

Reference Materials

PerkinElmer offers a complete selection of Atomic Spectroscopy reference materials. Each solution is supplied with a comprehensive Certificate of Analysis that documents the quality and reliability.

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PerkinElmer is a leading provider of Atomic Spectroscopy solutions. We've used our expertise to bring you a portfolio of the highest quality standards to enhance your instrument performance. From our Pure and Pure Plus Inorganic Aqueous Standards to our Metallo-Organic Standards, inside this guide you will find a range of standards that are certified and tested to provide you the quality and reliability you expect, for all your application needs.

At PerkinElmer, we're committed to helping you achieve success for your laboratory – starting with the standards you use everyday.

Aqueous Standards

PerkinElmer offers a wide selection of PerkinElmer Pure and Pure Plus Aqueous Standards for all of your application needs.



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Metallo-Organic Standards

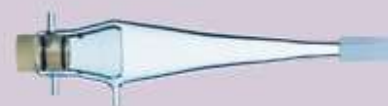
PerkinElmer offers a wide selection of Metallo-Organic Standards for all of your application needs.



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Single Cell Sample Introduction Kit

The Single Cell Application Module within PerkinElmer's Syngistix™ for ICP-MS software is the ideal tool for laboratories analyzing metal content in cells, either from bioaccumulation of metals or metallic nanoparticles in solution or measuring the intrinsic metal content of the cell.



▶ [VIEW PAGE](#)

Single-Element Standards

We understand how important standards are to your laboratory. That's why we offer a complete selection of PerkinElmer Pure (AA and ICP-OES) and Pure Plus (ICP-MS) grade Standards supplied with a comprehensive Certificate of Analysis. Each solution is certified to provide you with the quality and reliability you expect, every time.

We offer 1 µg/mL, 10 µg/mL, 1,000 µg/mL and 10,000 µg/mL single-element standards in a variety of volumes and purity levels.



Single-Element Standards – 1,000 µg/mL

Element	Symbol	Matrix	Pure Grade 125 mL Part No.	Pure Grade 500 mL Part No.	Pure Plus Grade 125 mL Part No.
Aluminum	Al	2% HNO ₃	N9300184	N9300100	N9303726
Antimony	Sb	2% HNO ₃		N9300101	
Antimony	Sb	H ₂ O/0.6% Tart. Acid/Tr. HNO ₃	N9300207		N9303750
Arsenic	As	2% HNO ₃	N9300180	N9300102	N9303727
Barium	Ba	2% HNO ₃	N9300181	N9300103	N9303729
Beryllium	Be	2% HNO ₃	N9300172	N9300104	N9303730
Bismuth	Bi	10% HNO ₃	N9303761	N9300105	N9303731
Boron	B	H ₂ O	N9303760	N9300106	
Cadmium	Cd	2% HNO ₃	N9300176	N9300107	N9303734
Calcium	Ca	2% HNO ₃	N9303763	N9300108	N9303733
Carbon	C	H ₂ O	N9303762	N9300109	
Cerium	Ce	2% HNO ₃	N9303765	N9300110	
Cesium	Cs	2% HNO ₃	N9303767	N9300111	
Chromium	Cr	2% HNO ₃	N9300173	N9300112	N9303736
Cobalt	Co	2% HNO ₃	N9303766	N9300113	N9303735
Copper	Cu	2% HNO ₃	N9300183	N9300114	N9303737
Dysprosium	Dy	2% HNO ₃	N9303768	N9300115	
Erbium	Er	2% HNO ₃	N9303769	N9300116	
Europium	Eu	2% HNO ₃	N9303770	N9300117	
Gadolinium	Gd	2% HNO ₃	N9303773	N9300118	
Gallium	Ga	2% HNO ₃	N9303772	N9300119	
Germanium	Ge	H ₂ O/0.16% F-	N9303774	N9300120	
Gold	Au	10% HCl	N9303759	N9300121	
Hafnium	Hf	2% HCl	N9303775	N9300122	
Holmium	Ho	2% HNO ₃	N9303776	N9300123	
Indium	In	2% HNO ₃	N9303777	N9300124	
Iridium	Ir	10% HCl	N9303778	N9300125	
Iron	Fe	2% HNO ₃	N9303771	N9300126	N9303738
Lanthanum	La	2% HNO ₃	N9303780	N9300127	
Lead	Pb	2% HNO ₃	N9300175	N9300128	N9303748
Lithium	Li	2% HNO ₃	N9303781	N9300129	
Lutetium	Lu	2% HNO ₃	N9303782	N9300130	
Magnesium	Mg	2% HNO ₃	N9300179	N9300131	N9303743
Manganese	Mn	2% HNO ₃	N9303783	N9300132	N9303744
Mercury	Hg	10% HNO ₃	N9300174	N9300133	N9303740
Molybdenum	Mo	H ₂ O	N9303784	N9300134	N9303745

Element	Symbol	Matrix	Pure Grade 125 mL Part No.	Pure Grade 500 mL Part No.	Pure Plus Grade 125 mL Part No.
Neodymium	Nd	2% HNO ₃	N9303787	N9300135	
Nickel	Ni	2% HNO ₃	N9300177	N9300136	N9303747
Niobium	Nb	H ₂ O/0.4% HF	N9303786	N9300137	
Palladium	Pd	10% HCl	N9303789	N9300138	
Phosphorus	P	H ₂ O	N9303788	N9300139	
Platinum	Pt	10% HCl	N9303791	N9300140	
Potassium	K	2% HNO ₃	N9303779	N9300141	N9303742
Praseodymium	Pr	2% HNO ₃	N9303790	N9300142	
Rhenium	Re	H ₂ O	N9303793	N9300143	
Rhodium	Rh	10% HCl	N9303794	N9300144	
Rubidium	Rb	2% HNO ₃	N9303792	N9300145	
Ruthenium	Ru	10% HCl	N9303795	N9300146	
Samarium	Sm	2% HNO ₃	N9303800	N9300147	
Scandium	Sc	2% HNO ₃	N9303798	N9300148	
Selenium	Se	2% HNO ₃	N9300182	N9300149	N9303752
Silicon	Si	H ₂ O/0.4% F-	N9303799	N9300150	
Silver	Ag	2% HNO ₃	N9300171	N9300151	N9303725
Sodium	Na	2% HNO ₃	N9303785	N9300152	N9303746
Strontium	Sr	2% HNO ₃	N9303802	N9300153	
Sulfur	S	H ₂ O	N9303796	N9300154	
Tantalum	Ta	H ₂ O/0.8% HF	N9303803	N9300155	
Tellurium	Te	10% HNO ₃	N9304385	N9304384	
Terbium	Tb	2% HNO ₃	N9303804	N9300157	
Tin	Sn	20% HCl	N9303801	N9300161	
Tin	Sn	1% HNO ₃ /1% HF			N9303838
Thallium	Tl	2% HNO ₃	N9300170	N9300158	N9303755
Thorium	Th	2% HNO ₃			N9303842
Thulium	Tm	2% HNO ₃	N9303807	N9300160	
Titanium	Ti	H ₂ O/0.24% F-	N9303806	N9300162	N9303754
Tungsten	W	H ₂ O	N9303809	N9300163	
Uranium	U	2% HNO ₃			N9303844
Vanadium	V	2% HNO ₃	N9303808	N9300165	N9303756
Ytterbium	Yb	2% HNO ₃	N9303811	N9300166	
Yttrium	Y	2% HNO ₃	N9303810	N9300167	
Zinc	Zn	2% HNO ₃	N9300178	N9300168	N9303758
Zirconium	Zr	2% HNO ₃	N9303812	N9300169	

Single-Element Pure Plus ICP-MS Grade Standards – 1 µg/mL

Element	Symbol	Matrix	Pure Plus Grade 125 mL Part No.
Aluminum	Al	2% HCl	N9304200
Aluminum	Al	2% HNO ₃	N9304201
Antimony	Sb	5% HCl	N9304202
Antimony	Sb	H ₂ O/Tr. HNO ₃ /Tr. Tart	N9304203
Arsenic	As	2% HCl	N9304204
Arsenic	As	2% HNO ₃	N9304205
Barium	Ba	2% HCl	N9304206
Barium	Ba	2% HNO ₃	N9304207
Beryllium	Be	2% HNO ₃	N9304208
Bismuth	Bi	2% HNO ₃	N9304209
Boron	B	H ₂ O	N9304210
Cadmium	Cd	2% HCl	N9304211
Cadmium	Cd	2% HNO ₃	N9304212
Calcium	Ca	2% HCl	N9304213
Calcium	Ca	2% HNO ₃	N9304214
Carbon	C	H ₂ O	N9304215
Cerium	Ce	2% HNO ₃	N9304216
Cesium	Cs	2% HNO ₃	N9304217
Chromium	Cr	2% HCl	N9304218
Chromium	Cr	5% HNO ₃	N9304219
Chromium	Cr	H ₂ O	N9304220
Cobalt	Co	2% HCl	N9304221
Cobalt	Co	2% HNO ₃	N9304222
Copper	Cu	2% HCl	N9304223
Copper	Cu	2% HNO ₃	N9304224
Dysprosium	Dy	2% HNO ₃	N9304225
Erbium	Er	2% HNO ₃	N9304226
Europium	Eu	2% HNO ₃	N9304227
Gadolinium	Gd	2% HNO ₃	N9304228
Gallium	Ga	2% HNO ₃	N9304229
Germanium	Ge	H ₂ O	N9304230
Gold	Au	1% HNO ₃ /3% HCL	N9304231
Hafnium	Hf	2% HCl	N9304232
Holmium	Ho	2% HNO ₃	N9304233
Indium	In	2% HNO ₃	N9304234
Iridium	Ir	2% HCl	N9304235
Iron	Fe	2% HCl	N9304236
Iron	Fe	2% HNO ₃	N9304237
Lanthanum	La	2% HNO ₃	N9304238
Lead	Pb	2% HNO ₃	N9304239
Lithium	Li	2% HCl	N9304240
Lithium	Li	2% HNO ₃	N9304241
Lutetium	Lu	2% HNO ₃	N9304242
Magnesium	Mg	2% HCl	N9304243
Magnesium	Mg	2% HNO ₃	N9304244
Manganese	Mn	2% HNO ₃	N9304245

Element	Symbol	Matrix	Pure Plus Grade 125 mL Part No.
Mercury	Hg	2% HNO ₃	N9304246
Potassium	K	2% HCl	N9304247
Potassium	K	2% HNO ₃	N9304248
Molybdenum	Mo	H ₂ O	N9304249
Niobium	Nb	H ₂ O/tr HF	N9304250
Neodymium	Nd	2% HNO ₃	N9304251
Nickel	Ni	2% HNO ₃	N9304252
Palladium	Pd	2% HCl	N9304253
Phosphorus	P	H ₂ O	N9304254
Platinum	Pt	2% HCl	N9304255
Praseodymium	Pr	2% HNO ₃	N9304256
Rubidium	Rb	2% HNO ₃	N9304257
Rhenium	Re	H ₂ O	N9304258
Rhodium	Rh	2% HCl	N9304259
Ruthenium	Ru	2% HCl	N9304260
Samarium	Sm	2% HNO ₃	N9304261
Scandium	Sc	2% HNO ₃	N9304262
Selenium	Se	2% HNO ₃	N9304263
Silicon	Si	H ₂ O/Tr. F-	N9304264
Silver	Ag	2% HNO ₃	N9304265
Sodium	Na	2% HCl	N9304266
Sodium	Na	2% HNO ₃	N9304267
Strontium	Sr	2% HCl	N9304268
Strontium	Sr	2% HNO ₃	N9304269
Sulfur	S	H ₂ O	N9304270
Tantalum	Ta	H ₂ O/tr HF	N9304271
Tellurium	Te	5% HCl	N9304272
Tellurium	Te	5% HNO ₃	N9304273
Terbium	Tb	2% HNO ₃	N9304274
Thallium	Tl	2% HNO ₃	N9304275
Thorium	Th	2% HNO ₃	N9304276
Thulium	Tm	2% HNO ₃	N9304277
Tin	Sn	5% HCl	N9304278
Tin	Sn	2% HNO ₃ /tr HF	N9304279
Titanium	Ti	H ₂ O/tr HF	N9304280
Tungsten	W	2% HNO ₃ /tr HF	N9304281
Tungsten	W	H ₂ O	N9304282
Uranium	U	2% HNO ₃	N9304283
Vanadium	V	2% HCl	N9304284
Vanadium	V	2% HNO ₃	N9304285
Ytterbium	Yb	2% HNO ₃	N9304286
Yttrium	Y	2% HNO ₃	N9304287
Zinc	Zn	2% HCl	N9304288
Zinc	Zn	2% HNO ₃	N9304289
Zirconium	Zr	2% HCl	N9304290
Zirconium	Zr	2% HNO ₃	N9304291

Single-Element Pure Plus ICP-MS Grade Standards – 10 µg/mL

Element	Symbol	Matrix	Pure Plus Grade 125 mL Part No.
Bismuth	Bi	2% HNO ₃	N9303731
Germanium	Ge	H ₂ O tr HF	N9303739
Indium	In	2% HNO ₃	N9303741
Rhodium	Rh	2% HCl	N9303749
Scandium	Sc	2% HNO ₃	N9303751
Terbium	Tb	2% HNO ₃	N9303753
Yttrium	Y	2% HNO ₃	N9303757

