VWR We Enable Science

VWR BDH CHEMICALS

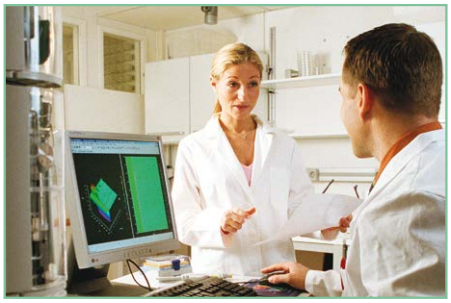
VWR® TRACE ANALYSIS

NORMATOM®
high purity acids

ARISTAR® ICP and
IC single element
standards

ARISTAR® ICP
multi-element
standards

AVS TITRINORM
AAS standards



VWR BDH CHEMICALS designed for research & analysis

NORMATOM® high purity acids

In trace analysis, it's crucial to use an homogenous solution, so samples are usually prepared using a digestion method with a mineral acid. The high purity of these acids is essential to avoid inaccuracy in the final results caused by impurities in these ancillary reagents. NORMATOM® acids have been created to satisfy these exacting purity requirements. Ultrapure products have 63 specifications <20 ppt for the range.

- Very high purity (specifications in ppb and ppt for Ultrapure)
- Produced by sub boiling distillation
- Supplied in special polyethylene bottles
- Delivered with Certificate of Analysis

Description	250 ml	500 ml	1 l	2 l	2,5 l
Acetic acid 99%	-	83876.270	83876.290	-	83876.330
Acetic acid 99% Ultrapure	85030.230	85030.270	-	-	-
Ammonia 20%	-	83870.270	-	-	-
Ammonia 20% Ultrapure	85031.230	85031.270	-	-	-
Hydrobromic acid 47% Ultrapure	-	85032.270	-	-	-
Hydrochloric acid 34%	-	83871.270	83871.290		83871.330
Hydrochloric acid 32% Ultrapure	83878.230	83878.270	83878.290	83878.300	-
Hydrochloric acid 30%	-		85493.290		
Hydrofluoric acid 47%	-	83873.260	-	-	-
Hydrofluoric acid 47% Ultrapure	85029.230	85029.270	85029.290	-	-
Hydrogen peroxide 30% Ultrapure	-	85040.270		-	-
Nitric acid 67%	-	83872.270	83872.290	-	83872.330
Nitric acid 67% Ultrapure	83879.230	83879.270	83879.290	83879.300	
Perchloric acid 67%*	-	83874.260	-	-	83874.320
Perchloric acid 65-71% Ultrapure	85822.230	85822.270	85822.290	85822.300	-
Sulphuric acid 93%	-	83875.270	83875.290	-	83875.330
Sulphuric acid 93% Ultrapure	85028.230	85028.270	85028.290	-	-
Water for trace analysis	-	83877.260	83877.290	-	-

*Product delivered in glass bottle.

ARISTAR® ICP, ICP-MS and IC single element standards

- Produced from high purity acids, water ASTM I 18 MΩ and 99,999% high purity salts
- Solution assayed by titration
- Final concentration verified against ICP standards from NIST
- Total maximum uncertainty: ±1%
- Delivered with Certificate of Analysis
- Produced by accreditated supplier ISO guide 34 and ISO 17025
- All standards have a 1000 mg/l concentration except ICP-MS standards which are also available in 10 mg/l

Standards for		ICP-MS
Concentration (ppm)		10
Pk (ml)		100
Element	**Composition**	**Cat. No.**
Aluminium	$(Al(NO_3)_3.9H_2O$ in HNO_3 2-5%	85548.180
Antimony	Sb in HNO_3 2-5%	85595.180
Arsenic	As in HNO_3 2-5%	85549.180
Barium	$BaCO_3$ in HNO_3 2-5%	85552.180
Beryllium	$BeO(C_2H_3O_2)6$ in HNO_3 2-5%	85553.180
Bismuth	Bi in HNO_3 2-5%	85554.180
Boron	$(NH_4)_2B_4O_7$ in H_2O	85551.180
Cadmium	Cd in HNO_3 2-5%	85556.180
Calcium	$CaCO_3$ in HNO_3 2-5%	85555.180
Cerium	$Ce(NO_3)_3$ in 2% HNO_3	85557.180
Caesium	$CsNO_3$ in HNO_3 2-5%	85560.180
Chromium	$Cr(NO_3)_3$ in 2% HNO_3	85559.180
Cobalt	Co in HNO_3 2-5%	85558.180
Copper	Cu in HNO_3 2-5%	85561.180
Dysprosium	Dy_2O_3 in HNO_3 2-5%	85562.180
Erbium	Er_2O_3 in HNO_3 2-5%	85563.180
Europium	Eu_2O_3 in HNO_3 2-5%	85564.180
Gadolinium	Gd_2O_3 in HNO_3 2-5%	85567.180
Gallium	Ga in HNO_3 2-5%	85566.180
Germanium	Ge in 2% HNO_3/0,2% HF	85568.180
Gold	Au in HCl 10%	85550.180
Hafnium	HfO_2 in HNO_3 2-5%, HF traces	85569.180
Holmium	Ho_2O_3 in HNO_3 2-5%	85571.180
Indium	In in HNO_3 2-5%	85572.180
Iridium	$IrCl_3.3H_2O$ in HCl 10%	85573.180
Iron	Fe in HNO_3 2-5%	85565.180
Lanthanum	La_2O_3 in HNO_3 2-5%	85575.180
Lead	$Pb(NO_3)_2$ in HNO_3 2-5%	85586.180
Lithium	Li_2CO_3 in HNO_3 2-5%	85576.180
Lutetium	Lu_2O_3 in HNO_3 2-5%	85577.180
Magnesium	$Mg(NO_3)_2$ in HNO_3 2-5%	85578.180
Manganese	$Mn(NO_3)_2$ in HNO_3 2-5%	85579.180
Mercury	HgO in 2% HNO_3	85570.180
Molybdenum	$(NH_4)_2M_oO_4$ in H_2O	85580.180
Neodymium	Nd_2O_3 in HNO_3 2-5%	85583.180
Nickel	$Ni(NO_3)_2$ in HNO_3 2-5%	85584.180
Niobium	Nb in 2% HNO_3/0,5% HF traces	85582.180
Palladium	Pd in 2% HNO_3	85587.180
Phosphorus	P in H_2O	85585.180
Platinium	Pt in HCl 2%	85589.180
Potassium	KNO_3 in HNO_3 2-5%	85574.180
Praseodymium	Pr_6O_{11} in HNO_3 2-5%	85588.180
Rhenium	Re in H_2O, HNO_3 traces	85591.180
Rhodium	$RhCl_3$ in HCl 2%	85592.180
Rubidium	$RbNO_3$ in HNO_3 2-5%	85590.180
Ruthenium	$RuCl_3.3H_20$ in HCl 2%	85593.180
Samarium	Sm_2O_3 in HNO_3 2%	85599.180
Scandium	$Sc(NO_3)_3$ in HNO_3 2%	85596.180

