

## ICP 单元素标准液

ICP标准液可以直接溯源到NIST提供的标准物质。每个包装中都附有分析报告。报告中有精确含量，痕量元素杂质，成份，溯源性，出厂日期和最短保存期。



### Certipur® ICP 标准液

名称	元素	组成	浓度 1000 mg/l 订货号. [100 ml]	浓度 10000 mg/l 订货号. [100 ml]
铝	Al	Al(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70301.0100	1.70371.0100
锑	Sb	Sb <sub>2</sub> O <sub>3</sub> in HCl 7 %	1.70302.0100	
砷	As	H <sub>3</sub> AsO <sub>4</sub> in HNO <sub>3</sub> 2-3 %	1.70303.0100	
钡	Ba	Ba(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70304.0100	
铍	Be	Be <sub>4</sub> O(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub> in HNO <sub>3</sub> 2-3 %	1.70305.0100	
铋	Bi	Bi(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70306.0100	
硼	B	H <sub>3</sub> BO <sub>3</sub> in water	1.70307.0100	
镉	Cd	Cd(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70309.0100	
钙	Ca	Ca(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70308.0100	1.70373.0100
铈	Ce	Ce(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70311.0100	
铯	Cs	CsNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70310.0100	
铬	Cr	Cr(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70312.0100	1.70374.0100
钴	Co	Co(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70313.0100	1.70375.0100
铜	Cu	Cu(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70314.0100	1.70378.0100
镝	Dy	Dy <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70315.0100	
铒	Er	Er <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70316.0100	
铕	Eu	Eu <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70317.0100	
钆	Gd	Gd <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70318.0100	
镓	Ga	Ga(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70319.0100	
锗	Ge	(NH <sub>4</sub> ) <sub>2</sub> GeF <sub>6</sub> in water	1.70320.0100	
金	Au	H(AuCl <sub>4</sub> ) in HCl 7 %	1.70321.0100	
铪	Hf	HfOCl <sub>2</sub> in HCl 7 %	1.70322.0100	
钬	Ho	Ho <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70323.0100	
铟	In	In(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70324.0100	
铱	Ir	IrCl <sub>3</sub> in HCl 7 %	1.70325.0100	
铁	Fe	Fe(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub>	1.70326.0100	1.70376.0100
镧	La	La(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70327.0100	
铅	Pb	Pb(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70328.0100	1.70372.0100
锂	Li	LiNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70329.0100	
镥	Lu	Lu <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70330.0100	
镁	Mg	Mg(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70331.0100	1.70379.0100
锰	Mn	Mn(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70332.0100	1.70380.0100
汞	Hg	Hg(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 10 %	1.70333.0100	1.70384.0100
钼	Mo	(NH <sub>4</sub> ) <sub>6</sub> Mo <sub>7</sub> O <sub>24</sub> in water	1.70334.0100	
钕	Nd	Nd <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70335.0100	
镍	Ni	Ni(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70336.0100	1.70382.0100
铌	Nb	NH <sub>4</sub> NbF <sub>6</sub> in water	1.70337.0100	
锇	Os	(NH <sub>4</sub> ) <sub>2</sub> OsCl <sub>6</sub> in HCl 7 %	1.70338.0100	
钯	Pd	Pd(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70339.0100	
铂	Pt	H <sub>2</sub> PtCl <sub>6</sub> in HCl 7 %	1.70341.0100	
钾	K	KNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70342.0100	1.70377.0100
磷	P	H <sub>3</sub> PO <sub>4</sub> in water	1.70340.0100	1.70383.0100



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Senior Manager, Quality Control  
Ligr Science & Analytics  
at Merck, on the occasion of CertiPUR®  
ISO 17025 accreditation.