Single-Element Pure Standards – 10,000 µg/mL

Element	Symbol	Matrix	Pure Plus Grade 125 mL Part No.	Pure Grade 500 mL Part No.
Aluminum	Al	5% HNO ₃	N9304111	N9304110
Antimony	Sb	20% HCl		N9304292
Antimony	Sb	H ₂ O/Tartaric Acid/Tr HNO ₃	N9304293	N9304294
Arsenic	As	5% HNO ₃	N9304295	N9304296
Barium	Ba	5% HNO ₃	N9304297	N9304298
Beryllium	Be	5% HNO ₃	N9304299	N9304300
Boron	B	H ₂ O	N9304301	N9304302
Cadmium	Cd	5% HNO ₃	N9304303	N9304304
Calcium	Ca	5% HNO ₃	N0691581	N9303764
Cerium	Ce	5% HNO ₃	N9304305	N9304306
Cesium	Cs	5% HNO ₃	N9304307	N9304308
Chromium	Cr	5% HNO ₃	N9304309	N9304311
Chromium	Cr	5% HCl		N9304310
Chromium	Cr	H ₂ O		N9304312
Cobalt	Co	5% HNO ₃	N9304313	N9304314
Copper	Cu	5% HNO ₃	N9304112	N9300283
Erbium	Er	5% HNO ₃		N9304315
Gadolinium	Gd	5% HNO ₃	N9304316	N9304317
Iron	Fe	5% HNO ₃	N9304113	N9307117
Lanthanum	La	5% HNO ₃	N9304318	N9304319
Lead	Pb	5% HNO ₃	N9304321	N9304320
Lithium	Li	5% HCl		N9304322
Lithium	Li	5% HNO ₃	N9304323	N9304324
Magnesium	Mg	5% HNO ₃	N0691745	N9304114
Manganese	Mn	5% HNO ₃	N9304115	
Mercury	Hg	10% HNO ₃	N9304325	N9304326
Molybdenum	Mo	H ₂ O/0.4% HF	N9304327	N9304328
Nickel	Ni	5% HNO ₃	N9304117	N9304116
Niobium	Nb	H ₂ O/0.4% HF	N9304330	N9304329
Phosphorus	P	H ₂ O	N9304119	N9304118
Potassium	K	5% HNO ₃	N9304121	N9304120
Rubidium	Rb	2% HNO ₃	N9304331	N9304332
Scandium	Sc	5% HNO ₃	N9304333	N9304334
Selenium	Se	5% HNO ₃	N9304335	N9304336

Pure Grade Standards for AA and ICP-OES

- Analyzed by ICP-OES
- Analyzed by Classical Wet Assay
- 32 trace impurities analyzed by ICP-MS of the final solution and reported on the certificate
- Impurities reported at ppm level
- All Standards are prepared and certified under ISO Guide 34 and ISO 17025



Pure Plus Grade Standards for ICP-MS

- Analyzed by ICP-OES
- Analyzed by Classical Wet Assay
- 67 trace impurities analyzed by ICP-MS of the final solution and reported on the certificate
- Impurities reported at ppb level
- All Standards are prepared and certified under ISO Guide 34 and ISO 17025

Element	Symbol	Matrix	Pure Plus Grade 125 mL Part No.	Pure Grade 500 mL Part No.
Silicon	Si	H ₂ O/4% F-	N9304122	
Silver	Ag	5% HNO ₃	N9304337	N9304338
Sodium	Na	5% HNO ₃	N9304124	N9304123
Strontium	Sr	5% HCl		N9304339
Strontium	Sr	5% HNO ₃	N9304340	N9304341
Sulfur	S	H ₂ O	N9304126	N9304125
Tantalum	Ta	H ₂ O		N9304342
Tantalum	Ta	H ₂ O/0.8% HF	N9304343	
Tin	Sn	2%/HNO ₃ /2% HF		N9304344
Tin	Sn	20% HCl	N9304345	N9304346
Titanium	Ti	40% HCl		N9304347
Titanium	Ti	H ₂ O/2.4% F-	N9304348	N9304349
Tungsten	W	2% HNO ₃ /5% HF		N9304350
Tungsten	W	H ₂ O	N9304351	N9304352
Uranium	U	5% HNO ₃	N9304353	N9304354
Vanadium	V	15% HCl		N9304355
Vanadium	V	15% HNO ₃	N9304356	N9304357
Yttrium	Y	5% HNO ₃	N9304128	N9304127
Zinc	Zn	5% HNO ₃	N9304129	
Zirconium	Zr	10% HCl		N9304358
Zirconium	Zr	5% HNO ₃	N9304359	N9304360

Custom Single and Multi-element Standards for Inorganic Analysis

We understand how important Standards are to your laboratory. That's why we've expanded PerkinElmer Pure and Pure Plus Standards to include custom Standards. We offer a complete selection of stock, single and multi-element, atomic spectroscopy aqueous Standards, and now provide single-element and multi-element custom Standards, prepared to meet your exact specifications. Each solution is supplied with a comprehensive Certificate of Analysis to provide you with the quality and reliability you expect, every time.



Design your own custom standard to fit your laboratory needs.

Choose PerkinElmer as your Standards provider and request your quote today. For a complete selection of Pure Atomic Spectroscopy Standards, please visit www.perkinelmer.com/standards

Custom Standards are now available in North America and select countries in Europe.



You can order Custom Standards online by visiting www.perkinelmer.com/customstandards or over the phone by calling your local PerkinElmer sales office.

Matrix Modifiers and AA Test Mixes

We offer standards specifically for your Atomic Absorption (AA) instrument. From mixed standards to reagents, we have what you need for your AA analysis.



Matrix Modifiers for Graphite Furnace AA

Matrix	Content	Volume	Part No.
Mg(NO ₃) ₂	1% Mg (NO ₃) ₂ (as nitrate)	100 mL	B0190634
Pd	1% Pd (as nitrate)	50 mL	B0190635
NH ₄ H ₂ PO ₄	10% NH ₄ H ₂ PO ₄	100 mL	N9303445

GFAAS Mixed Standard

Matrix	Content	Volume	Part No.
5% HNO ₃ with trace HF	100 µg/mL: Al, As, Pb, Sb, Se, Tl 50 µg/mL: Ba, Co, Cu, Ni 20 µg/mL: Cr, Fe, Mn 10 µg/mL: Ag 5 µg/mL: Be, Cd	125 mL	N9300244

AA Test Mix

Matrix	Content	Volume	Part No.
2% HCl	50 µg/mL: Ca, Cr, Cu, Fe, Ni 20 µg/mL: K 10 µg/mL: Na, Zn	125 mL	02900540

Reagents

Description	Volume	Part No.
Triton® X-100 Wetting Agent	100 mL	N9300260
Antifoaming Silicone Emulsion	500 mL	B0507226
Glycerol	1 L	B3141064

Multi-Element Standards

Our go-to multi-element standards are suitable for your daily laboratory needs. Spanning across a wide range of applications and methods, you'll find the right solution to help you achieve laboratory success.

Multi-Element Standards

Matrix	Content	Volume	Part No.
Multi-Element Solution			
5% HNO ₃	1,000 µg/mL: Al, Ca, Fe, Mg	500 mL	N9307113
Multi-Element Solution			
5% HNO ₃	1,000 µg/mL: K, Na, P	500 mL	N9307114
Multi-Element Solution			
2-5% HNO ₃	1,000 µg/mL: Mo, Sb, Sn, W, Zr	500 mL	N9307115
Multi-Element Solution			
5% HNO ₃	1,000 µg/mL: As, Ba, Be, Cd, Cr, Co, Cu, La, Pb, Li, Mn, Ni, Sc, Sr, V, Y, Zn	500 mL	N9307116
5% HNO ₃ /trace HF	100 µg/mL: Ge, Mo, S, Si, Ti	125 mL	N9308541
20% HCl/1% HNO ₃	100 µg/mL: Au, Cr, Sb, Sn, Te	125 mL	N9308542
5% HNO ₃	100 µg/mL: Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, K, Li, Mg, Mn, Na, Ni, P, Pb, Se, Sr, Tl, U, V, Zn	125 mL	N9308543
Multi-Element Solution 1			
2% HNO ₃	10 µg/mL: Be, Bi, Ce, Co, In, Mg, Ni, Pb, U	125 mL	N9300231
Multi-Element Solution 2			
5% HNO ₃	10 µg/mL: Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, Y, Yb	125 mL	N9300232
Multi-Element Solution 3			
5% HNO ₃	10 µg/mL: Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Hg*, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, U, V, Zn <small>*Supplied in separate bottle.</small>	125 mL	N9300233
Multi-Element Solution 3 without Mercury			
		125 mL	N9301720
Multi-Element Solution 4			
10% HCl/1% HNO ₃	10 µg/mL: Au, Hf, Ir, Pd, Pt, Rh, Ru, Sb, Sn, Te	125 mL	N9300234
Multi-Element Solution 5			
H ₂ O/trace HF/trace HNO ₃	10 µg/mL: B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr	125 mL	N9300235
Set of Multi-Element Solutions			N9300236
Includes: (1 bottle of each)			
	Multi-Element Solution 2	125 mL	N9300232
	Multi-Element Solution 3	125 mL	N9300233
	Multi-Element Solution 4	125 mL	N9300234
	Multi-Element Solution 5	125 mL	N9300235
	Water Blank	125 mL	N9303814
	Hydrochloric Acid Blank	125 mL	N9300238
	2% Nitric Acid Blank	125 mL	N9300239

Matrix	Content	Volume	Part No.
PerkinElmer Pure I			
5% HNO ₃	400 µg/mL: Tl 200 µg/mL: Bi, In, Pb 150 µg/mL: Ga 100 µg/mL: Al 50 µg/mL: Ag, Ni 25 µg/mL: Cr 20 µg/mL: Cd, Co, Cu, Zn 15 µg/mL: B, Fe 5 µg/mL: Ba, Mn 1 µg/mL: Be, Sr	125 mL	N9303940
PerkinElmer Pure IV (Quality Control Standard 23)			
10% HNO ₃	1,000 µg/mL: Ag, Al, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Sr, Tl, Zn	125 mL	N9303941
PerkinElmer Pure VIII			
5% HNO ₃	100 µg/mL: Al, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Na, Ni, Pb, Se, Sr, Te, Ti, Zn	125 mL	N9303942
PerkinElmer Pure IX			
5% HNO ₃	100 µg/mL: As, Be, Pb, Cd, Cr, Ni, Se, Tl	125 mL	N9303943
PerkinElmer Pure X			
2% HNO ₃	35,000 µg/L: Ca 15,000 µg/L: Mg 8,000 µg/L: Na 3,000 µg/L: K 100 µg/L: B, Fe, Mo, Sr 50 µg/L: As, Ba, Ni, V, Zn 30 µg/L: Mn 25 µg/L: Co, Pb 20 µg/L: Be, Cd, Cr, Cu 10 µg/L: Bi, Se, Tl	125 mL	N9303944
8 µg/mL Mercury in 5% HNO₃			
5% HNO ₃	8 µg/mL: Hg	125 mL	N9303954
PerkinElmer Pure XI			
5% HNO ₃	2,500 µg/mL: Zn 900 µg/mL: Cr, Pb 800 µg/mL: Cu 200 µg/mL: Ni 10 µg/mL: Cd	125 mL	N9303945
5 µg/mL Mercury in 5% HNO₃			
5% HNO ₃	5 µg/mL: Hg	125 mL	N9303949
PerkinElmer Pure XIII			
5% HNO ₃	500 µg/mL: Al 250 µg/mL: V 100 µg/mL: As, Be, Co, Cr, Cu, Fe, Mn, Ni, Pb, Zn 25 µg/mL: Cd, Se	125 mL	N9303946

Multi-Element Standards Continued

Matrix	Content	Volume	Part No.
PerkinElmer Pure XVI (Quality Control Standard, 21 Elements)			
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	125 mL	N9300281
PerkinElmer Pure XVII			
15% HCl/trace HF	100 µg/mL: Hf, Ir, Sb, Sn, Ta, Tl, Zr	125 mL	N9303948
PerkinElmer Pure VI			
1 mol/L HNO ₃ /trace Tartaric Acid	10 µg/mL: Ag, Al, Ba, Bi, Cd, Co, Cr, Cu, Ga, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Rb, Sr, Te, Tl, U, V, 100 µg/mL: As, B, Be, Fe, Se, Zn, 1000 µg/mL: Ca	125 mL	N9307741
Multi-Element Standard			
10% HNO ₃	100 µg/mL: As, Ba, Ca, Cd, Be, Bi, Ce, Cs, Cr, Co, Cu, Dy, Er, Eu, Gd, Ga, Ho, In, La, Pb, Li, Lu, Mn, Nd, Ni, Pr, Rb, Sm, Sc, Se, Sr, Tb, Tl, Th, Tm, U, V, Yb, Y, Zn	125 mL	N9308544
Multi-Element Standard A			
5% HNO ₃ /1% HF/trace Tartaric Acid	100 µg/mL: Ge, Hf, Mo, Nb, Sb, Sn, Ta, Te, Ti, W, Zr	125 mL	N9308545
Multi-Element Standard B			
10% HNO ₃	10,000 µg/mL: Ca, K, Mg, Na, P	125 mL	N9308546
Multi-Element Standard C			
5% HNO ₃	10,000 µg/mL: Al, Fe	125 mL	N9308547
Multi-Element Standard D			
5% HCl	10 µg/mL: Au, Pd, Pt	125 mL	N9308548
Multi-Element Standard E			
5% HNO ₃	10 µg/mL: Ag, Hg	125 mL	N9308549