Standards for		ICP				ICP-MS
Concentration (ppm)		1000		10.000		1000
Pk (ml)		100	500	100	500	100
Element	**Composition**	**Cat. No.**	**Cat. No.**	**Cat. No.**	**Cat. No.**	**Cat. No.**
Aluminium	$(Al(NO_3)_3.9H_2O$ in HNO_3 2-5%	455002C	455004E	455012E	455014G	457202A
Antimony	Sb in HNO_3 2-5%	455022G	455024Y	-	455034K	456632H
Arsenic	As in HNO_3 2-5%	455042K	455044M	455052M	455054X	456892C
Barium	$(Ba(NO_3)_2$ in HNO_3 2-5%	455062X	455064Q	455072Q	455074S	456652L
	$BaCO_3$ in HNO_3 2-5%	-	-	-	-	-
Beryllium	$BeO(C_2H_3O_2)_6$ in HNO_3 2-5%	455082S	455084U	455092U	455094W	456662N
Bismuth	Bi in HNO_3 2-5%	455102F	455104H	455112H	455114J	456672P
Boron	H_3BO_3 in H_2O and NH_4OH traces	455122J	455124L	455132L	455134N	457213B
	$(NH_4)_2B_4O_7$ in H_2O	-	-	-	-	-
Cadmium	Cd in HNO_3 2-5%	455142N	455144P	455152P	455154R	456682R
Calcium	$CaCO_3$ in HNO_3 2-5%	455162R	455164T	455172T	455174V	456692T
Cerium	$(NH_4)_2Ce(NO_3)_6$ in HNO_3 2-5%	455182V	455184A	455192A	455194C	457224C
	$Ce(NO_3)_3$ in 2% HNO_3	-	-	-	-	-
Caesium	$CsNO_3$ in HNO_3 2-5%	455202Y	455204K	455212K	455214M	457235D
Chromium	$(NH_4)_2Cr_2O_7$ in HNO_3 2-5%	455222M	455224X	455232X	455234Q	456702E
	$(NH_4)_2Cr_2O_7$ in HCl 5%	455242Q	455244S	455252S	455254U	-
	$Cr(NO_3)_3$ in 2%HNO_3	-	-	-	-	-
Cobalt	Co in HNO_3 2-5%	455262U	455264W	455272W	455274B	457062W
Copper	Cu in HNO_3 2-5%	455282B	455284D	455292D	455294F	456722Y
Dysprosium	Dy_2O_3 in HNO_3 2-5%	455302L	455304N	455212N	455214P	457246F
Erbium	Er_2O_3 in HNO_3 2-5%	455322P	455324R	455332R	455334T	457257G
Europium	Eu_2O_3 in HNO_3 2-5%	455342T	455344V	455352V	455354A	457268H
Gadolinium	Gd_2O_3 in HNO_3 2-5%	455362A	455364C	455372C	455374E	457279J
Gallium	Ga in HNO_3 2-5%	455382E	455384G	455392G	-	457281A
Germanium	$(NH_4)_2GeF_6$ in H_2O, HF traces	455402X	455404Q	455412Q	-	456732K
	Ge in 2% HNO_3/0,2% HF	-	-	-	-	-
Gold	Au in HCl 10%	455422S	455424U	455432U	455434W	456742M
Hafnium	HfO_2 in HNO_3 2-5%, HF traces	455442W	455444B	455452B	455454D	457292B
Holmium	Ho_2O_3 in HNO^3 2-5%	455462D	455464F	455472F	455474H	457303C
Indium	In in HNO_3 2-5%	455482H	455484J	455492J	455494L	456752X
Iridium	$IrCl_3.3H_2O$ in HCl 10%	455502R	455504T	455512T	-	457314D
Iron	Fe in HNO_3 2-5%	455522V	455524A	455532A	455534C	456762Q
Lanthanum	La_2O_3 in HNO_3 2-5%	455542C	455544E	455552E	455554G	457325E
Lead	$Pb(NO_3)_2$ in HNO_3 2-5%	455562G	455564Y	455572Y	455574K	456772S
Lithium	Li_2CO_3 in HNO_3 2-5%	455582K	455584M	455592M	455594X	456782U
Lutetium	Lu_2O_3 in HNO_3 2-5%	455602U	455604W	455612W	455614B	457336F
Magnesium	Mg in HNO_3 2-5%	455622B	455624D	455632D	455634F	456792W
Manganese	Mn in HNO_3 2-5%	455642F	455644H	455652H	455654J	456802H
Mercury	Hg in HNO_3 10%	455662J	455664L	455672L	455674N	456812J
Molybdenum	$(NH_4)_2M_oO_4$ in HNO_3, HF traces	455682N	455684P	455692P	-	457347G
Neodymium	Nd_2O_3 in HNO_3 2-5%	455702A	455704C	455712C	455714E	457358H
Nickel	Ni in HNO_3 2-5%	455722E	455724G	455732G	455734Y	456832N
Niobium	Nb_2O_5 in H_2O, HF traces	455742Y	455744K	455752K	-	457369J
Palladium	Pd in HCl 10%	455762M	455764X	455772X	-	457371K
	Pd in 2% HNO_3	-	-	-	-	-
Phosphorus	P in H_2O	455782Q	455784S	455792S	455794U	456842P
Platinium	Pt in HCl 10%	455802D	455804F	458812F	-	457382L
Potassium	KNO_3 in HNO_3 2-5%	455822H	455824J	455832J	455834L	456852R