Certipur® ICP 单元素标准液				
名称	元素	组成	浓度 1000 mg/l 订货号. [100 ml]	浓度 10000 mg/l 订货号. [100 ml]
镨	Pr	Pr <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70343.0100	
铼	Re	NH <sub>4</sub> ReO <sub>4</sub> in water	1.70344.0100	
铑	Rh	Rh(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70345.0100	
铷	Rb	RbNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70346.0100	
钌	Ru	RuCl <sub>3</sub> in HCl 7%	1.70347.0100	
钐	Sm	Sm <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70348.0100	
钪	Sc	Sc <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 7%	1.70349.0100	
硒	Se	SeO <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70350.0100	
硅	Si	SiO <sub>2</sub> in NaOH	1.70365.0100	1.70386.0100
银	Ag	AgNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70352.0100	
钠	Na	NaNO <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70353.0100	1.70381.0100
硫	S	H <sub>2</sub> SO <sub>4</sub> in water	1.70355.0100	1.70385.0100
锶	Sr	Sr(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70354.0100	
钽	Ta	(NH <sub>4</sub> ) <sub>2</sub> TaF <sub>7</sub> in water	1.70356.0100	
碲	Te	H <sub>6</sub> TeO <sub>6</sub> in HNO <sub>3</sub> 2-3 %	1.70357.0100	
铽	Tb	Tb(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70358.0100	
铊	Tl	TlNO <sub>3</sub> in HNO <sub>3</sub> 2-3%	1.70359.0100	
铥	Tm	Tm(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70361.0100	
锡	Sn	SnCl <sub>4</sub> in HCl 7%	1.70362.0100	
钛	Ti	(NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub> in water (trace HF)	1.70363.0100	1.70387.0100
钨	W	(NH <sub>4</sub> ) <sub>2</sub> WO <sub>4</sub> in water	1.70364.0100	
钒	V	NH <sub>4</sub> VO <sub>3</sub> in HNO <sub>3</sub>	1.70366.0100	1.70388.0100
镱	Yb	Yb <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70367.0100	
钇	Y	Y(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.70368.0100	
锌	Zn	Zn(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3 %	1.70369.0100	1.70389.0100
锆	Zr	ZrOCl <sub>2</sub> in HCl	1.70370.0100	1.70390.0100

Certipur® 标准液 10 mg/l			
名称	元素	组成	订货号[100 ml]
铑	Rh	10mg/l Rh(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2-3 %	1.08525.0100
汞	Hg	10 mg/l Hg(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2-3%	1.08623.0100



## 富集同位素标准液

这些标准液专门用于IDA(同位素稀释分析)。如果需要得到非常精确的化验结果，就需要使用富集同位素标准溶液来做元素分析

新的Certipur示踪溶液经过一级标准物认证。并且证书由BAM(德国联邦材料研究和测试研究所)和IRMM(标准物质及计量研究所)签发。

Certipur® 标准物质，同位素稀释分析		
名称		订货号 No. [50 ml]
Spike Solution B-10	10mg/kg	1.70271.0050
Spike Solution Ba-135	10mg/kg	1.70272.0050
Spike Solution Cd-III	10mg/kg	1.70273.0050
Spike Solution Cr-53	10mg/kg	1.70274.0050
Spike Solution Cu-65	10mg/kg	1.70275.0050
Spike Solution Fe-57	10mg/kg	1.70276.0050
Spike Solution Mg-26	10mg/kg	1.70277.0050
Spike Solution Ni-62	10mg/kg	1.70278.0050
Spike Solution Pb-206	10mg/kg	1.70279.0050
Spike Solution Tl-203	10mg/kg	1.70280.0050
Spike Solution Zn-67	10mg/kg	1.70281.0050

2CP-MS 给分析粉煤套给漂珠中的微量元素



默克之所以选择这两个研究机构提供证明，是因为它在行业里具有领导能力。

### 为何选用默克的同位素稀释标液

- 标准溶液带有可以直接使用的分析报告说明书。这一优势尤其明显，因为有时很难找到一个符合标准化要求的原材料供应商，而且需要很长时间来准备这样的溶液。
- 提供50ml小包装的新鲜溶液
- BAM和IRMM专家撰写的使用说明。



## ICP多元素混标

多元素标准液可以直接从NIST标准物质(SRM)溯源。

每个包装中都有分析报告说明书(COA)。它包括精确的含量，成份，溯源性，出厂日期和最短保存期。

# CertiPUR<sup>®</sup> 多元素混标

## ICP 校准标准液

### Multi element standard I 19 elements, different concentrations

Order No.	1.15474.0 100
Ag	50 mg/l
Al	100 mg/l
B	15 mg/l
Ba	5 mg/l
Be	1 mg/l
Bi	200 mg/l
Cd	20 mg/l
Co	20 mg/l
Cr	25 mg/l
Cu	20 mg/l
Fe	15 mg/l
Ga	150 mg/l
In	200 mg/l
Mn	5 mg/l
Ni	50 mg/l
Pb	200 mg/l
Sr	1mg/l
Tl	400 mg/l
Zn	20 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard III Earth alkali elements

Order No.	1.15626.0 100
Ba	1000 mg/l
Ca	1000 mg/l
Mg	1000 mg/l
Sr	1000 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard IV 23 elements, 1000 mg/l

Order No.	1.11355.0 100
Ag	1000 mg/l
Al	1000 mg/l
B	1000 mg/l
Ba	1000 mg/l
Bi	1000 mg/l
Ca	1000 mg/l
Cd	1000 mg/l
Co	1000 mg/l
Cr	1000 mg/l
Cu	1000 mg/l
Fe	1000 mg/l
Ga	1000 mg/l
In	1000 mg/l
K	1000 mg/l
Li	1000 mg/l
Mg	1000 mg/l
Mn	1000 mg/l
Na	1000 mg/l
Ni	1000 mg/l
Pb	1000 mg/l
Sr	1000 mg/l
Tl	1000 mg/l
Zn	1000 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard VIII Similar to Multi IV, but no silver