Quality Control Standards

Matrix	Content	Volume	Part No.
Quality Control Standard 1A			
5% HNO ₃ /trace Tartaric Acid HF	1,000 µg/mL: Sb, Ti	125 mL	N9304130
Quality Control Standard 1B			
10% HNO ₃	1,000 µg/mL: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Se, Sr, Ti, Tl, V, Zn	125 mL	N9304131
Quality Control Standard, 21 Elements Pure (Pure XVI)			
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	125 mL	N9300281
Quality Control Standard, 21 Elements Pure Plus			
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn	125 mL	N9303837
Quality Control Standard, 7A Elements			
5% HNO ₃ /trace HF	1,000 µg/mL: K 500 µg/mL: Si 100 µg/mL: Al, B, Ba, Na 50 µg/mL: Ag	125 mL	N9300280

Mixed Calibration Standards

Matrix	Content	Volume	Part No.
Mixed Calibration Standard			
2% HNO ₃	50 µg/mL: As, K 10 µg/mL: La, Li, Mn, Ni, Sr, Zn 1 µg/mL: Ba, Mg	500 mL	N0691579
Mixed Calibration Standard 1			
2% HNO ₃	500 µg/mL: Pb 200 µg/mL: Se 150 µg/mL: Cd, Zn 100 µg/mL: Mn 50 µg/mL: Be	125 mL	N9300200
Mixed Calibration Standard 2			
5% HNO ₃	10,000 µg/mL: Fe 100 µg/mL: Ba, Co, Cu, V	125 mL	N9300201
Mixed Calibration Standard 3			
2% HNO ₃ /Tr. HF	500 µg/mL: As 100 µg/mL: Mo, Si	125 mL	N9300202
Mixed Calibration Standard 4			
5% HNO ₃	1,000 µg/mL: Ca 400 µg/mL: K 200 µg/mL: Al, Na 20 µg/mL: Cr, Ni	125 mL	N9300203
Mixed Calibration Standard 5			
5% HNO ₃ /trace Tartaric Acid/trace HF	1,000 µg/mL: Mg 200 µg/mL: Sb, Tl 100 µg/mL: B 50 µg/mL: Ag	125 mL	N9300204

Spike Standards

Matrix	Content	Volume	Part No.
Spike Sample Standard I			
5% HNO ₃ /trace Tartaric Acid/trace HF	200 µg/mL: Al, As, Ba, Se, Tl 100 µg/mL: Fe 50 µg/mL: Co, Mn, Ni, Pb, Sb, V, Zn 25 µg/mL: Cu 20 µg/mL: Cr 5 µg/mL: Ag, Be, Cd	125 mL	N9300230
Spike Sample Standard I (Water)			
5% HNO ₃ /trace Tartaric Acid/trace HF	500 µg/mL: Fe 250 µg/mL: Ba, Zn 100 µg/mL: Co, Cr, Cu, Mn, Ni, Sb, V 50 µg/mL: As, Pb 25 µg/mL: Ag, Be, Cd, Se, Tl	125 mL	N9303839
Spike Sample Standard 2 (Soil)			
5% HNO ₃ /trace Tartaric Acid/trace HF	250 µg/mL: Ba, Cr, Cu, Zn 150 µg/mL: V 125 µg/mL: Ni 100 µg/mL: Co, Pb, Sb 50 µg/mL: As, Cd 25 µg/mL: Ag, Be, Se, Tl	125 mL	N9303840
Spike Sample Standard 3 (for ILM 05.2)			
5% HNO ₃ /trace Tartaric Acid/trace HF	200 µg/mL: Al, Ba 50 µg/mL: Co, Mn, Ni, V, Zn 25 µg/mL: Cu 20 µg/mL: Cr 10 µg/mL: Sb 5 µg/mL: Ag, Be, Cd, Tl 4 µg/mL: As 2 µg/mL: Pb 1 µg/mL: Se	125 mL	N9303841

Environmental Analysis Standards

We offer a variety of environmental analysis standards for all your environmental application needs.

Environmental Method Sets

Matrix	Content	Volume	Part No.
Environmental Standard Kit for NexION Standard Mode Includes 1 bottle of each:			N9307118
5% HNO ₃	1,000 µg/mL: Ca, K, Mg, Na	125 mL	N9307805
5% HNO ₃	1,000 µg/mL: Al, Fe	125 mL	N9307806
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
2% HNO ₃	100 µg/mL: B, Th, U	125 mL	N9307807
5% HNO ₃	10 µg/mL: Hg	125 mL	N9300253
2% HNO ₃	50 µg/mL: Sc, Ge 10 µg/mL: Rh, In, Tb	125 mL	N9308591
Environmental Standard Kit for NexION KED/DRC Mode Includes 1 bottle of each:			N9307119
5% HNO ₃	1,000 µg/mL: Ca, K, Mg, Na	125 mL	N9307805
5% HNO ₃	1,000 µg/mL: Al, Fe	125 mL	N9307806
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
2% HNO ₃	100 µg/mL: B, Th, U	125 mL	N9307807
5% HNO ₃	10 µg/mL: Hg	125 mL	N9300253
2% HNO ₃	100 µg/mL: Sc 50 µg/mL: Ge 1 µg/mL: Rh, In, Tb	125 mL	N9308592
Environmental Standard Kit for ELAN non-DRC/Standard ICP-MS Instruments Includes 1 bottle of each:			N9307111
5% HNO ₃	1,000 µg/mL: Ca, K, Mg, Na	125 mL	N9307805
5% HNO ₃	1,000 µg/mL: Al, Fe	125 mL	N9307806
	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
2% HNO ₃	100 µg/mL: B, Th, U	125 mL	N9307807
5% HNO ₃	10 µg/mL: Hg	125 mL	N9300253
Internal Standard Mix			
5% HNO ₃ /trace HCL	50 µg/mL: Sc 20 µg/mL: Ge 10 µg/mL: In, Ir, Li6, Rh, Tb, Y	125 mL	N9307808

Matrix	Content	Volume	Part No.
Environmental Standard Kit for ELAN DRC Instruments Includes 1 bottle of each:			N9307112
5% HNO ₃	1,000 µg/mL: Ca, K, Mg, Na	125 mL	N9307805
5% HNO ₃	1,000 µg/mL: Al, Fe	125 mL	N9307806
5% HNO ₃ /trace Tartaric acid/trace HF	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
2% HNO ₃	100 µg/mL: B, Th, U	125 mL	N9307807
5% HNO ₃	10 µg/mL: Hg	125 mL	N9300253
5% HNO ₃ /trace HCl	Internal Standard Mix 200 µg/mL: Sc 20 µg/mL: Ga 10 µg/mL: In, Ir, Rh, Tm	125 mL	N9307738
Contract Lab Program Modification Set Includes 1 bottle of each:			N9307103
2% HNO ₃ /5% HCl	10 µg/mL: Ba, Be, Ce, Co, In, Li, Mg, Pb, Rh, Tl, U, Y	125 mL	N9303843
2% HNO ₃ /trace Tartaric Acid	20 µg/mL: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Th, Tl, U, V, Zn	125 mL	N9303816
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
5% HNO ₃ /trace Tartaric Acid	500 µg/mL: Ca, K, Mg, Na 20 µg/mL: Al, Ba 10 µg/mL: Fe 6 µg/mL: Sb 5 µg/mL: Co, V 4 µg/mL: Ni 2.5 µg/mL: Cu 2 µg/mL: Zn 1.5 µg/mL: Mn 1 µg/mL: Ag, As, Cr, Tl 0.5 µg/mL: Be, Cd, Se 0.3 µg/mL: Pb	125 mL	N9303819
2% HNO ₃ /trace Tartaric Acid/trace HF	10 µg/mL: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Sb, Se, Tl, V, Zn	125 mL	N9303821
5% HNO ₃	10 µg/mL: Hg	125 mL	N9300253
2% HNO ₃	200 µg/mL: Ca, Fe, K, Mg, Na	125 mL	N9303822
2% HNO ₃	10 µg/mL: Mo, Th, U	125 mL	N9303823
2% HNO ₃ /trace HF	10 µg/mL: Mo, Sn, Sr, Ti	125 mL	N9303824
5% HNO ₃ /trace HF	21,215 µg/mL: Cl 3,000 µg/mL: Ca 2,500 µg/mL: Fe, Na 2,000 µg/mL: C 1,000 µg/mL: Al, K, Mg, P, S 20 µg/mL: Mo, Ti	125 mL	N9303827
2% HNO ₃	20 µg/mL: Co, Cr, Cu, Mn, Ni, V 10 µg/mL: As, Cd, Se, Zn 5 µg/mL: Ag	125 mL	N9303829

REFERENCE MATERIALS

Matrix	Content	Volume	Part No.
5% HNO ₃ /trace Tartaric Acid/trace HF	500 µg/mL: Fe 250 µg/mL: Ba, Zn 100 µg/mL: Co, Cr, Cu, Mn, Ni, Sb, V 50 µg/mL: As, Pb 25 µg/mL: Ag, Be, Cd, Se, Tl	125 mL	N9303839
5% HNO ₃ /trace Tartaric Acid/trace HF	250 µg/mL: Ba, Cr, Cu, Zn 150 µg/mL: V 125 µg/mL: Ni 100 µg/mL: Co, Pb, Sb 50 µg/mL: As, Cd 5 µg/mL: Ag, Be, Se, Tl	125 mL	N9303840
5% HNO ₃	1,000 µg/mL: Al, Ca, Fe, K, Mg, Na 20 µg/mL: Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Se, Tl, V, Zn	125 mL	N9303835
H ₂ O/trace HF	7,200 µg/mL: Cl 2,000 µg/mL: C 1,000 µg/mL: P, S 20 µg/mL: Mo, Sb, Ti	125 mL	N9303836
Calibration Standards Set for Method 6010 Includes 1 bottle of each:			N9307104
5% HNO ₃	5,000 µg/mL: Ca, K, Mg, Na	125 mL	N9300218
5% HNO ₃	400 µg/mL: Ni 200 µg/mL: Zn 150 µg/mL: Mn 100 µg/mL: Ag, Cr	125 mL	N9300219
5% HNO ₃	2,000 µg/mL: Al, Ba 1,000 µg/mL: Fe 500 µg/mL: Co, V 250 µg/mL: Cu 50 µg/mL: Be	125 mL	N9300220
5% HNO ₃	100 µg/mL: As, Tl 50 µg/mL: Cd, Pb, Se	125 mL	N9300221
H ₂ O/trace HF	10 µg/mL: B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr	125 mL	N9300235
2% HNO ₃	1,000 µg/mL: Li	500 mL	N9300129
2% HNO ₃	1,000 µg/mL: Sb	500 mL	N9300101
2% HNO ₃	1,000 µg/mL: Sr	500 mL	N9300153
20% HCl	1,000 µg/mL: Sn	500 mL	N9300161
2% HNO ₃	1,000 µg/mL: Cr	500 mL	N9300112
2% HNO ₃	1,000 µg/mL: Cu	500 mL	N9300114
2% HNO ₃	1,000 µg/mL: Mn	500 mL	N9300132
2% HNO ₃	1,000 µg/mL: Ni	500 mL	N9300136
H ₂ O/tr HF	1,000 µg/mL: Ti	500 mL	N9300162
2% HNO ₃	1,000 µg/mL: V	500 mL	N9300165
2% HNO ₃	1,000 µg/mL: Al	500 mL	N9300100
2% HNO ₃	1,000 µg/mL: Ca	500 mL	N9300108
2% HNO ₃	1,000 µg/mL: Fe	500 mL	N9300126
2% HNO ₃	1,000 µg/mL: Mg	500 mL	N9300131
Internal Standard Set for Method 6010 and 200.7 Includes 1 bottle of each:			N9307105
2% HNO ₃	1,000 µg/mL: Y	500 mL	N9300167
2% HNO ₃	1,000 µg/mL: Sc	500 mL	N9300148