Standards for		ICP-MS
Concentration (ppm)		10
Pk (ml)		100
Element	Composition	Cat. No.
Selenium	Se in HNO_3 2%	85597.180
Silicon	$(NH_4)_2SiF_6$ in H_2O, HF traces	85598.180
Silver	Ag in HNO_3 2%	85547.180
Sodium	$NaNO_3$ in HNO_3 2%	85581.180
Strontium	$SrCO_3$ in HNO_3 2%	85631.180
Sulphur	$(NH_4)_2SO_4$ in H_2O	85594.180
Tantalum	Ta in 2% HNO_3/0,5% HF	85632.180
Tellurium	Te in HNO_3 2%	85634.180
Terbium	$Tb(NO_3)_3$ in HNO_3 2%	85633.180
Thallium	$TlNO_3$ in HNO_3 2%	85639.180
Thullium	Tm_2O_3 in HNO_3 2%	85640.180
Tin	Sn in in 1% HNO_3/0,5% HF	85630.180
Titanium	Ti in H_2O, HF traces	85636.180
Uranium	$UO_2(OOCCH_3)_2$ in HNO_3 2%	85641.180
Vanadium	NH_4VO_3 HNO_3 2%	85643.180
Ytterbium	Yb_2O_3 in HNO_3 2%	85647.180
Yttrium	Y_2O_3 in HNO_3 2%	85646.180
Zinc	Zn in HNO_3 2%	85648.180
Zirconium	$ZrO(NO_3)_2$ in HNO_3 2%	85649.180
Tungsten	W in H_2O, NH_4OH traces	85644.180

Standards for		ICP				ICP-MS
Concentration (ppm)		1000		10.000		1000
Pk (ml)		100	500	100	500	100
Element	Composition	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Praseodymium	Pr_6O_{11} in HNO_3 2-5%	455842L	455844N	455852N	-	457393M
Rhenium	Re in H_2O, HNO_3 traces	455862P	455864R	455872R	-	457404N
Rhodium	Rh in HCl 10%	455882T	455884V	455892V	-	456862T
Rubidium	$RbNO_3$ in HNO_3 2-5%	455902G	455904Y	455912Y	-	457415P
Ruthenium	$RuCl_3.3H_20$ in HCl 10%	455922K	455924M	455932M	-	457426Q
Samarium	Sm_2O_3 in HNO_3 2-5%	455942X	455944Q	455952Q	455954S	457437R
Scandium	Sc in HNO_3 2-5%	455962S	455964U	455972U	455974W	456872V
Selenium	Se in HNO_3 2-5%	455982W	455984B	455992B	455994D	456882A
Silicon	$(NH_4)_2SiF_6$ in H_2O, HF traces	456002G	456004Y	456012Y	456014K	457448S
Silver	Ag in HNO_3 2-5%	456022K	456024M	456032M	-	456892C
Sodium	$NaNO_3$ in HNO_3 2-5%	456042X	456044Q	456052Q	456054S	456902K
Strontium	Sr in HNO_3 2-5%	456062S	-	456072U	456074W	456912M
Sulphur	$(NH_4)_2SO_4$ in H_2O	456082W	456084B	456092B	456094D	456922X
Tantalum	Ta in H_2O,HF traces	456102J	456104L	456112L	456114N	457459V
Tellurium	Te in HCl 20%	456122N	456124P	456132P	-	457461A
Terbium	Tb_4O_7 in HNO_3 2-5%	456142R	456144T	456152T	456154V	456932Q
Thallium	Tl in HNO_3 2-5%	456162V	456164A	456172A	456174C	456942S
Tin	Sn in HNO_3 2-5%, HF traces	456222Q	456224S	456232S	-	-
	Sn in HCl 20%	456242U	456244W	456252W	456254B	456952U
Titanium	Ti in H_2O, HF traces	456262B	456264D	456272D	456274F	456962W
Vanadium	V_2O_5 in HNO_3 2-5%	456322T	456324V	456332V	456334A	456972B
Ytterbium	Yb_2O_3 in HNO_3 2-5%	456342A	456344C	456352C	456354E	457472B
Yttrium	Y in HNO_3 2-5%	456362E	456364G	456372G	456374Y	456982D
Zinc	Zn in HNO_3 2-5%	456382Y	456384K	456392K	456394M	456992F
Zirconium	$ZrO(NO_3)_2$ in HNO_3 2-5%	456402S	456404U	456412U	456414W	457483C
Tungsten	W in H_2O, NH_4OH traces	457182G	457184Y	457172E	457174G	457494D