Order No.	1.09492.0 100
Al	100 mg/l
B	100 mg/l
Ba	100 mg/l
Be	100 mg/l
Bi	100 mg/l
Ca	100 mg/l
Cd	100 mg/l
Co	100 mg/l
Cr	100 mg/l
Cu	100 mg/l
Fe	100 mg/l
Ga	100 mg/l
K	100 mg/l
Li	100 mg/l
Mg	100 mg/l
Mn	100 mg/l
Na	100 mg/l
Ni	100 mg/l
Pb	100 mg/l
Se	100 mg/l
Sr	100 mg/l
Te	100 mg/l
Tl	100 mg/l
Zn	100 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard IX Toxic elements

Order No.	1.09494.0 100
As	100 mg/l
Be	100 mg/l
Cd	100 mg/l
Cr (VI)	100 mg/l
Hg	100 mg/l
Ni	100 mg/l
Pb	100 mg/l
Se	100 mg/l
Tl	100 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard X For surface water, equivalent to NIST SRM 1643d

Order No.	1.09493.0 100
As	50 µg/l
B	100 µg/l
Ba	50 µg/l
Be	20 µg/l
Bi	10 µg/l
Ca	35000 µg/l
Cd	20 µg/l
Co	25 µg/l
Cr	20 µg/l
Cu	20 µg/l
Fe	100 µg/l
K	3000 µg/l
Mg	15000 µg/l
Mn	30 µg/l
Mo	100 µg/l
Na	8000 µg/l
Ni	50 µg/l
Pb	25 µg/l
Se	10 µg/l
Sr	100 µg/l
Tl	10 µg/l
V	50 µg/l
Zn	50 µg/l
Matrix	1 mol/l HNO <sub>3</sub>

### Multi element standard XI For sewage sludge

Order No.	1.0949 1.0100
Cd	10 mg/l
Cr	900 mg/l
Cu	800 mg/l
Hg	8 mg/l
Ni	200 mg/l
Pb	900 mg/l
Zn	2500 mg/l
Matrix	1 mol/l HNO <sub>3</sub>



## ICP/MS 校准标准液

Multi element standard XII HCL soluble elements	
Order No.	1.09490.0 100
As	100 mg/l
Mo	100 mg/l
P	100 mg/l
S	100 mg/l
Si	100 mg/l
W	100 mg/l
V	100 mg/l
Zr	100 mg/l
Matrix	HCl / HF / NH <sub>4</sub> OH

Multi element standard XIII Trace metals	
Order No.	1.09480.0 100
Al	500 mg/l
As	100 mg/l
Be	100 mg/l
Cd	25 mg/l
Co	100 mg/l
Cr	100 mg/l
Cu	100 mg/l
Fe	100 mg/l
Hg	5 mg/l
Mn	100 mg/l
Ni	100 mg/l
Pb	100 mg/l
Se	25 mg/l
V	250 mg/l
Zn	100 mg/l
Matrix	5 % HNO <sub>3</sub>

Multi element standard XVI Quality control, 21 elements	
Order No.	1.09487.0 100
As	100 mg/l
Be	100 mg/l
Ca	100 mg/l
Cd	100 mg/l
Co	100 mg/l
Cr	100 mg/l
Cu	100 mg/l
Fe	100 mg/l
Li	100 mg/l
Mg	100 mg/l
Mn	100 mg/l
Mo	100 mg/l
Ni	100 mg/l
Pb	100 mg/l
Sb	100 mg/l
Se	100 mg/l
Sr	100 mg/l
Ti	100 mg/l
Tl	100 mg/l
V	100 mg/l
Zn	100 mg/l
Matrix	5 % HNO <sub>3</sub>

Multi element standard XVII HCl soluble elements	
Order No.	1.09495.0 100
Hf	100 mg/l
Ir	100 mg/l
Sb	100 mg/l
Sn	100 mg/l
Ta	100 mg/l
Ti	100 mg/l
Zr	100 mg/l
Matrix	15 % HCl

Multi element standard VI calibration in ICP MS, 30 elements	
Order No.	1.10580.0 100
Ag	10 mg/l
Al	10 mg/l
As	100 mg/l
B	100 mg/l
Ba	10 mg/l
Be	100 mg/l
Bi	10 mg/l
Ca	1000 mg/l
Cd	10 mg/l
Co	10 mg/l
Cr	10 mg/l
Cu	10 mg/l
Fe	100 mg/l
Ga	10 mg/l
K	10 mg/l
Li	10 mg/l
Mg	10 mg/l
Mn	10 mg/l
Mo	10 mg/l
Na	10 mg/l
Ni	10 mg/l
Pb	10 mg/l
Rb	10 mg/l
Se	100 mg/l
Sr	10 mg/l
Te	10 mg/l
Tl	10 mg/l
U	10 mg/l
V	10 mg/l
Zn	100 mg/l
Matrix	1 mol/l HNO <sub>3</sub>