Matrix	Content	Volume	Part No.
Interference Solutions for Method 6010 Includes 1 bottle of each:			N9307106
2% HNO ₃	1,000 µg/mL: Al	125 mL	N9300184
2% HNO ₃	1,000 µg/mL: Ca	500 mL	N9300108
2% HNO ₃	1,000 µg/mL: Mg	125 mL	N9300179
2% HNO ₃	1,000 µg/mL: Fe	500 mL	N9300126
2% HNO ₃	1,000 µg/mL: K	500 mL	N9300141
2% HNO ₃	1,000 µg/mL: Na	500 mL	N9300152
2% HNO ₃	1,000 µg/mL: Cr	500 mL	N9300112
2% HNO ₃	1,000 µg/mL: Cu	500 mL	N9300114
2% HNO ₃	1,000 µg/mL: Mn	500 mL	N9300132
2% HNO ₃	1,000 µg/mL: Ni	500 mL	N9300136
H ₂ O/trace HF	1,000 µg/mL: Ti	500 mL	N9300162
2% HNO ₃	1,000 µg/mL: V	500 mL	N9300165
5% HNO ₃	5,000 µg/mL: Al, Ca, Mg 2,000 µg/mL: Fe	500 mL	N9300226
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Cd, Ni, Zn 60 µg/mL: Sb 50 µg/mL: Ba, Be, Co, Cr, Cu, Mn, V 20 µg/mL: Ag 10 µg/mL: As, Tl 5 µg/mL: Pb, Se	125 mL	N9300227
5% HNO ₃	1,000 µg/mL: Cr, Cu, Mn, Ni, Ti, V	500 mL	N9300228
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Al, As, B, Mo, Na, Sb, Se, Tl 10 µg/mL: Ca, Fe, Mg, Si	125 mL	N9300229
Calibration Standards for Method 200.7 Includes 1 bottle of each:			N9307107
5% HNO ₃	5,000 µg/mL: Ca, K, Mg, Na	125 mL	N9300218
5% HNO ₃	400 µg/mL: Ni 200 µg/mL: Zn 150 µg/mL: Mn 100 µg/mL: Ag, Cr	125 mL	N9300219
5% HNO ₃	2,000 µg/mL: Al, Ba 1,000 µg/mL: Fe 500 µg/mL: Co, V 250 µg/mL: Cu 50 µg/mL: Be	125 mL	N9300220
5% HNO ₃	100 µg/mL: As, Tl 50 µg/mL: Cd, Pb, Se	125 mL	N9300221
H ₂ O/trace HF	10 µg/mL: B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr	125 mL	N9300235
2% HNO ₃	1,000 µg/mL: Li	500 mL	N9300129
2% HNO ₃	1,000 µg/mL: Sb	500 mL	N9300101
2% HNO ₃	1,000 µg/mL: Sr	500 mL	N9300153
20% HCl	1,000 µg/mL: Sn	500 mL	N9300161
2% HNO ₃	1,000 µg/mL: Cr	500 mL	N9300112
2% HNO ₃	1,000 µg/mL: Cu	500 mL	N9300114
2% HNO ₃	1,000 µg/mL: Mn	500 mL	N9300132
2% HNO ₃	1,000 µg/mL: Ni	500 mL	N9300136
2% HNO ₃	1,000 µg/mL: V	500 mL	N9300165
2% HNO ₃	1,000 µg/mL: Al	500 mL	N9300100
2% HNO ₃	1,000 µg/mL: Ca	500 mL	N9300108
2% HNO ₃	1,000 µg/mL: Fe	500 mL	N9300126
2% HNO ₃	1,000 µg/mL: Mg	500 mL	N9300131
Interference Solutions for Method 200.7 Includes 1 bottle of each:			N9307108
2% HNO ₃	1,000 µg/mL: Al	125 mL	N9300184
2% HNO ₃	1,000 µg/mL: Ca	500 mL	N9300108
2% HNO ₃	1,000 µg/mL: Mg	125 mL	N9300179
2% HNO ₃	1,000 µg/mL: Fe	500 mL	N9300126
2% HNO ₃	1,000 µg/mL: K	500 mL	N9300141
2% HNO ₃	1,000 µg/mL: Na	500 mL	N9300152
5% HNO ₃	5,000 µg/mL: Al, Ca, Mg 2,000 µg/mL: Fe	500 mL	N9300226
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Cd, Ni, Zn 60 µg/mL: Sb 50 µg/mL: Ba, Be, Co, Cr, Cu, Mn, V 20 µg/mL: Ag 10 µg/mL: As, Tl 5 µg/mL: Pb, Se	125 mL	N9300227

Matrix	Content	Volume	Part No.
Environmental EPA Set 1 Includes 1 bottle of each:			N9307110
2% HNO ₃	500 µg/mL: Pb 200 µg/mL: Se 150 µg/mL: Cd, Zn 100 µg/mL: Mn 50 µg/mL: Be	125 mL	N9300200
5% HNO ₃	10,000 µg/mL: Fe 100 µg/mL: Ba, Co, Cu, V	125 mL	N9300201
2% HNO ₃ /trace HF	500 µg/mL: As 100 mg/mL: Mo, Si	125 mL	N9300202
5% HNO ₃	1,000 µg/mL: Ca 400 µg/mL: K 200 µg/mL: Al, Na 20 µg/mL: Cr, Ni	125 mL	N9300203
5% HNO ₃ /trace Tartaric Acid/ trace HF	1,000 µg/mL: Mg 200 µg/mL: Sb, Tl 100 µg/mL: B 50 µg/mL: Ag	125 mL	N9300204
5% HNO ₃	20,000 µg/mL: K 1,000 µg/mL: As, Pb, Tl 500 µg/mL: Se 300 µg/mL: Ag, Ba, Cd, Co, Cr, Cu, Ni, V, Zn 200 µg/mL: Mn 100 µg/mL: Be	125 mL	N9300205
5% HNO ₃	100 µg/mL: Hg	125 mL	N9300223
5% HNO ₃	6,000 µg/mL: Ca 5,000 µg/mL: Fe 3,000 µg/mL: Mgs 1,200 µg/mL: Al 1,000 µg/mL: Na	125 mL	N9300208
H ₂ O/trace HNO ₃ /0.6% Tartaric Acid	1,000 µg/mL: Sb	125 mL	N9300207
5% HNO ₃	ASTM® Type I Water	500 mL	N9307809
5% HCl	ASTM® Type I Water	500 mL	N9307810
Environmental EPA Set 2 Includes 1 bottle of each:			N9307109
2% HNO ₃	500 µg/mL: Pb 200 µg/mL: Se 150 µg/mL: Cd, Zn 100 µg/mL: Mn 50 µg/mL: Be	125 mL	N9300200
5% HNO ₃	10,000 µg/mL: Fe 100 µg/mL: Ba, Co, Cu, V	125 mL	N9300201
2% HNO ₃ /trace HF	500 µg/mL: As 100 µg/mL: Mo, Si	125 mL	N9300202
5% HNO ₃	1,000 µg/mL: Ca 400 µg/mL: K 200 µg/mL: Al, Na 20 µg/mL: Cr, Ni	125 mL	N9300203
5% HNO ₃ /trace Tartaric Acid/ trace HF	1,000 µg/mL: Mg 200 µg/mL: Sb, Tl 100 µg/mL: B 50 µg/mL: Ag	125 mL	N9300204
5% HNO ₃	20,000 µg/mL: K 1,000 µg/mL: As, Pb, Tl 500 µg/mL: Se 300 µg/mL: Ag, Ba, Cd, Co, Cr, Cu, Ni, V, Zn 200 µg/mL: Mn 100 µg/mL: Be	125 mL	N9300205

Matrix	Content	Volume	Part No.
5% HNO ₃	6,000 µg/mL: Ca 5,000 µg/mL: Fe 3,000 µg/mL: Mg 1,200 µg/mL: Al 1,000 µg/mL: Na	125 mL	N9300208
H ₂ O/trace HNO ₃ / 0.6% Tartaric Acid	1,000 µg/mL: Sb	125 mL	N9300207
5% HNO ₃	ASTM® Type I Water	500 mL	N9307809
5% HCl	ASTM® Type I Water	500 mL	N9307810

Water Pollutant Standards

Matrix	Content	Volume	Part No.
Primary Drinking Water Metals			
2% HNO ₃	100 µg/mL: Ba 10 µg/mL: Ag, As, Cr, Hg*, Pb 5 µg/mL: Cd, Se	125 mL	N9300216
Secondary Drinking Water Metals			
2% HNO ₃	500 µg/mL: Zn 100 µg/mL: Cu 30 µg/mL: Fe 5 µg/mL: Mn	125 mL	N9300217
Trace Metals I			
5% HNO ₃	500 µg/mL: Al 250 µg/mL: V 100 µg/mL: As, Be, Co, Cr, Cu, Fe Mn, Ni, Pb, Zn 25 µg/mL: Cd, Se 10 µg/mL: Hg*	125 mL	N9300211
Trace Metals II			
2% HNO ₃	20 µg/mL: Sb, Tl 10 µg/mL: Ag	125 mL	N9300212
Trace Metals III			
2% HNO ₃	500 µg/mL: Ba, Ca, Mo, Na 100 µg/mL: K, Mg	125 mL	N9300213
Alternate Metals I			
2% HNO ₃	20 µg/mL: Al, Fe, V 10 µg/mL: Co, Cu, Mn, Ni, Zn 5 µg/mL: Be, Sb, Tl	125 mL	N9300214
Alternate Metals II			
2% HNO ₃	500 µg/mL: Ca, Na 100 µg/mL: K, Mg	125 mL	N9300215
2% HNO ₃	500 µg/mL: Ca, Na 100 µg/mL: K, Mg	500 mL	N9303952

Toxicity Characteristic Leachate Procedure (TCLP) Standard

Matrix	Content	Volume	Part No.
TCLP Standard 1			
2% HNO ₃	500 µg/mL: Ba 25 µg/mL: Ag, As, Cr, Pb 100 µg/mL: Hg* 5 µg/mL: Cd, Se	500 mL	N9300241

*Supplied in separate bottle

Instrument Set-Up and Calibration Standards

From instrument installation to instrument calibration, we provide quality set-up, check and calibration standards to ensure instrument performance.

Instrument Calibration Standards

Matrix	Content	Volume	Part No.
Instrument Calibration Standard 1			
5% HNO ₃ /trace Tartaric Acid/trace HF	20 µg/mL: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Th, Tl, U, V, Zn	125 mL	N9303816
Instrument Calibration Standard 2			
5% HNO ₃ /trace Tartaric Acid/trace HF	100 µg/mL: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn	125 mL	N9301721
Instrument Calibration Standard 3			
5% HNO ₃	1,000 µg/mL: Ca, Fe, K, Mg, Na	125 mL	N9303818
Initial Calibration Verification Standard 1			
5% HNO ₃ /trace Tartaric Acid	1,000 µg/mL: Ca, Fe, K, Mg, Na, Sr 10 µg/mL: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn, Th, U	125 mL	N9303825
Initial Calibration Verification Standard 2			
2% HNO ₃ /trace HF	10 µg/mL: Sn, Ti	125 mL	N9303826
ELAN® 6100 DRC Setup/Stab/Masscal Solution			
0.5% HNO ₃	10 µg/L: Ba 1 µg/L: Al, Cd, Ce, Cr, Cu, In, Pb, Mg, Mn, Rh, Th	1,000 mL	N8125035
ELAN DRC/DRCplus/DRC II Solution Kit			
Kit Includes:			N8120541
	2 x 1,000 mL: Setup/Stability/Masscal Solution		N8125035
	2 x 250 mL: Wash Solution		N8125033
	1 x 250 mL: Sensitivity/Detection Limit Solution		N8125034
	1 x 125 mL: Methanol Blank Solution		N8125037
	1 x 125 mL: Chromium in Methanol Solution		N8125038
ELAN 9000/6100 Solution Kit			
Kit Includes:			N8120522
	2 x 1,000 mL: Setup/Stability/Masscal Solution		N8125030
	1 x 125 mL: Dual-Detector		N8125010
	1 x 1,000 mL: Wash Solution		N8122038
	1 x 250 mL: Detection Limit Solution		N8125031
ELAN 9000/6100 Setup/Stability/Masscal Solution			
1% HNO ₃	10 µg/L: Ba, Cd, Ce, Cu, In, Pb, Mg, Rh, U	1,000 mL	N8125030
ELAN 9000/6x00 Dual-Detector Calibration Solution			
1% HNO ₃	200 µg/L: Cd, Cu, Pb, Mg, Rh	125 mL	N8125032
ELAN 6000/5000 Plasma Setup Solution			
2% HNO ₃	10 µg/L: Ba, Cd, Ce, Cu, Ge, Pb, Mg, Rh, Sc, Tb, Tl	1,000 mL	N8122014
ELAN 5000 Detection Limit Solution			
2% HNO ₃	10 µg/L: Be, Co, Ge, In, Tl, U	125 mL	N8122017

SmartTune Standards

Matrix	Content	Volume	Part No.
SmartTune Solution for Standard ELANS/DRC-e			
1% HNO ₃	10 µg/L: Ba, Be, Ce, Co, In, Pb, Mg, Rh, U	1,000 mL	N8125040
SmartTune Solution for DRC/DRCplus/DRC II			
0.5% HNO ₃	10 µg/L: Ba 1 µg/L: Be, Ce, Co, In, Fe, Pb, Mg, Th, U	1,000 mL	N8125041
Tuning Solution 1			
2% HNO ₃ /	10 µg/mL: Ba, Be, Ce, Co, In, Li,	125 mL	N9303843
5% HCl	Mg, Pb, Rh, Tl, U, Y		
NexION Setup Solution			
1% HNO ₃	1 µg/L: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145051
1% HNO ₃	10 µg/L: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145284

ICP-OES Solutions

Matrix	Volume	Part No.
UV Wavecal Solution	500 mL	N0582152
Mixed Calibration Standard	500 mL	N0691579
Low UV Standard	250 mL	N0691580
Calcium Stray Light Standard	125 mL	N0691581
VIS Align Solution	100 mL	N0691743
Magnesium Standard Pure	125 mL	N0691745
Optima Blank in 2% HNO ₃	500 mL	N0773120
Instrument Calibration Standard 4	125 mL	N9300221
Vis Wavecal Solution	250 mL	N9302946