TITRINORM ion chromatography standards

Please note all products are 1000 mg/l in water unless otherwise stated.

Concentration (ppm)	1000	
Pk (ml)	100	500
Description	Cat. No.	Cat. No.
Acetate	84951.180	-
Ammonium	84952.180	84952.260
Ammonium (in N)	84953.180	84953.260
Barium	84954.180	-
Benzoate	84955.180	-
Bromate	84956.180	-
Bromide	84957.180	84957.260
Calcium	84958.180	-
Cesium	84959.180	-
Chlorate	84960.180	-
Chlorite 1000 mg/l in NaOH solution	84961.180	-
Chloride	84962.180	84962.260
Chromate (in Cr VI)	84963.180	-
Citrate water	84965.180	-
Fluoride	84966.180	84966.260
Formate	84967.180	-
Glycolate	84968.180	-
Hydrogenophthalate	84969.180	-
Hydrogenosulphite	84970.180	-
Iodate	84971.180	-
Iodide	84972.180	84972.260
Lactate	84973.180	-
Lithium	84974.180	-
Magnesium	84975.180	84975.260
Maleate	84976.180	-
Methane sulphonate	84977.180	-

Concentration (ppm)	1000	
Pk (ml)	100	500
Description	Cat. No.	Cat. No.
3-Methoxypropylamine	84978.180	-
Monoethanolamine	84979.180	-
Monomethylamine	84980.180	-
Nitrate	84981.180	84981.260
Nitrate (in N)	84982.180	84982.260
Nitrilotriacetate	84983.180	-
Nitrite	84984.180	84984.260
Nitrite (in N)	84985.180	84985.260
Oxalate	84986.180	-
Perchlorate	84987.180	-
Phosphate	84988.180	84988.260
Phosphate (in P)	84989.180	84989.260
Potassium	84990.180	84990.260
Propionate	84991.180	-
Silicate	84992.180	-
Sodium	84993.180	84993.260
Strontium	84994.180	-
Succinate	84995.180	-
Sulphate	84996.180	84996.260
Sulphite (in HSO_3.)	84997.180	84997.260
Tartrate	84998.180	-
Thiocyanate	84999.180	-
Thiosulphate 1000 mg/l in amylic alcohol	85000.180	-
Triethanolamine	85001.180	-
Triethylamine	85002.180	-
Trimetylamine	85003.180	-

ARISTAR® ICP and ICP-MS multi-element standards

Multi-element standards are directly traceable to NIST. A Certificate of Analysis is delivered with each product including exact data on content, composition, traceability, date of release and minimum shelf life.

Description	Cat. No.
ICP multi-element solution according USP 232 Dietary supplements	
4 elements: Cd 5 mg/l, Pb 10 mg/l, as 15 mg/l, Hg 15 mg/l in HNO_3 7%	85035.180
ICP multi-element solution according USP 232 Oral dose	
8 elements: Cd 25 mg/l, Pb 5 mg/l, as 1,5 mg/l, Hg 15 mg/l, Mo 100 mg/l, Ni 500 mg/l, V 100 mg/l, Cu 1000 mg/l in HNO_3 7%	85036.180
ICP multi-element solution diluted according USP 232 Oral dose	
8 elements: Cd 2,5 mg/l, Pb 5 mg/l, as 1,5 mg/l, Hg 1,5 mg/l, Mo 10 mg/l, Ni 50 mg/l, V 10 mg/l, Cu 100 mg/l in HNO_3 7%	85037.180
ICP multi-element solution according USP 232 Parental dose	
6 elements: 100 mg/l each of Ir; Pt; Os; Rh; Pd; Ru in HCl 15%	85038.180
ICP multi-element solution according USP 232 Parental dose	
6 elements: 10 mg/l each of Ir; Pt; Os; Rh; Pd; Ru in HCl 15%	85039.180

