ml
AATL35	Thallium Standard 3ppm in 2% Nitric Acid	500ml
AA-TL-4-250	Thallium Standard 4ppm in 2% Nitric Acid	250ml
AATL45	Thallium Standard 4ppm in 2% Nitric Acid	500ml
AA-TL-5-250	Thallium Standard 5ppm in 2% Nitric Acid	250ml
AATL55	Thallium Standard 5ppm in 2% Nitric Acid	500ml
AA-TL-10-250	Thallium Standard 10ppm in 2% Nitric Acid	250ml
AATL105	Thallium Standard 10ppm in 2% Nitric Acid	500ml
AA-TL-25-250	Thallium Standard 25ppm in 2% Nitric Acid	250ml
AATLH	Thallium Standard 1000ppm in 0.5M Nitric Acid	500ml
AATLM	Thallium Standard 10000ppm in 0.5M Nitric Acid	500ml
AATTH	Thorium Standard 1000ppm in 1M Nitric Acid	500ml
AATTM	Thorium Standard 10000ppm 1M Nitric Acid	500ml
AASNH	Tin Standard 1000ppm in 1M Hydrochloric Acid	500ml
AASNM	Tin Standard 10000ppm in 1M Hydrochloric Acid	500ml
AATIH	Titanium Standard 1000ppm in Water	500ml
AATIM	Titanium Standard 10000ppm in Water	500ml
AAW-H	Tungsten Standard 1000ppm in Water	500ml
AAW-M	Tungsten Standard 10000ppm in Water	500ml
AAUH	Uranium Standard 1000ppm in 1M Nitric Acid	500ml
AAUM	Uranium Standard 10000ppm in 1M Nitric Acid	500ml
AAV-H	Vanadium Standard 1000ppm in 0.5M Nitric Acid	500ml
AAV-M	Vanadium Standard 10000ppm in 0.5M Nitric Acid	500ml
AAYBH	Ytterbium Standard 1000ppm in 2% Nitric Acid	500ml
AAZNC	Zinc Standard 1ppm in Nitric Acid	100ml
AAZNH	Zinc Standard 1000ppm in 0.5M Nitric Acid	500ml
AAZNH-250ML	Zinc Standard 1000ppm in 0.5M Nitric Acid	250ml
AAZNM	Zinc Standard 10000ppm in 0.5M Nitric Acid	500ml
AAZN501	Zinc Standard 5000ppm in 2-5% Nitric Acid	100ml
AAZN502	Zinc Standard 5000ppm in 2-5% Nitric Acid	250ml
AAZN505	Zinc Standard 5000ppm in 2-5% Nitric Acid	500ml
AAZRH	Zirconium Standard 1000ppm in 1M Hydrochloric Acid	500ml
AAZRM	Zirconium Standard 10000ppm in 1M Hydrochloric Acid	500ml

Multi Element Standards

Product No.	Description	Pack Size
AA-BAE-STD10	Multi Element Standard Ag, Zn 0.75ppm in 2% Nitric Acid	250ml
AA-BAE-STD3	Multi Element Standard Cu,Ni,Pb,Cd 3ppm in 2% Nitric Acid	250ml
AA-BAE-STD8	Multi Element Standard Ag, Zn 0.25ppm in 2% Nitric Acid	250ml
AA-BAE-STD9	Multi Element Standard Ag, Zn 0.50ppm in 2% Nitric Acid	250ml
AA-BIB-3-100	Multi Element Standard Cd, Pb, Ni @1000ppm in 2% Nitric Acid	100ml
AA-BIB-3-500	Multi Element Standard Cd, Pb, Ni @1000ppm in 2% Nitric Acid	500ml
AAMIX13A	Multi Element Standard 13 elements @10µg/ml	100ml
AAMIX13B	Multi Element Standard 13 elements @100µg/ml	100ml
AAS16-100	Multi Element Standard at 1mg/L in 5% Nitric Acid	100ml
AAS16-250	Multi Element Standard at 1mg/L in 5% Nitric Acid	250ml
AAS16-500	Multi Element Standard at 1mg/L in 5% Nitric Acid	500ml

Releasing Agents for Atomic Absorption

Product No.	Description	Pack Size
RA1N05	Release Agent 1.0% Lanthanum in Nitric Acid	500ml
RA1CO5	Release Agent 1.0% Lanthanum in Hydrochloric Acid	500ml
RA5NO5	Release Agent 5.0% Lanthanum in Nitric Acid	500ml
RA5CO5	Release Agent 5.0% Lanthanum in Hydrochloric Acid	500ml

Matrix Modifier Solutions for Graphite Furnace AA

Description	Product No. 100ml	Product No. 500ml
AA Matrix Modifier Solution for Graphite Furnace Ammonium Dihydrogen Phosphate	MMS101	MMS105
AA Matrix Modifier Solution for Graphite Furnace Ammonium Nitrate	MMS201	MMS205
AA Matrix Modifier Solution for Graphite Furnace Calcium Nitrate	MMS301	MMS305
AA Matrix Modifier Solution for Graphite Furnace Lanthanum Chloride	MMS401	MMS405
AA Matrix Modifier Solution for Graphite Furnace Lanthanum Nitrate	MMS501	MMS505
AA Matrix Modifier Solution for Graphite Furnace Magnesium Nitrate	MMS601	MMS605
AA Matrix Modifier Solution for Graphite Furnace Nickel Nitrate	MMS701	MMS705
AA Matrix Modifier Solution for Graphite Furnace Palladium Nitrate	MMS801	MMS805
AA Matrix Modifier Solution for Graphite Furnace Palladium Nitrate	MMS901	MMS905
AA Matrix Modifier Solution for Graphite Furnace Palladium Nitrate	MMS1001	MMS1005