Instrument Setup Solutions

Matrix	Content	Volume	Part No.
Vis Wavecal Solution			
2% HNO ₃	50 µg/mL: K 10 µg/mL: La, Li, Mn, Na, Sr 1 µg/mL: Ba, Ca	250 mL	N9302946
UV Wavecal Solution			
5% HCl	100 µg/mL: K, P, S 20 µg/mL: As, La, Li, Mn, Mo, Na, Mo, Na, Ni, Sc	250 mL	N0681470
5% HCl	100 µg/mL: K, P, S 20 µg/mL: As, La, Li, Mn, Mo, Na, Ni, Sc 1 µg/mL: Ca	500 mL	N0582152
Low UV Standard			
2% HNO ₃	10 µg/mL: Al, P, S	250 mL	N0691580
Calcium Stray Light Standard			
H ₂ O	10,000 µg/mL: Ca	125 mL	N0691581
1% HNO ₃	10 µg/L: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145284

Initial Calibration Verification Standards

Matrix	Contents	Volume	Part No.
5% HNO ₃ /trace Tartaric Acid	500 µg/mL: Ca, K, Mg, Na 200 µg/mL: Al, Ba 100 µg/mL: Fe 60 µg/mL: Sb 50 µg/mL: Co, V 40 µg/mL: Ni 25 µg/mL: Cu 20 µg/mL: Zn 15 µg/mL: Mn 10 µg/mL: Ag, As, Cr, Tl 5 µg/mL: Be, Cd, Se 3 µg/mL: Pb	500 mL	N9300224
5% HNO ₃ /trace Tartaric Acid	500 µg/mL: Ca, K, Mg, Na 200 µg/mL: Al, Ba 100 µg/mL: Fe 60 µg/mL: Sb 50 µg/mL: Co, V 40 µg/mL: Ni 25 µg/mL: Cu 20 µg/mL: Zn 15 µg/mL: Mn 10 µg/mL: Ag, As, Cr, Tl 5 µg/mL: Be, Cd, Se 3 µg/mL: Pb	125 mL	N9303953

Instrument Calibration Standards for CLP

Matrix	Content	Volume	Part No.
Instrument Calibration Standard 1			
5% HNO ₃	5,000 µg/mL: Ca, K, Mg, Na	125 mL	N9300218
Instrument Calibration Standard 2			
5% HNO ₃	400 µg/mL: Ni 200 µg/mL: Zn 150 µg/mL: Mn 100 µg/mL: Ag, Cr	125 mL	N9300219
Instrument Calibration Standard 3			
5% HNO ₃	2,000 µg/mL: Al, Ba 1,000 µg/mL: Fe 500 µg/mL: Co, V 250 µg/mL: Cu 50 µg/mL: Be	125 mL	N9300220
Instrument Calibration Standard 4			
5% HNO ₃	100 µg/mL: As, Tl 50 µg/mL: Cd, Se 30 µg/mL: Pb	125 mL	N9300221

Instrument Calibration Standards for CLP

Matrix	Content	Volume	Part No.
Instrument Check Standard 1			
2% HNO ₃ / trace Tartaric Acid/ trace HF	10 µg/mL: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Sb, Se, Tl, V, Zn	125 mL	N9303821
Instrument Check Standard 3			
2% HNO ₃	200 µg/mL: Ca, Fe, K, Mg, Na	125 mL	N9303822
Instrument Check Standard 4			
2% HNO ₃	10 µg/mL: Mo, Th, U	125 mL	N9303823
Instrument Check Standard 5			
2% HNO ₃ /trace HF	10 µg/mL: Mo, Sn, Sr, Ti	125 mL	N9303824

Interference Check Standards

Matrix	Content	Volume	Part No.
Interference Check Standard 1			
H ₂ O/trace HNO ₃ / 0.6% Tartaric Acid	1,000 µg/mL: Sb	125 mL	N9300207
Interference Check Standard 5			
5% HNO ₃	6,000 µg/mL: Ca 5,000 µg/mL: Fe 3,000 µg/mL: Mg 1,200 µg/mL: Al 1,000 µg/mL: Na	125 mL	N9300208
Interference Check Standard 18			
5% HNO ₃	20,000 µg/mL: K 1,000 µg/mL: As, Pb, Tl 500 µg/mL: Se 300 µg/mL: Ag, Ba, Cd, Co, Cr, Cu, Ni, V, Zn 200 µg/mL: Mn 100 µg/mL: Be, Hg*	125 mL	N9300205
Interferents A			
5% HNO ₃	5,000 µg/mL: Al, Ca, Mg 2,000 µg/mL: Fe	500 mL	N9300226
Alternate Interferents A			
5% HNO ₃	1,000 µg/mL: Cr, Cu, Mn, Ni, Ti, V	500 mL	N9300228
Analytes B			
5% HNO ₃ / trace Tartaric Acid/ trace HF	100 µg/mL: Cd, Ni, Zn 60 µg/mL: Sb 50 µg/mL: Ba, Be, Co, Cr, Cu, Mn, V 20 µg/mL: Ag 10 µg/mL: As, Tl 5 µg/mL: Pb, Se	125 mL	N9300227
Alternate Analytes B			
5% HNO ₃ / trace Tartaric Acid/ trace HF	100 µg/mL: Al, As, B, Mo, Na, Sb, Se, Tl 10 µg/mL: Ca, Fe, Mg, Si	125 mL	N9300229
Interference Check Standards			
H ₂ O/trace HNO ₃ / 0.6% Tartaric Acid	1,000 µg/mL: Sb	500 mL	N9303797
Interference Check Solution 1 (for SW-846 and ILM 05.2)			
5% HNO ₃ /trace HF	10,000 µg/mL: Cl 2,000 µg/mL: C 1,000 µg/mL: Al, Ca, Fe, K, Mg, Na, P, S 20 µg/mL: Mo, Ti	125 mL	N9303828
Interference Check Solution 2 (for SW-846)			
2% HNO ₃	10 µg/mL: Ag, As, Cd, Co, Cr, Cu, Mn, Ni, Zn	125 mL	N9303830
Analytes C (for ILM 05.2)			
2% HNO ₃ / trace Tartaric Acid/ trace HF	2 µg/mL: Ag, As, Ba, Be, Cd, Co, Cr, Cu, Hg*, Mn, Ni, Pb, Sb, Se, Tl, V, Zn	125 mL	N9303831

*Supplied in separate bottle

REFERENCE MATERIALS

Internal Standard Solutions

Matrix	Content	Volume	Part No.
Multi-Element Internal Standard			
2% HNO ₃	10 µg/mL: Bi, Ho, In, Li6, Sc, Tb, Y	125 mL	N9303834
Multi-Element Internal Standard			
2% HNO ₃	10 µg/mL: Bi, Ho, In, Li6, Sc, Tb, Y	100 mL	N9301722
Internal Standard Mix			
5-10% HNO ₃	10 µg/mL: Bi, Ge, In, Li6, Sc, Tb, Y	125 mL	N9303832
Internal Standard Mix			
5-10% HNO ₃	10 µg/mL: Bi, Ge, In, Li6, Sc, Tb, Y	500 mL	N9303833

Contract Required Detection Limits (CRDL)

Matrix	Content	Volume	Part No.
% HNO ₃ / trace Tartaric Acid/ trace HF	120 µg/mL: Sb 100 µg/mL: Co, V 80 µg/mL: Ni 50 µg/mL: Cu 40 µg/mL: Zn 30 µg/mL: Mn 20 µg/mL: Ag, As, Cr, Tl 10 µg/mL: Be, Cd, Se 6 µg/mL: Pb	125 mL	N9300225

Performance Verification Standards

Matrix	Content	Volume	Part No.
Methanol Blank Solution			
1% Semiconductor Grade		125 mL	N8125037
Chromium in Methanol Solution			
1% Semiconductor Grade Methanol	10 µg/mL: Cr	125 mL	N8125038
Selenium Solution			
5% HNO ₃	10 µg/mL: Se	250 mL	N8125039
NexION 350Q Solution Kit – Non-Cell			
Kit Includes:			
1% HNO ₃	1 x 250 mL NexION Wash Solution		N8145050
	1 x 500 mL NexION Setup Solution		N8145051
	1 x 500 mL NexION 300Q Non-cell Stability Solution		N8145053
	1 x 100 mL NexION Standard/ DRC Mode Detection Limit Blank Solution		N8145055
	1 x 100 mL NexION Standard/ DRC Mode Detection Limit Solution		N8145056
	1 x 100 mL NexION Dual Detector Solution		N8145059
NexION 350 X/D/S 1000/2000 Solution Kit – Cell Instruments			
Kit Includes:			
	1 x 250 mL NexION Wash Solution		N8145050
	1 x 500 mL NexION Setup Solution		N8145051
	1 x 250 mL NexION KED Setup Solution		N8145052
	1 x 500 mL NexION 350X/D/S Cell Stability Solution		N8145054
	1 x 100 mL NexION Standard/DRC Mode Detection Limit Blank Solution		N8145055
	1 x 100 mL NexION Standard/DRC Mode Detection Limit Solution		N8145056
	1 x 100 mL NexION KED Mode Detection Limit Blank Solution		N8145057
	1 x 100 mL NexION KED Mode Detection Limit Solution		N8145058
	1 x 100 mL NexION Dual Detector Solution		N8145059

Performance Verification Standards continued

Matrix	Content	Volume	Part No.
NexION Setup Solution			
1% HNO ₃	1 µg/L: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145051
1% HNO ₃	10 µg/L: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145284
NexION KED Setup Solution			
1% HNO ₃	10 µg/mL: Be, Ce, Fe, In, Li, Mg, Pb, U	500 mL	N8145289
1% HCl	10 µg/L: Co 1 µg/L: Ce	250 mL	N8145052
NexION Fit Spec. Verify Solution			
1% HNO ₃	1 mg/L ± 5 % Li, Be, Mg, Fe, In, Ce, Pb, U	125 mL	N8145049
Internal Stock Solution			
5% HNO ₃	12.5 µg/mL Ni, Sc, Te, Y	100 mL	N8145419
Internal Stock Solution			
5% HNO ₃	12.5 µg/mL Ni, Sc, Te, Y	500 mL	N8145420
Special 1 Pure Plus			
2% HNO ₃	200 µg/mL Ca, K, Na, P 40 µg/mL Mg 4 µg/mL Fe, Zn 200 µg/L Cu 100 µg/L Mn 40 µg/L Cr, Mo, Se	100 mL	N8145421
Special 2 Pure Plus			
5% HNO ₃	1000 µg/mL Ca, K, Na, P 200 µg/mL Mg 20 µg/mL Fe, Zn 1000 µg/L Cr, Mo, Se	100 mL	N8145422
NexION 350Q/2000 Non-cell Stability Solution			
1% HNO ₃	1 µg/L: Cd, Cu, Mg, Pb	500 mL	N8145053
NexION 350X/D/S/1000/2000 Cell Stability Solution			
1% HNO ₃	1 µg/L: Cd, Cr, Fe, Mg, Pb 10 µg/L: Co, Cu, In, Se	500 mL	N8145054
NexION 1000/2000 Cell Stability Solution without Se			
1% HNO ₃	1 µg/L: Cd, Cr, Fe, In, Mg, Pb 10 µg/L: Co, Cu	500 mL	N8151033
NexION 350X/D Internal Standard Stock Solution			
2% HNO ₃	100 µg/mL: Sc 50 µg/mL: Ge 1 µg/mL: Rh, In, Tb	125 mL	N9308592
NexION 350Q Internal Standard Stock Solution			
2% HNO ₃	50 µg/mL: Sc, Ge 10 µg/mL: Rh, In, Tb	125 mL	N9308591
NexION Standard/DRC Mode Detection Limit Blank Solution			
0.5% HNO ₃		100 mL	N8145055
NexION Standard/DRC Mode Detection Limit Solution			
0.5% HNO ₃	1 µg/L: Be, Ca, Co, Fe, In, U	100 mL	N8145056
NexION KED Mode Detection Limit Blank Solution			
1% HCl		100 mL	N8145057
NexION KED Mode Detection Limit Solution			
1% HCl	10 µg/L: V, As, Se	100 mL	N8145058
NexION Dual Detector Solution			
2% HNO ₃	200 µg/L: Al, Ba, Ce, Co, Cu, In, Li, Mg, Mn, Ni, Pb, Tb, U, Zn	100 mL	N8145059

Performance Verification Standards continued

Matrix	Content	Volume	Part No.
NexION AFT Single-Element Solution			
2% HNO ₃	2 µg/L: Fe	100 mL	N8145060
NexION AFT Multi-Element Solution			
2% HNO ₃	2 µg/L: Ag, Al, As, Ba, Be, Bi, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, U, V, Zn	100 mL	N8145061
NexION AFT Single-Element Solution (H/He)			
2% HNO ₃	10 µg/L Se	125 mL	N8151037
NexION AFT Multi-Element Solution (H/He)			
2% HNO ₃	10 µg/L Ag, Al, AS, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, U, V, Zn	125 mL	N8151038
Cold Plasma Optimization Solution			
0.1% HNO ₃	1 µg/L Li, Co, Rb, In, Cs, Pb	250 mL	N8151032