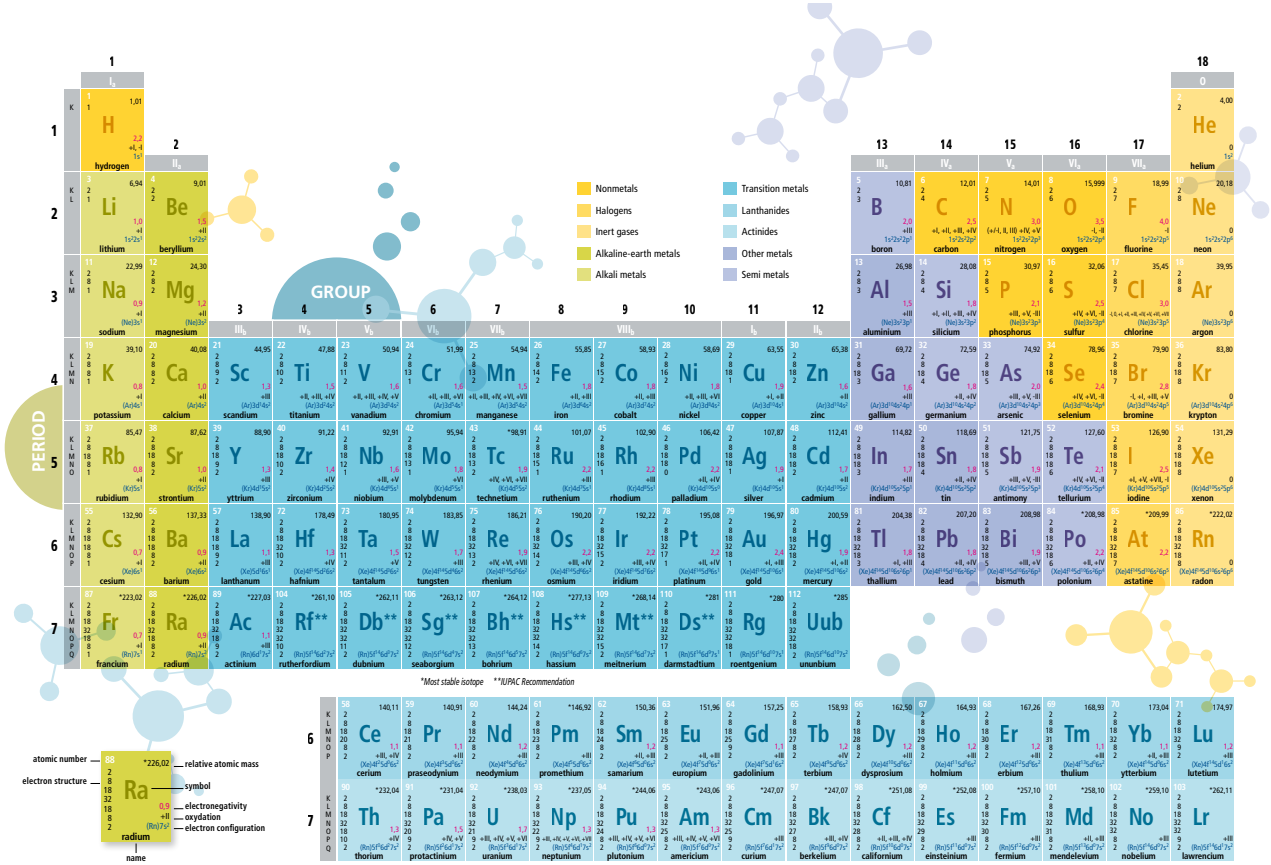
Description	Pk (ml)	Cat. No.
ICP-MS, multi-element calibration standard 2 ARISTAR®		
29 elements: 10 mg/l: Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, P, Rb, Se, Sr, Tl, U, V, ZN in HNO_3 5%	100	456502V
ICP-MS, multi-element calibration standard 4 ARISTAR®		
12 elements: 10 mg/l: B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr in H_2O, HF traces	100	456522C
ICP-MS, tuning solution 1 ARISTAR®		
8 elements: 100 mg/l: Ba, Be, Cu, In, Li, Mg, Tl, U in HNO_3 2%	100	456532E
ICP-MS, tuning solution 2 ARISTAR®		
13 elements: 100 mg/l: Ba, Be, Bi, Ce, Cu, Ho, In, Li, Mg, Pb, Tl, U, Y in HNO_3 2%	100	456542G
ICP-MS, interference check 1 ARISTAR®		
12 elements: Cl 18000 mg/l: Al, K, Mg, P, S 1000 mg/l, C 2000 mg/l, Ca 3000 mg/l, Fe, Na 2500 mg/l, Mo, Ti 20 mg/l in HNO_3 1%	100	456552Y
ICP-MS, interference check 2 ARISTAR®		
11 elements: Ag, C, Cr, Cu, Mn, Ni, V at 20 mg/l, As, Cd, Se, Zn at 10 mg/l	100	456562K
ICP-MS, multi-element quality control standard 1 ARISTAR®		
9 elements: 10 mg/l: Be, Bi, Ce, Co, In, Pb, Mg, Ni, U in HNO_3 2%	100	456592Q
ICP-MS, multi-element quality control standard 2 ARISTAR®		
25 elements: 10 mg/l: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Th, Tl, U, V, Zn in HNO_3 5%	100	456602B
ICP-MS, multi-element calibration standard 1 ARISTAR®		
17 elements: 10 mg/l: Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, Y, Yb in HNO_3 5%	100	456622F
ICP-MS multi-element quality control standard		
36 elements: 10 mg/l: Al, Ag, As, B, Ba, Ca, Cd, Ce, Co, Cr, Cu, Dy, Er, Eu, Fe, Gd, Ho, K, La, Li, Lu, Mg, Mn, Na, Nd, Ni, P, Pb, Rb, Se, Sm, Sr, Tl, Tm, V, Zn	100	84793.180
ICP-MS multi-element quality control standard		
12 elements: 10 mg/l: Hf, Ge, Mo, Nb, Sb, Si, Sn, Ta, Te, Ti, W, Zr	100	84794.180
Checking solution for ICP-MS		
9 elements: 100 mg/l: Be, I, Bi, Li, Cr, Mg, Co, Pb, U	250	88175.230
ICP multi-element quality control standard 1 ARISTAR®		
23 elements: 100 mg/l: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, P, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn in HNO_3 5%, HF traces	100	456422W
ICP multi-element quality control standard 1 ARISTAR®		
23 elements: 100 mg/l: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, P, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn in HNO_3 5%, HF traces	500	456424B
ICP multi-element quality control standard 2 ARISTAR®		
7 elements: Ag 50 mg/l, Al, B, Ba, Na at 100 mg/l, K at 1000 mg/l, Si 500 mg/l in HNO_3 5%, HF traces	100	456432B
ICP multi-element quality control standard 2 ARISTAR®		
7 elements: Ag 50 mg/l, Al, B, Ba, Na at 100 mg/l, K at 1000 mg/l, Si 500 mg/l in HNO_3 5%, HF traces	500	456434D
ICP multi-element quality control standard 3 ARISTAR®		
15 elements: 100 mg/l: Al, Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, Na, Ti, Zn in HNO_3 5%	100	456442D