Multi element standard XXI Set, contains 274473 and 108623	
Order No.	1.09498.000 1
Ag	10 mg/l
Al	10 mg/l
As	10 mg/l
Ba	10 mg/l
Be	10 mg/l
Bi	10 mg/l
Ca	10 mg/l
Cd	10 mg/l
Co	10 mg/l
Cr	10 mg/l
Cs	10 mg/l
Cu	10 mg/l
Fe	10 mg/l
Ga	10 mg/l
Hg	10 mg/l
In	10 mg/l
K	10 mg/l
Li	10 mg/l
Mg	10 mg/l
Mn	10 mg/l
Na	10 mg/l
Ni	10 mg/l
Pb	10 mg/l
Rb	10 mg/l
Se	10 mg/l
Sr	10 mg/l
Tl	10 mg/l
U	10 mg/l
V	10 mg/l
Zn	10 mg/l
Matrix	5 % HNO <sub>3</sub> (Hg in separate bottle)

### Wavelength calibration standards

Multi element standard V 26 elements, designed for Maxim	
Order No. 1.10714.0500	
Al	20 mg/l
As	20 mg/l
B	2 mg/l
Ba	2 mg/l
Be	1 mg/l
Ca	10 mg/l
Cd	2 mg/l
Cr	2 mg/l
Cu	2 mg/l
Fe	2 mg/l
Hg	5 mg/l
K	100 mg/l
Li	2 mg/l
Mg	1 mg/l
Mn	1 mg/l
Na	20 mg/l
Ni	5 mg/l
P	10 mg/l
Pb	20 mg/l
Sc	1 mg/l
Se	20 mg/l
Sr	1 mg/l
Te	20 mg/l
Ti	2 mg/l
Y	1 mg/l
Zn	2 mg/l
Matrix	5% HCl

Multi element standard XIV in HCl, 11 elements	
Order No. 1.09481.0500	
As	20 mg/l
K	100 mg/l
La	20 mg/l
Li	20 mg/l
Mn	20 mg/l
Mo	20 mg/l
Na	20 mg/l
Ni	20 mg/l
P	100 mg/l
S	100 mg/l
Sc	20 mg/l
Matrix	2% HCl

### ICP/MS optimization solution

Multi element standard XX to setup the plasma	
Order No. 1.09497.1000	
Ba	10 µg/l
Ce	10 µg/l
Cd	10 µg/l
Cu	10 µg/l
Ge	10 µg/l
Mg	10 µg/l
Pb	10 µg/l
Rh	10 µg/l
Sc	10 µg/l
Tb	10 µg/l
Tl	10 µg/l
Matrix	1% HNO <sub>3</sub>

### ICP/MS optimization solution

Multi element standard XXII for testing ICP MS instruments	
Order No. 1.09499.0100	
Cd	0,2 mg/l
Cu	0,2 mg/l
Mg	0,2 mg/l
Pb	0,2 mg/l
Rh	0,2 mg/l
Matrix	2% HNO <sub>3</sub>

### ISP/MS detection limit standard

Multi element standard XIX	
Order No. 1.09496.0100	
Be	10 µg/l
Co	10 µg/l
In	10 µg/l
Tl	10 µg/l
U	10 µg/l
Matrix	1% HNO <sub>3</sub>

### Graphit furnace AAS standards

Multi element standard XVII for calibration	
Order No. 1.09500.0100	
Ag	10 mg/l
Al	100 mg/l
As	100 mg/l
Ba	50 mg/l
Be	5 mg/l
Cd	5 mg/l
Co	50 mg/l
Cr	20 mg/l
Cu	50 mg/l
Fe	20 mg/l
Mn	20 mg/l
Ni	50 mg/l
Pb	100 mg/l
Sb	100 mg/l
Se	100 mg/l
Tl	100 mg/l
Matrix	5% HNO <sub>3</sub>

### Cationic chromatography standards

Multi element standard VII for cationic chromatography	
Order No. 1.10322.0100	
Ba	100 mg/l
Ca	100 mg/l
K	100 mg/l
Li	100 mg/l
Mg	100 mg/l
Mn	100 mg/l
Na	100 mg/l
NH <sub>4</sub>	100 mg/l
Sr	100 mg/l
Matrix	0.001 mol/l HNO <sub>3</sub>