Wash Standards and Matrix Blanks

Wash Standards

Matrix	Volume	Part No.
ELAN DRC Wash Solution		
0.5% HNO ₃	250 mL	N8125033
ELAN 9000/6X00/DRC-e Wash Solution		
1% HNO ₃	1,000 mL	N8122038
NexION Wash Solution		
1% HNO ₃	250 mL	N8145050

Matrix Blanks

Matrix	Volume	Part No.
Water Blank		
ASTM® Type I Water, 18 megohm	125 mL	N9303814
ASTM® Type I Water, 18 megohm	250 mL	N9303813
Hydrochloric Acid Blanks		
2% HCl in ASTM® Type I Water	125 mL	N9300238
5% HNO ₃ in ASTM® Type I Water	500 mL	N9308571
Nitric Acid Blanks		
1% HNO ₃ in ASTM® Type I Water	125 mL	N9303732
2% HNO ₃ in ASTM® Type I Water	500 mL	N0773120
2% HNO ₃ in ASTM® Type I Water	500 mL	N9308550
5% HNO ₃ in ASTM® Type I Water	500 mL	N9308571

Isotope Standard

Matrix	Content	Volume	Part No.
Lithium 6 Standard			
2% HNO ₃	100 mg/L: Li6	125 mL	N9303955



Universal Data Calibration Standards Kit

Matrix	Content	Volume	Part No.
Solution Kit			N9306225
Includes 1 bottle of each:			
5% HNO ₃	10 µg/mL: Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Sc, Tb, Th, Tm, Y, Yb	125 mL	N9303816
5% HNO ₃	10 µg/mL: Al, Ag, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Hg*, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, U, V, Zn	125 mL	
10% HCl/ 1% HNO ₃	10 µg/mL: Au, Hf, Ir, Pd, Pt, Rh, Ru, Sb, Sn, Te	125 mL	
5% HNO ₃	10 µg/mL: Hg*	125 mL	
H ₂ O /trace HF/ trace HNO ₃	10 µg/mL: B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr	125 mL	

*Supplied in separate bottle

Pharmaceutical Analysis Standards

USP Standards

As a part of our United States Pharmacopeia (USP) compliant offering, we provide calibration and check standards for the analysis of metals in drugs, pharmaceutical substances and raw materials to verify Oral Daily Dose PDE, Parenteral Component Limit and Parenteral Daily Dose PDE.

Our trace metal USP standards can be used to calibrate Arsenic, Cadmium, Lead and Mercury, the four toxic metals as part of the USP regulations. When you couple our accurate and reliable USP standards with your ICP-MS you will remain compliant with the new and changing regulations.

ICH Standards

In conjunction with our United States Pharmacopeia (USP) calibration standards, we offer six calibration standards for the analysis of metals in pharmaceutical materials and products following the International Conference on Harmonization (ICH) guidelines.

The ICH standards verify Elemental Impurities, Precious Metals Impurities and Parenteral Elemental Impurities. Couple our accurate and reliable ICH standards with your ICP-MS and you will remain compliant with the new and changing regulations.

USP and ICH Standards

Matrix	Content	Volume	Part No.
ICH Elemental Impurities Standards Kit – Oral PDEs Kit Includes:			
5% HNO ₃ / 2% HCl	ICH Class 1 Elements + TI – Oral PDE: 30 µg/mL Hg 15 µg/mL As 8 µg/mL TI 5 µg/mL Cd, Pb	125 mL	N9304362
2% HNO ₃	ICH Class 2A Elements – Oral and Parenteral PDEs: 200 µg/mL Ni 100 µg/mL V 50 µg/mL Co	125 mL	N9304363
2% HCl	100 µg/mL Au	125 mL	N9303728
15% HCl	ICH Class 2B Precious Metal Elements (no Os) – All PDEs: 100 µg/mL Ir, Pd, Pt, Rh, Ru	125 mL	N9304364
2% HNO ₃	ICH Class 2B Se and Ag – Oral PDE: 150 µg/mL Ag, Se	125 mL	N9304365
5% HNO ₃ /trace Tartaric Acid/ trace HF	ICH Class 3 Elements – Oral PDEs: 1100 µg/mL Cr 600 µg/mL Sn 300 µg/mL Cu, Mo 140 µg/mL Ba 120 µg/mL Sb 55 µg/mL Li	125 mL	N9304366
2% HNO ₃	Internal Standards – All PDEs: 50 µg/mL Ge 20 µg/mL Ga 1 µg/mL In, Tb	125 mL	N9304367

Matrix	Content	Volume	Part No.
ICH Elemental Impurities Standards Kit – Parenteral PDEs Kit Includes:			
5% HNO ₃ / 2% HCl	ICH Class 1 Elements + TI – Parenteral PDE: 15 µg/mL As 8 µg/mL TI 5 µg/mL Pb 3 µg/mL Hg 2 µg/mL Cd	125 mL	N9304369
2% HNO ₃	ICH Class 2A Elements – Oral and Parenteral PDEs: 200 µg/mL Ni 100 µg/mL V 50 µg/mL Co	125 mL	N9304363
2% HCl	100 µg/mL Au	125 mL	N9303728
15% HCl	ICH Class 2B Precious Metal Elements (no Os) – All PDEs: 100 µg/mL Ir, Pd, Pt, Rh, Ru	125 mL	N9304364
2% HNO ₃	ICH Class 2B Se and Ag – Parenteral PDE: 80 µg/mL Se 10 µg/mL Ag	125 mL	N9304372
2% HNO ₃ /trace Tartaric Acid/ trace HF	ICH Class 3 Elements – Parenteral PDEs: 150 µg/mL Mo 110 µg/mL Cr 60 µg/mL Sn 30 µg/mL Cu 70 µg/mL Ba 25 µg/mL Li 9 µg/mL Sb	125 mL	N9304373
2% HNO ₃	Internal Standards – All PDEs: 50 µg/mL Ge 20 µg/mL Ga 1 µg/mL In, Tb	125 mL	N9304367



USP and ICH Standards continued

Matrix	Content	Volume	Part No.
ICH Elemental Impurities Standards Kit – Inhalational PDEs Kit Includes:			
5% HNO ₃ / 2% HCl	ICH Class 1 Elements + TI – Inhalational PDE: 8 µg/mL TI 5 µg/mL Pb 2 µg/mL As, Cd 1 µg/mL Hg	125 mL	N9304376
2% HNO ₃	ICH Class 2A Elements – Inhalational PDEs: 5 µg/mL Ni 3 µg/mL Co 1 µg/mL V	125 mL	N9304377
2% HCl	100 µg/mL Au	125 mL	N9303728
15% HCl	ICH Class 2B Precious Metal Elements (no Os) – All PDEs: 100 µg/mL Ir, Pd, Pt, Rh, Ru	125 mL	N9304364
2% HNO ₃	ICH Class 2B Se and Ag – Inhalational PDE: 130 µg/mL Se 7 µg/mL Ag	125 mL	N9304379
2% HNO ₃ /trace Tartaric Acid/ trace HF	ICH Class 3 Elements – Inhalational PDEs: 300 µg/mL Ba 60 µg/mL Sn 30 µg/mL Cu 25 µg/mL Li 20 µg/mL Sb 10 µg/mL Mo 3 µg/mL Cr	125 mL	N9304380
2% HNO ₃	Internal Standards – All PDEs: 50 µg/mL Ge 20 µg/mL Ga 1 µg/mL In, Tb	125 mL	N9304367

Matrix	Content	Volume	Part No.
ICH Class 2B Precious Metal Elements – All PDEs			
15% HCl	ICH Class 2B Precious Metal Elements – All PDEs: 100 µg/mL Ir, Os, Pd, Pt, Rh, Ru	125 mL	N9304382

Matrix	Content	Volume	Part No.
Osmium			
15% HCl	100 µg/mL Os	125 mL	N9304383

Gold Nanoparticle Standards

Fully characterized gold nanospheres designed for Single Particle-ICP-MS. These particle standards have a nearly perfect spherical shape, narrow size (CV < 5%) and particle number distributions (CV < 5%).

Description	Diameter (nm)	Volume	Part No.
Ultra Uniform Gold Nanospheres Particle Standard 1e7 particles/mL, PEG Carboxyl 0.8 kDa	30	25 mL	N8151034
Ultra Uniform Gold Nanospheres Particle Standard 1e7 particles/mL, PEG Carboxyl 0.8 kDa	50	25 mL	N8151035
Ultra Uniform Gold Nanospheres Particle Standard 1e7 particles/mL, PEG Carboxyl 0.8 kDa	100	25 mL	N8151036

Metallo-Organic Standards

PerkinElmer Metallo-Organic Standards provide a comprehensive solution to your application needs.

Our product offering includes:

- Single and multi-element standards for the analysis of wear metals and metal additives in oil
- Reference materials for used oil analysis of fuel, soot, water, acid number, base number or viscosity
- Sulfur standards made from polysulfide oil
- High purity matrix oils and solvents
- Proficiency testing standards with instant feedback

Each product is shipped with a comprehensive Certificate of Analysis. Our Metallo-Organic Standards have been designed to give you the confidence you need when analyzing difficult samples.



Single-Element, Metallo-Organic Standards

Element	Symbol	Matrix	Size	Part No.
Aluminum 1000 µg/g	Al	Hydrocarbon Oil	50 g	N9308200
Aluminum 5000 µg/g	Al	Hydrocarbon Oil	50 g	N9308729
Antimony 1000 µg/g	Sb	Hydrocarbon Oil	50 g	N9308201
Arsenic 1000 µg/g	As	Hydrocarbon Oil	50 g	N9308202
Barium 1000 µg/g	Ba	Hydrocarbon Oil	50 g	N9308203
Beryllium 1000 µg/g	Be	Hydrocarbon Oil	50 g	N9308204
Bismuth 1000 µg/g	Bi	Hydrocarbon Oil	50 g	N9308205
Boron 1000 µg/g	B	Hydrocarbon Oil	50 g	N9308206
Cadmium 1000 µg/g	Cd	Hydrocarbon Oil	50 g	N9308207
Calcium 1000 µg/g	Ca	Hydrocarbon Oil	50 g	N9308208
Calcium 5000 µg/g	Ca	Hydrocarbon Oil	50 g	N9308322
Chromium 1000 µg/g	Cr	Hydrocarbon Oil	50 g	N9308209
Cobalt 1000 µg/g	Co	Hydrocarbon Oil	50 g	N9308210
Copper 1000 µg/g	Cu	Hydrocarbon Oil	50 g	N9308211
Iron 1000 µg/g	Fe	Hydrocarbon Oil	50 g	N9308212
Lanthanum 1000 µg/g	La	Hydrocarbon Oil	50 g	N9308213
Lead 1000 µg/g	Pb	Hydrocarbon Oil	50 g	N9308214
Lithium 1000 µg/g	Li	Hydrocarbon Oil	50 g	N9308215
Magnesium 1000 µg/g	Mg	Hydrocarbon Oil	50 g	N9308216
Manganese 1000 µg/g	Mn	Hydrocarbon Oil	50 g	N9308217
Mercury 1000 µg/g	Hg	Hydrocarbon Oil	50 g	N9308218
Molybdenum 1000 µg/g	Mo	Hydrocarbon Oil	50 g	N9308219

Element	Symbol	Matrix	Size	Part No.
Nickel 1000 µg/g	Ni	Hydrocarbon Oil	50 g	N9308220
Phosphorus 1000 µg/g	P	Hydrocarbon Oil	50 g	N9308221
Potassium 1000 µg/g	K	Hydrocarbon Oil	50 g	N9308222
Scandium 1000 µg/g	Sc	Hydrocarbon Oil	50 g	N9308223
Selenium 1000 µg/g	Se	Hydrocarbon Oil	50 g	N9308224
Silicon 1000 µg/g	Si	Hydrocarbon Oil	50 g	N9308225
Silver 1000 µg/g	Ag	Hydrocarbon Oil	50 g	N9308226
Sodium 1000 µg/g	Na	Hydrocarbon Oil	50 g	N9308227
Strontium 1000 µg/g	Sr	Hydrocarbon Oil	50 g	N9308228
Sulfur 10 µg/g	S	Hydrocarbon Oil	50 g	N9308229
Sulfur 100 µg/g	S	Hydrocarbon Oil	50 g	N9308230
Sulfur 1000 µg/g	S	Hydrocarbon Oil	50 g	N9308231
Thallium 1000 µg/g	Tl	Hydrocarbon Oil	50 g	N9308232
Tin 1000 µg/g	Sn	Hydrocarbon Oil	50 g	N9308233
Titanium 1000 µg/g	Ti	Hydrocarbon Oil	50 g	N9308234
Vanadium 1000 µg/g	V	Hydrocarbon Oil	50 g	N9308235
Yttrium 1000 µg/g	Y	Hydrocarbon Oil	50 g	N9308236
Yttrium 5000 µg/g	Y	Hydrocarbon Oil	50 g	N9308323
Zinc 1000 µg/g	Zn	Hydrocarbon Oil	50 g	N9308237
Zirconium 1000 µg/g	Zr	Hydrocarbon Oil	50 g	N9308238

Lubricant Guide

For more information on our Lubricants consumables offering visit www.PerkinElmer.com/lubricants. You'll find everything from application notes to a comprehensive guide of consumables for all your Lubricants analysis needs.