Description	Pk (ml)	Cat. No.
ICP multi-element quality control standard 3 ARISTAR®		
15 elements: 100 mg/l: Al, Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, Na, Ti, Zn in HNO_3 5%	500	456444F
ICP multi-element calibration standard 1 ARISTAR®		
19 elements: Ag, Ni 50 mg/l, Al 100 mg/l, B, Fe 15 mg/l, Ba, Mn 5 mg/l, Be, Sr 1 mg/l, Bi, In, Pb 200 mg/l, Cd, Co, Cu, Zn 20 mg/l, Cr 25 mg/l, Ga 150 mg/l, Tl 40 mg/l in HNO_3 5%	100	456452F
ICP multi-element calibration standard 2 ARISTAR®		
3 elements: K 10000 mg/l, Li 250 mg/l, Na 1000 mg/l in HNO_3 2%	100	456462H
ICP multi-element calibration standard 3 ARISTAR®		
4 elements: 1000 mg/l: Ba, Ca, Mg, Sr in HNO_3 2%	100	456472J
ICP multi-element quality control standard		
28 elements: 1 mg/l: Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn in HNO_3 2%	100	05200.185
ICP multi-element quality control standard		
28 elements: 100 mg/l: Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn in HNO_3 2%	100	85006.186
ICP multi-element quality control standard		
21 elements: 1000 mg/l: Ag, As, Al, B, Ba, Bi, Cd, Co, Cr, Cu, Fe, Ga, In, Li, Mn, Ni, Pb, Sr, Tl, Zn, Si in HNO3 4%	100	87629.180
ICP multi-element quality control standard		
22 elements: 10 mg/l: As, Ba, Be, Cd, Co, Cr, Cu, Fe, Al, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, Tl, V, U, Te, Zn in HNO_3 5%	50	88724.150
ICP multi-element quality control standard		
21 elements: 100 mg/l: Al, As, B, Ca, Cd, Cr, Co, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, P, Ti, Zn, Si, S in HNO_3 5%	100	89166.180
ICP multi-element quality control standard		
32 elements: 100 mg/l: Ag, Al, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Ge, In, K, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Re, Sb, Si, Sn, Ta, Ti, V, W, Zn in HNO_3 5%	100	89186.180
ICP multi-element quality control standard		
23 elements: 100mg/l: As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn in HNO_3 5%	100	84790.180
ICP multi-element quality control standard		
33 elements: 100 mg/l: Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn in HNO_3 5%	100	84791.180
ICP multi-element quality control standard		
9 elements: 100 mg/l: Au, Ir, Os, Pd, Pt, Rh, Ru, Sn, Te in HCl 10%	100	84792.180
ICP nitric acid calibration blank ARISTAR®: HNO_3 5% in H_20	500	456484N
ICP multi-element quality control standard		
23 elements: 1000 mg/l: Ag, Al, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Sr, Tl, Zn in HNO_3 5%	100	85025.180
ICP MS multi-element quality control standard		
30 elements: 1000 mg/l: As, B, Be, Fe, Se, Zn at 100 mg/l, Ba, Bi, Cd, Co, Cr, Cu, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Rb, Sr, Te, Ti, U, V at 10 mg/l, Ca in HNO_3 2%	100	85026.180

Custom multi-element standards

VWR, working in partnership with CPACHEM, offer a custom service enabling you to define your own components, tailoring the standard to your particular application. These products are of the same high quality and traceability as our standard range.

For more information please contact your local VWR sales office.



INORGANIC CUSTOM MULTI-ELEMENT STANDARDS

For custom standards we guarantee:

- Certification under double accreditation following ISO 17025 and ISO Guide 34
- Highest levels of accuracy and reliability
- Minimised uncertainties and lot-specific values
- Traceability to NIST
- Delivered with Certificate of Analysis

To request your custom standard

Send a request to your local VWR sales office specifying your requirements:

- Element standard
- Ion standard
- Defining matrix
- Analytes
- Concentrations

You will receive a quotation a few days later.


VWR CHEMICALS

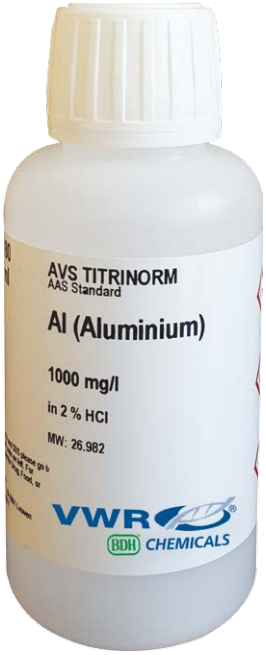
Certificate of Analysis

CERTIFIED REFERENCE MATERIAL

AVS TITRINORM AAS standards

This classic range of 1000 mg/l AAS standards has been extended with the introduction of 37 new elements.

- Complete range of 66 different standards
- Very competitive price
- Real value ±0,3%
- Delivered with Certificate of Analysis
- Tested according to ISO 17025



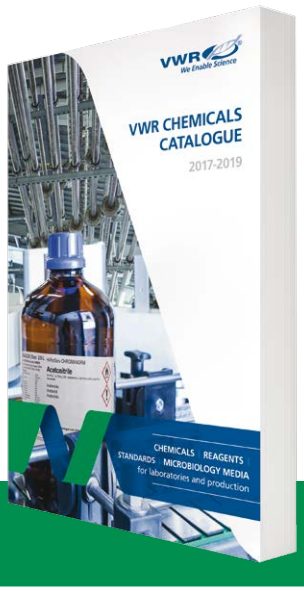
Element	AAS grade matrix	Cat. No. 100 ml	Cat. No. 500 ml
Ag	2% HNO_3	86659.180	86659.260
Al	2% HCl	86660.180	86660.260
As	2% HNO_3	86661.180	86661.260
Au	2% HCl	86662.180	86662.260
B	Water	86663.180	86663.260
Ba	2% HNO_3	86664.180	86664.260
Be	2% HCl	86665.180	86665.260
Bi	10% HNO_3	86666.180	86666.260
Ca	2% HNO_3	86667.180	86667.260
Cd	2% HNO_3	86668.180	86668.260
Ce	2% HNO_3	86669.180	86669.260
Co	2% HNO_3	86670.180	86670.260
Cr	2% HNO_3	86671.180	86671.260
Cs	2% HNO_3	86672.180	86672.260
Cu	2% HNO_3	86673.180	86673.260
Dy	2% HNO_3	86674.180	86674.260
Er	2% HNO_3	86675.180	86675.260
Eu	2% HNO_3	86676.180	86676.260
Fe	2% HCl	86677.180	86677.260
Ga	2% HNO_3	86678.180	86678.260
Gd	2% HNO_3	86679.180	86679.260
Ge	5% HNO_3/1% HF	86680.180	86680.260
Hf	2% HNO_3/1% HF	86681.180	86681.260
Hg	10% HNO_3	86682.180	86682.260
Ho	2% HNO_3	86683.180	86683.260
In	2% HNO_3	86684.180	86684.260
Ir	10% HCl	86685.180	86685.260
K	2% HNO_3	86686.180	86686.260
La	2% HNO_3	86687.180	86687.260
Li	2% HNO_3	86688.180	86688.260
Lu	2% HNO_3	86689.180	86689.260
Mg	2% HNO_3	86690.180	86690.260
Mn	2% HNO_3	86691.180	86691.260

Element	AAS grade matrix	Cat. No. 100 ml	Cat. No. 500 ml
Mo	Water	86692.180	86692.260
Na	2% HNO_3	86693.180	86693.260
Nb	5% HNO_3/1% HF	86694.180	86694.260
Nd	2% HNO_3	86695.180	86695.260
Ni	2% HNO_3	86696.180	86696.260
Os	5% HCl	86697.180	86697.260
P	Water	86698.180	86698.260
Pb	2% HNO_3	86699.180	86699.260
Pd	5% HCl	86700.180	86700.260
Pt	10% HCl	86701.180	86701.260
Rb	2% HNO_3	86702.180	86702.260
Rh	2% HNO_3	86703.180	86703.260
Rh	5% HCl	86704.180	86704.260
Ru	5% HCl	86705.180	86705.260
S	Water	86706.180	86706.260
Sb	5% HNO_3/1% HF	86707.180	86707.260
Sc	2% HNO_3	86708.180	86708.260
Se	2% HNO_3	86709.180	86709.260
Si	Water	86710.180	86710.260
Sa	2% HNO_3	86711.180	86711.260
Sn	20% HCl	86712.180	86712.260
Sr	2% HNO_3	86713.180	86713.260
Ta	5% HNO_3/1% HF	86714.180	86714.260
Te	10% HNO_3	86715.180	86715.260
Ti	5% HNO_3/0,5% HF	86717.180	86717.260
Tl	2% HNO_3	86718.180	86718.260
Tm	2% HNO_3	86719.180	86719.260
V	2% H_2SO_4	86721.180	86721.260
W	1% HNO_3/1% HF	86722.180	86722.260
Y	2% HNO_3	86723.180	86723.260
Yb	2% HNO_3	86724.180	86724.260
Zn	-	86725.180	86725.260
Zr	5% HCl/0,5% HF	86726.180	86726.260