V-21 Wear Metal Standards

Includes: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V, Zn

Description	Matrix	Size	Part No.
V-21 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	100 g	N9308300
V-21 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	200 g	N9308301
V-21 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	400 g	N9308324
V-21 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	100 g	N9308302
V-21 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	200 g	N9308303
V-21 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	400 g	N9308325
V-21 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	100 g	N9308304
V-21 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	200 g	N9308305
V-21 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	400 g	N9308326
V-21 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	100 g	N9308306
V-21 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	200 g	N9308307
V-21 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	400 g	N9308327
V-21 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	100 g	N9308308
V-21 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	200 g	N9308309
V-21 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	400 g	N9308328
V-21 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	100 g	N9308310
V-21 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	200 g	N9308311
V-21 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	400 g	N9308329
V-21 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	100 g	N9308312
V-21 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	200 g	N9308313
V-21 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	400 g	N9308330

V-21+K Wear Metal Standards

Includes: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V, Zn

Description	Matrix	Size	Part No.
V-21+K Wear Metals Standard 10 µg/g	Hydrocarbon Oil	100 g	N9308355
V-21+K Wear Metals Standard 10 µg/g	Hydrocarbon Oil	200 g	N9308356
V-21+K Wear Metals Standard 30 µg/g	Hydrocarbon Oil	100 g	N9308357
V-21+K Wear Metals Standard 30 µg/g	Hydrocarbon Oil	200 g	N9308358
V-21+K Wear Metals Standard 30 µg/g	Hydrocarbon Oil	400 g	N9308371
V-21+K Wear Metals Standard 50 µg/g	Hydrocarbon Oil	100 g	N9308359
V-21+K Wear Metals Standard 50 µg/g	Hydrocarbon Oil	200 g	N9308360
V-21+K Wear Metals Standard 50 µg/g	Hydrocarbon Oil	400 g	N9308372
V-21+K Wear Metals Standard 100 µg/g	Hydrocarbon Oil	100 g	N9308361
V-21+K Wear Metals Standard 100 µg/g	Hydrocarbon Oil	200 g	N9308362
V-21+K Wear Metals Standard 100 µg/g	Hydrocarbon Oil	400 g	N9308373
V-21+K Wear Metals Standard 300 µg/g	Hydrocarbon Oil	100 g	N9308363
V-21+K Wear Metals Standard 300 µg/g	Hydrocarbon Oil	200 g	N9308364
V-21+K Wear Metals Standard 500 µg/g	Hydrocarbon Oil	100 g	N9308365
V-21+K Wear Metals Standard 500 µg/g	Hydrocarbon Oil	200 g	N9308366
V-21+K Wear Metals Standard 500 µg/g	Hydrocarbon Oil	400 g	N9308374
V-21+K Wear Metals Standard 900 µg/g	Hydrocarbon Oil	100 g	N9308367
V-21+K Wear Metals Standard 900 µg/g	Hydrocarbon Oil	200 g	N9308368

Internal Standards

Description	Matrix	Size	Part No.
Cobalt (Co) Internal Standard, 6%	Mineral Spirits	200 g	N0776107
Cobalt (Co) Internal Standard, 6%	Mineral Spirits	400 g	N9308334
Cobalt (Co) Internal Standard, 5000 µg/g	Hydrocarbon Oil	50 g	N9308258
Cobalt Sulfur-Free Metallo-Organic Concentrate: Co @ approx 3%	Hydrocarbon Oil	400 g	N9304168

V-23 Wear Metal Standards

Includes: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn

Description	Matrix	Size	Part No.
V-23 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	100 g	N9308239
V-23 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	200 g	N0776109
V-23 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	400 g	N9308315
V-23 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	100 g	N9308241
V-23 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	200 g	N9308242
V-23 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	400 g	N9308316
V-23 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	100 g	N9308243
V-23 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	200 g	N0776104
V-23 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	400 g	N9308317
V-23 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	100 g	N9308245
V-23 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	200 g	N0776105
V-23 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	400 g	N9308318
V-23 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	100 g	N9308247
V-23 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	200 g	N9308248
V-23 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	400 g	N9308319
V-23 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	100 g	N9308249
V-23 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	200 g	N0776106
V-23 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	400 g	N9308320
V-23 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	100 g	N9308251
V-23 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	200 g	N9308252
V-23 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	400 g	N9308321

V-26 Wear Metal Standards

Includes: Ag, Al, B, Ba, Bi, Ca, Cd, Cr, Cu, Fe, In, Li, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn

Description	Matrix	Size	Part No.
V-26 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	100 g	N0776130
V-26 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	200 g	N0776131
V-26 Wear Metals Standard 10 µg/g	Hydrocarbon Oil	400 g	N9308743
V-26 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	100 g	N0776132
V-26 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	200 g	N0776133
V-26 Wear Metals Standard 30 µg/g	Hydrocarbon Oil	400 g	N9308745
V-26 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	100 g	N0776134
V-26 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	200 g	N0776135
V-26 Wear Metals Standard 50 µg/g	Hydrocarbon Oil	400 g	N9308747
V-26 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	100 g	N0776136
V-26 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	100 g	N0776137
V-26 Wear Metals Standard 100 µg/g	Hydrocarbon Oil	400 g	N9308742
V-26 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	100 g	N0776138
V-26 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	200 g	N0776139
V-26 Wear Metals Standard 300 µg/g	Hydrocarbon Oil	400 g	N9308744
V-26 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	100 g	N0776140
V-26 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	200 g	N0776141
V-26 Wear Metals Standard 500 µg/g	Hydrocarbon Oil	400 g	N9308746
V-26 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	100 g	N0776142
V-26 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	200 g	N0776143
V-26 Wear Metals Standard 900 µg/g	Hydrocarbon Oil	400 g	N9308748

Setup Solutions

Description	Matrix	Size	Part No.
Setup Solution in Hydrocarbon Oil Contents: Be, Ce, Fe, In, Li, Pb @ 10 µg/g	75 cSt Mineral Oil	100 g	N9308384
Setup Solution in Hydrocarbon Oil Contents: Be, Ce, Fe, In, Li, Pb @ 10 µg/g	75 cSt Mineral Oil	400 g	N9308387

REFERENCE MATERIALS

Metal Additive Standards

Description	Matrix	Size	Part No.
Metal Additive Standard 3: Ca @ 5000 µg/g; P, Zn @ 1600 µg/g	Hydrocarbon Oil	100 g	N9308369
Metal Additive Standard 3: Ca @ 5000 µg/g; P, Zn @ 1600 µg/g	Hydrocarbon Oil	200 g	N9308370
Metal Additive Standard 3: Ca @ 5000 µg/g; P, Zn @ 1600 µg/g	Hydrocarbon Oil	400 g	N9308552
Metal Additive Standard 4: Ca @ 5000 µg/g; Mg, P, Zn @ 1600 µg/g	Hydrocarbon Oil	100 g	N9308259
Metal Additive Standard 4: Ca @ 5000 µg/g; Mg, P, Zn @ 1600 µg/g	Hydrocarbon Oil	200 g	N0776108
Metal Additive Standard 4: Ca @ 5000 µg/g; Mg, P, Zn @ 1600 µg/g	Hydrocarbon Oil	400 g	N9308333
Metal Additives Standard: Ca @ 5000 µg/g; P -Phosphorus @ 1600 µg/g, Zn - Zinc (1600) @ 1600 µg/g	Hydrocarbon Oil	200 g	N9308551



V-Solv™ ICP
Solvent 1 Gallon

Matrix Oils and Solvents

Description	Matrix	Size	Part No.
Hydrocarbon Oil	75 cSt Oil	500 mL	N0776103
Hydrocarbon Oil	75 cSt Oil	1 Gal.	N9308262
Mineral Oil (low sulfur)	20 cSt Mineral Oil	500 mL	N9308263
Mineral Oil (low sulfur)	20 cSt Mineral Oil	1/2 Gal.	N9308264
V-Solv™ ICP Solvent	V-Solv™	1 Gal.	N9308265
V-Solv™ ICP Solvent	V-Solv™	5 Gal.	N9308378
Citrajet Liquid Acid Cleaner		1 Gal.	N0777063
Citrajet Liquid Acid Cleaner		5 Gal.	N0777064
V-Solv™ + Cobalt ICP Solvent	V-Solv™	1 Gal.	N9308198
V-Solv™ + Cobalt ICP Solvent	V-Solv™	5 Gal.	N9308199

Acid Number Standards

Description	Matrix	Size	Part No.
Acid Number (AN) Reference Material, 0.1 mg KOH/g	Hydrocarbon Oil	100 g	N9308160
Acid Number (AN) Reference Material, 0.1 mg KOH/g	Hydrocarbon Oil	400 g	N9308161
Acid Number (AN) Reference Material, 0.5 mg KOH/g	Hydrocarbon Oil	100 g	N9308166
Acid Number (AN) Reference Material, 0.5 mg KOH/g	Hydrocarbon Oil	400 g	N9308167
Acid Number (AN) Reference Material, 1 mg KOH/g	Hydrocarbon Oil	100 g	N9308162
Acid Number (AN) Reference Material, 1 mg KOH/g	Hydrocarbon Oil	400 g	N9308163
Acid Number (AN) Reference Material, 1.5 mg KOH/g	Hydrocarbon Oil	100 g	N9308164
Acid Number (AN) Reference Material, 1.5 mg KOH/g	Hydrocarbon Oil	400 g	N9308165
Acid Number (AN) Reference Material, 2 mg KOH/g	Hydrocarbon Oil	50 g	N9308170
Acid Number (AN) Reference Material, 2 mg KOH/g	Hydrocarbon Oil	400 g	N9308171
Acid Number (AN) Reference Material, 3 mg KOH/g	Hydrocarbon Oil	50 g	N9308168
Acid Number (AN) Reference Material, 3 mg KOH/g	Hydrocarbon Oil	400 g	N9308169

Fuel Dilution Standards

Description	Matrix	Size	Part No.
Blank for Diesel Fuel Dilution Standard	75 cSt Hydrocarbon Oil	100 mL	N9308266
6% w/w Custom Fuel Dilution Standard	75 cSt Hydrocarbon Oil	100 mL	N9308741
Blank for Gas Fuel Dilution Standard	75 cSt Hydrocarbon Oil	100 mL	N9308270
100 µg/g Ethylene Glycol Standard	Multi-grade Diesel Engine Oil	80 mL	N9308388
500 µg/g Ethylene Glycol Standard	Multi-grade Diesel Engine Oil	80 mL	N9308389
600 µg/g Ethylene Glycol QC Standard	Multi-grade Diesel Engine Oil	80 mL	N9308398
1000 µg/g Ethylene Glycol Standard	Multi-grade Diesel Engine Oil	80 mL	N9308396
2000 µg/g Ethylene Glycol Standard	Multi-grade Diesel Engine Oil	80 mL	N9308397
Ethylene Glycol Standards Set	Multi-grade Diesel Engine Oil	6 x 80 mL	N9308399
Ethylene Glycol Standards Set	Multi-grade Diesel Engine Oil	80 mL	N9308379

Devolatilized Diesel Fuel Standards

Description	Matrix	Size	Part No.
2% w/w Devolatilized Diesel Fuel	75 cSt Hydrocarbon Oil	100 mL	N9308151
4% w/w Devolatilized Diesel Fuel	75 cSt Hydrocarbon Oil	100 mL	N9308152
5% w/w Devolatilized Diesel Fuel	75 cSt Hydrocarbon Oil	100 mL	N9308153
10% w/w Devolatilized Diesel Fuel	75 cSt Hydrocarbon Oil	100 mL	N9308154
Custom Fuel Dilution Std. 6% (w/w)	75 cSt Hydrocarbon Oil	100 mL	N9308155
2% w/w Devolatilized Gasoline	75 cSt Hydrocarbon Oil	100 mL	N9308156
5% w/w Devolatilized Gasoline	75 cSt Hydrocarbon Oil	100 mL	N9308157
10% w/w Devolatilized Gasoline	75 cSt Hydrocarbon Oil	100 mL	N9308158

Base Number Standards

Description	Matrix	Size	Part No.
Base Number (BN) Reference Material, 6 mg KOH/g	Hydrocarbon Oil	50 g	N9308554
Base Number (BN) Reference Material, 6 mg KOH/g	Hydrocarbon Oil	400 g	N9308181
Base Number (BN) Reference Material, 10 mg KOH/g	Hydrocarbon Oil	50 g	N9308555
Base Number (BN) Reference Material, 10 mg KOH/g	Hydrocarbon Oil	400 g	N9308173
Base Number (BN) Reference Material, 15 mg KOH/g	Hydrocarbon Oil	50 g	N9308174
Base Number (BN) Reference Material, 30 mg KOH/g	Hydrocarbon Oil	50 g	N9308176
Base Number (BN) Reference Material, 30 mg KOH/g	Hydrocarbon Oil	400 g	N9308177
Base Number (BN) Reference Material, 40 mg KOH/g	Hydrocarbon Oil	50 g	N9308178
Base Number (BN) Reference Material, 70 mg KOH/g	Hydrocarbon Oil	50 g	N9308182
Base Number Standard 15 mg KOH/g	Hydrocarbon Oil	400 g	N9308175
Base Number Standard 30 mg KOH/g	Hydrocarbon Oil	50 g	N9308553
Base Number Standard 40 mg KOH/g	Hydrocarbon Oil	400 g	N9308179
Base Number Standard 70 mg KOH/g	Hydrocarbon Oil	400 g	N9308133