VWR
We Enable Science

Have you got your copy of the VWR Chemicals catalogue yet?

Go to vwr.com or scan this QR code



Austria
VWR International GmbH
Graumanngasse 7
1150 Wien
Tel.: +43 1 97 002 0
Email: info.at@vwr.com

Belgium
VWR International bvba
Researchpark Haasrode 2020
Geldenaaksebaan 464
3001 Leuven
Tel.: +32 (0) 16 385 011
Email: vwr.be@vwr.com

Czech Republic
VWR International s. r. o.
Veetee Business Park
Pražská 442
CZ - 281 67 Stříbrná Skalice
Tel.: +420 321 570 321
Email: info.cz@vwr.com

Denmark
VWR International A/S
Tobaksvejen 21
2860 Søborg
Tel.: +45 43 86 87 88
Email: info.dk@vwr.com

Finland
VWR International Oy
Valimotie 9
00380 Helsinki
Tel.: +358 (0) 9 80 45 51
Email: info.fi@vwr.com

France
VWR International S.A.S.
Le Périgares – Bâtiment B
201, rue Carnot
94126 Fontenay-sous-Bois cedex
Tel.: 0 825 02 30 30* (national)
Tel.: +33 (0) 1 45 14 85 00 (international)
Email: info.fr@vwr.com
* 0,18 € TTC/min

Germany
VWR International GmbH
Hilpertstraße 20a
D - 64295 Darmstadt
Tel.: 0800 702 00 07* (national)
Tel.: +49 (0) 6151 3972 0 (international)
Email: info.de@vwr.com
*Freecall

Hungary
VWR International Kft.
Simon László u. 4.
4034 Debrecen
Tel.: +36 52 521130
Email: info.hu@vwr.com

Ireland / Northern Ireland
VWR International Ltd / VWR International (Northern Ireland) Ltd
Orion Business Campus
Northwest Business Park
Ballycoolin
Dublin 15
Tel.: +353 (0) 1 88 22 222
Email: sales.ie@vwr.com

Italy
VWR International S.r.l.
Via San Giusto 85
20153 Milano (MI)
Tel.: +39 02 3320311
Email: info.it@vwr.com

The Netherlands
VWR International B.V.
Postbus 8198
1005 AD Amsterdam
Tel.: +31 (0) 20 4808 400
Email: info.nl@vwr.com

Norway
VWR International AS
Haavard Martinsens vei 30
0978 Oslo
Tel.: +47 22 90 00 00
Email: info.no@vwr.com

Poland
VWR International Sp. z o.o.
Limbowa 5
80-175 Gdansk
Tel.: +48 58 32 38 200
Email: info.pl@vwr.com

Portugal
VWR International - Material de Laboratório, Lda
Centro Empresarial de Alfragide
Rua da Indústria, nº 6
2610-088 Alfragide
Tel.: +351 21 3600 770
Email: info.pt@vwr.com

Spain
VWR International Eurolab S.L.
C/ Tecnología 5-17
A-7 Llinars Park
08450 - Llinars del Vallès
Barcelona
Tel.: +34 902 222 897
Email: info.es@vwr.com

Sweden
VWR International AB
Fagerstagatan 18a
163 94 Stockholm
Tel.: +46 (0) 8 621 34 00
Email: kundservice.se@vwr.com

Switzerland
VWR International GmbH
Lerzenstrasse 16/18
8953 Dietikon
Tel.: +41 (0) 44 745 13 13
Email: info.ch@vwr.com

UK
VWR International Ltd
Customer Service Centre
Hunter Boulevard - Magna Park
Lutterworth
Leicestershire
LE17 4XN
Tel.: +44 (0) 800 22 33 44
Email: uksales@vwr.com

China
VWR International China Co., Ltd.
Shanghai Branch
Room 256, No. 3058 Pusan Road
Pudong New District
Shanghai 200123
Tel.:+86 21 5898 6888
Email: info_china@vwr.com

India
VWR Lab Products Private Limited
No.139. BDA Industrial Suburb,
6th Main, Tumkur Road, Peenya Post,
Bangalore, India – 560058
Tel.: +91 80 28078400
Email: vwr_india@vwr.com

Singapore
VWR Singapore Pte Ltd
18 Gul Drive
Singapore 629468
Tel: +65 6505 0760
Email: sales.sg@vwr.com

10/2017-MR-MB

GO TO **VWR.COM** FOR THE LATEST NEWS, SPECIAL OFFERS AND DETAILS OF YOUR LOCAL VWR DISTRIBUTOR

ZPROVWRI11461-EN