Dilution Oil



Karl Fischer Standards

Karl Fischer Standards

Nominal Water Concentration (%)	Matrix	Size	Part No.
Karl Fischer Water in Oil, 0.05%	10W30 Motor Oil	100 mL	N9308298
Karl Fischer Water in Oil, 0.1%	10W30 Motor Oil	100 mL	N9308279
Karl Fischer Water in Oil, 0.5%	10W30 Motor Oil	100 mL	N9308280
Karl Fischer Water in Oil, 1.0%	10W30 Motor Oil	100 mL	N9308281

Crackle Test Reference Standards

Description	Matrix	Size	Part No.
Crackle Test Reference Standard 0 wt% H ₂ O	10W30 Motor Oil	100 g	N9308337
Crackle Test Reference Standard 0.1 wt% H ₂ O	10W30 Motor Oil	100 g	N9308338
Crackle Test Reference Standard 0.5 wt% H ₂ O	10W30 Motor Oil	100 g	N9308339

Soot Content Standards

Nominal Soot Content Range (%)	Matrix	Size	Part No.
Nominal Soot Content Range: Blank	15W40 Diesel Oil	50 mL	N9308282
Nominal Soot Content Range: 0.5-2%	15W40 Diesel Oil	50 mL	N9308283
Nominal Soot Content Range: 2-4%	15W40 Diesel Oil	50 mL	N9308284
Nominal Soot Content Range: 4-6%	15W40 Diesel Oil	50 mL	N9308285

Soot Content Standard Set

Nominal Soot Content Range (%)	Matrix	Size	Part No.
Nominal Soot Content Range: 0.0, 0.5-2, 2-4, 4-6, 6-9, 9-12wt%	15W40 Diesel Oil	6 x 50 mL	N9308730

OilExpress Standards

Description	Matrix	Size	Part No.
In-Service Lubricants FT-IR Control Standard	15W40 Diesel Oil	100 mL	N9308350
In-Service Lubricants FT-IR Control Standard	15W40 Diesel Oil	500 mL	N9308375
OilExpress 4 Test Oil 120 cSt	PAO Oils	500 mL	N9308351
OilExpress 4 Test Oil 360 cSt	PAO Oils	100 mL	N9308352
OilExpress 4 System Liquid Detergent Additive		100 mL	N9308354
OilExpress 4 System Liquid Detergent Additive		500 mL	N9308376
OilExpress 4 System Liquid Detergent Additive		1 Gal.	N9308380
Pathlength Calibration Fluid (Squalane)		50 mL	N9308377
OilExpress 4 Installation Kit (includes N9308350 , N9308351 , N9308352 , N9308354 , and N9308377)			N9300850

Viscosity Reference Standards

Description	Matrix	Size	Part No.
Viscosity Standard Reference Kit Kit includes: N5316001 , N5316002 , N5316003 , N5316004 , N5316005	Hydrocarbons	5 x 500 mL	N5316000
Nominal Viscosity: 4.5 cSt at 40 °C and 1.6 cSt at 100 °C	Hydrocarbons	500 mL	N9307740
Nominal Viscosity: 10 cSt at 40 °C and 2.7 cSt at 100 °C	Hydrocarbons	500 mL	N5316001
Nominal Viscosity: 30 cSt at 40 °C and 5.3 cSt at 100 °C	Hydrocarbons	500 mL	N5316002
Nominal Viscosity: 30 cSt at 40 °C and 5.3 cSt at 100 °C	Hydrocarbons	1 Gal.	N5316025
Nominal Viscosity: 100 cSt at 40 °C and 16.8 cSt at 100 °C	Hydrocarbons	500 mL	N5316003
Nominal Viscosity: 100 cSt at 40 °C and 16.8 cSt at 100 °C	Hydrocarbons	1 Gal.	N5316024
Nominal Viscosity: 360 cSt at 40 °C and 42 cSt at 100 °C	Hydrocarbons	500 mL	N5316004
Nominal Viscosity: 930 cSt at 40 °C and 82 cSt at 100 °C	Hydrocarbons	500 mL	N5316005

Biodiesel Standards

Description	Matrix	Size	Part No.
Biodiesel Blank	B100 Biodiesel	100 mL	N9308286
Biodiesel Blank	B100 Biodiesel	500 mL	N9308287
Sulfur @ 20 µg/g in Biodiesel	B100 Biodiesel	100 mL	N9308288
Metals in Biodiesel – Ca, K, Mg, Na, P @ 20 µg/g	B100 Biodiesel	100 g	N9308289
Multi-Element Biodiesel Standard 5 µg/g, Ca, K, Mg, Na, P	B100 Biodiesel	100 g	N9308726

Biodiesel Blends

Description	Matrix	Size	Part No.
100% High Cetane Diesel	High Cetane Diesel Fuel	20 mL	N9308290
2% (v/v) Biodiesel	High Cetane Diesel Fuel	20 mL	N9308291
5% (v/v) Biodiesel	High Cetane Diesel Fuel	20 mL	N9308292
10% (v/v) Biodiesel	High Cetane Diesel Fuel	20 mL	N9308293
15% (v/v) Biodiesel	High Cetane Diesel Fuel	20 mL	N9308294
20% (v/v) Biodiesel	High Cetane Diesel Fuel	20 mL	N9308295
100% (v/v) Biodiesel	B100 Biodiesel	20 mL	N9308296

Sulfur Standards

Description	Matrix	Size	Part No.
Polysulfide Oil Blank	13 cSt Mineral Oil	500 mL	N9308390
Sulfur @ 500 µg/g, from Polysulfide Oil	13 cSt Mineral Oil	500 mL	N9308391
Sulfur @ 1000 µg/g, from Polysulfide Oil	13 cSt Mineral Oil	500 mL	N9308392
Sulfur @ 5000 µg/g, from Polysulfide Oil	13 cSt Mineral Oil	500 mL	N9308393
Sulfur @ 1 wt%, from Polysulfide Oil	13 cSt Mineral Oil	500 mL	N9308394
Sulfur @ 5 wt%, from Polysulfide Oil	13 cSt Mineral Oil	500 mL	N9308395
Sulfur @ 0 µg/g (Blank)	#2 Diesel Fuel	500 mL	N9308714
Sulfur @ 5 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308715
Sulfur @ 10 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308716
Sulfur @ 15 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308717
Sulfur @ 20 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308718
Sulfur @ 25 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308719
Sulfur @ 50 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308720
Sulfur @ 100 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308721
Sulfur @ 500 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308722
Sulfur @ 1000 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308723
Sulfur @ 1500 µg/g, from Polysulfide Oil	#2 Diesel Fuel	500 mL	N9308724
Sulfur at 3.00wt% in Heavy Mineral Oil	75 cSt Mineral Oil	100 mL	N9307739
Sulfur @10 µg/g in B100 Biodiesel	B100 Biodiesel	100 mL	N9308727

Petroleum Physical Test Standard

Description	Matrix	Size	Part No.
ASTM D86 Distillation Standard	Diesel Fuel	500 mL	N9308728

Detection Limit Calibration Standard

Description	Matrix	Size	Part No.
Detection Limits Calibration Standard: a, Mg @ 5 µg/g; La, Li, Mn, Ni, Sr, Zn @ 50 µg/g; As, K @ 250 µg/g	Hydrocarbon Oil	4 oz.	N9307102

Coolant Standards

Matrix	Content	Volume	Part No.
Custom Standard HI 1A			
3% HNO ₃ (v/v)	Al @ 10 µg/mL, Mg @ 20 µg/mL, Ca @ 32 µg/mL, Cu, Fe, Pb, Zn @ 50 µg/mL, B @ 1000 µg/mL, P @2000 µg/mL, K @ 5000 µg/mL, Na @10,000 µg/mL	500 mL	N9308341
Custom Standard QC 1A			
3% HNO ₃ (v/v)	Al, Cu @5 µg/mL, Mg @ 10 µg/mL, Zn @ 20 µg/mL, Fe, Pb @ 25 µg/mL, Ca @ 50 µg/mL, B @ 250 µg/mL, P @1000 µg/mL, K @ 2500 µg/mL, Na @ 5000 µg/mL	500 mL	N9308342
Custom Standard LO 1A			
3% HNO ₃ (v/v)	Al, Cu @ 2 µg/mL, Mg, Zn @ 4 µg/mL, Fe, @ 5 µg/mL, Ca, Pb @ 10 µg/mL, B @ 50 µg/mL, P @ 400 µg/mL, K, Na @ 1000 µg/mL	500 mL	N9308343
Custom Standard QC 1B			
3% HNO ₃ (v/v)/ trace HF	Sn @ 10 µg/mL, Si @ 30 µg/mL, Mo @ 50 µg/mL	500 mL	N9308344
Custom Standard LO 1B			
3% HNO ₃ (v/v)/ trace HF	Sn @ 5 µg/mL, Si @ 10 µg/mL, Mo @ 20 µg/mL	500 mL	N9308345
Custom Standard HI 1B			
3% HNO ₃ (v/v)/ trace HF	Sn @ 20 µg/mL, Mo, Si @ 100 µg/mL	500 mL	N9308346

Proficiency Testing Standards

Proficiency Testing Program

The Proficiency Testing Program offered by PerkinElmer has been designed to provide laboratories with a method of monitoring their analytical performance as measured against Certified Reference Materials (CRMs).



Proficiency Testing Standards

1. Analyze a sample
2. Report the results online
3. Receive an instant response to submitted values

Confirm the accuracy of your analytical results, quickly, easily and definitively.

Description	Size	Part No.
PTP Standard for Elemental Analysis of Oils	25 g	N9308314

Note: Analyze a sample for up to 23 common elements and report the concentrations in µg/g (ppm). Enter all elements or only those that are of interest to you. Results are color-coded pass/fail indications in green (pass), yellow (borderline) and red (fail).

Description	Size	Part No.
Sample for Particle Count Analysis	125 mL	N9308725

Note: Particle count PTP test standards includes 8 channels (4,6,8,14,21,38, 50 and 70 µm). One bottle for ISO 11171 only.

Description	Size	Part No.
Viscosity PTP Test Standard	50 mL	N9308540

Note: Report viscosity values in cSt at 40 °C, 100 °C, or both

ICP-MS Single Cell Sample Introduction Kits

The Single Cell Application Module within PerkinElmer's Syngistix™ for ICP-MS software is the ideal tool for laboratories analyzing metal content in cells, either from bioaccumulation of metals or metallic nanoparticles in solution or measuring the intrinsic metal content of the cell. This unique combination of hardware and software module allows the differentiation and quantification between the media and cellular fractions of the same analyte. In a single analysis, cell metal or particulate content, cell-containing metal concentration, mass per cell and mass distribution can all be determined without the need for subsequent data processing. Coupled with the NexION® series ICP-MS, the Syngistix Single Cell Application Module is the world's first single cell ICP-MS dedicated software, delivering speed, flexibility, automation and ease-of-use.



Single Cell Micro DX Autosampler



Asperon Spray Chamber



Description	Qty.	Part No.
Single Cell Kit for NexION 1000/2000 Kit Includes:		N8150032
Asperon™ Spray Chamber	1	N8152493
Spray Chamber Drain Line	1	N8152494
Spray Chamber Addition Gas Tee 1/8 Fitting	1	N8152495
Nebulizer HEN	1	N8152496
Sample Line for HEN MEINHARD® Nebulizer	1	N8152489
UV Light Shield	1	N8152497
Plasma Light Shield	1	N8152377
Fixed 2.0 mm Injector UHP Quartz Torch	1	N8152428
Torch Cassette White	1	N8152432
Torch Injector Nut	1	N8152451
Syngistix Single Cell Software	1	N8150321
CTFE Male Barb Fitting	2	N8145017
CTFE Female Barb Fitting	2	N8145018
Orange/Red 0.19 mm i.d. PVC Pkg.12	1	N8152401
MP ² PVC Flared 0.19mm Orange/Red Pkg.12	1	N8145195
Autosampler Probe 0.15 mm	1	N0777221

Description	Part No.
Single Cell Automation Kit for NexION 1000/2000 Kit Includes:	N8150039
Includes Single Cell Micro DX Autosampler. Does not include Single Cell Kit (N8150032)	

Description	Qty.	Part No.
Single Cell Kit for NexION 350 Kit Includes:		N8140032
Asperon™ Spray Chamber	1	N8152493
Spray Chamber Drain Line	1	N8152494
Sample Line for HEN MEINHARD® Nebulizer	1	N8152489
Spray Chamber Gas Fitting	1	N8142045
Nebulizer Hen	1	N8142046
UV Light Shield	1	N8142047
Quartz Injector 2 mm	1	N8145508
Syngistix Single Cell Software	1	N8150321
CTFE Male Barb Fitting	2	N8145017
CTFE Female Barb Fitting	2	N8145018
0.19 mm ID Orange/Red Flared PVC Pkg. 12	1	N0773111
Autosampler Probe, 0.15 mm	1	N0777221
Not Included in the Kit		
Make-up Gas Mass Flow Controller Upgrade		W1028686

Description	Part No.
Single Cell Automation Kit for NexION 300/350 Kit Includes:	N8140039
Includes Single Cell Micro DX Autosampler. Does not include Single Cell Kit (N8140032)	