FUJIFILM
Value from Innovation

Wako

Standard Solution for ICP Analysis

Trace elements (metals) must be controlled in a wide range of fields, including electronic materials, water, food, and pharmaceuticals. Because simultaneous multi-element analysis is widely used for trace elemental analysis, information on impurity elements in standard solutions is important. Fujifilm Wako offers high-purity elemental standard solutions with low levels of impurities for ICP analysis.
From March 2023, Fujifilm Wako has become the first company in Japan to obtain comprehensive accreditation (flexible scope of accreditation) as an inorganic reference material manufacturer based on ASNITE accreditation. Fujifilm Wako offers a standard solution for ICP analysis as SI traceable certified reference material (CRM).

Features

- ✓ Guarantee impurity elements on the ppb order by using ICP-MS
- ✓ Attach Wako product manual with information on impurity elements to the product
- ✓ Use of raw materials that do not contain other elements in consideration of impurity elements
- ✓ Certified reference material (CRM) whose concentration value is SI traceable

Product line up

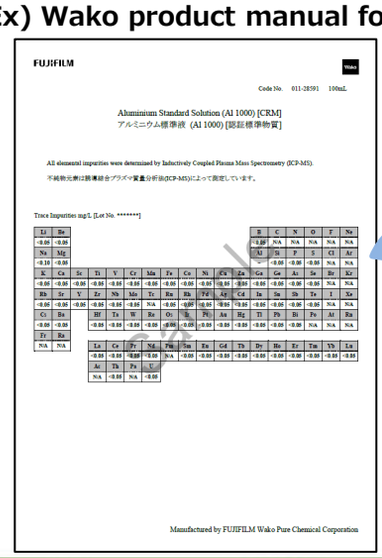
: for ICP Analysis (CRM)
: for ICP Analysis (non-CRM)

Li	Be												B	C	N	O	F	Ne
Na	Mg												Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr(Ⅲ)	Cr(VI)	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo		Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba		Hf	Ta	W		Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra																	

La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Ac	Th	Pa	U											

Product manual

Wako product manual containing information of impurity elements is attached with the product.
Ex) Wako product manual for Aluminium Standard Solution (Al 1000)


FUJIFILM

Code No. 011-28591 100mL

Aluminium Standard Solution (Al 1000) [CRM]
アルミニウム標準液 (Al 1000) [認証標準物質]

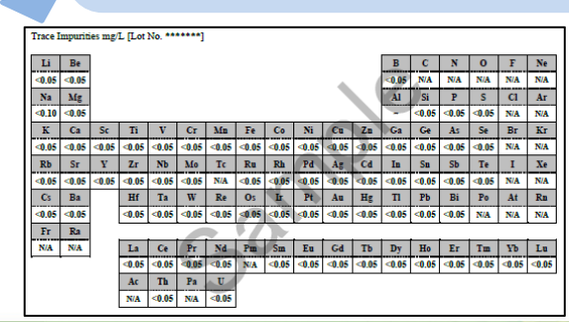
All elemental impurities were determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS).
不純物元素は誘導結合プラズマ質量分析法(ICP-MS)によって測定しています。

Trace Impurities mg/L [Lot No. *******]

Manufactured by FUJIFILM Wako Pure Chemical Corporation

Expansion

- ➢ Wako product manual is attached with each products.
- ➢ Information of impurity elements is described.
- ➢ The concentration measurement method are described


Trace Impurities mg/L [Lot No. *******]

Li	Be										B	C	N	O	F	Ne
<0.05	<0.05										<0.05	N/A	N/A	N/A	N/A	N/A
Na	Mg										Al	Si	P	S	Cl	Ar
<0.10	<0.05										-	<0.05	<0.05	<0.05	N/A	N/A
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A
Fr	Ra																
N/A	N/A																

La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
<0.05	<0.05	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ac	Th	Pa	U											
N/A	<0.05	N/A	<0.05											

Product line up

Code No.	Product Name		Composition	Concentration (mg/L)	Package Size
191-19311	Silver Standard Solution [CRM]	Ag	$AgNO_3$ in 5 w/w% HNO_3	1,000	100
011-28591	Aluminium Standard Solution [CRM]	Al	$Al(NO_3)_3 \cdot 9H_2O$ in 5 w/w% HNO_3	1,000	100
017-28711	Arsenic Standard Solution [CRM]	As	As_2O_3 in 5 w/w% HNO_3	1,000	100
077-06911	Gold Standard Solution [CRM]	Au	$HAuCl_4 \cdot 4H_2O$ in 5 w/w% HCl	1,000	100
024-19971	Boron Standard Solution [CRM]	B	H_3BO_3 in H_2O	1,000	100
025-19881	Barium Standard Solution [CRM]	Ba	$BaCO_3$ in 5 w/w% HNO_3	1,000	100
021-19981	Bismuth Standard Solution [CRM]	Bi	$Bi(NO_3)_3 \cdot 5H_2O$ in 5 w/w% HNO_3	1,000	100
034-26121	Calcium Standard Solution [CRM]	Ca	$CaCO_3$ in 5 w/w% HNO_3	1,000	100
036-26201	Cadmium Standard Solution [CRM]	Cd	Cd in 0.5 w/w% HNO_3	1,000	100
030-25981	Cerium Standard Solution [CRM]	Ce	CeO_2 in 5 w/w% HNO_3 + trace H_2O_2	1,000	100
035-26151	Cobalt Standard Solution [CRM]	Co	Co in 5 w/w% HNO_3	1,000	100
033-26211	Chromium(III) Standard Solution [CRM]	Cr(III)	$Cr(NO_3)_3 \cdot 9H_2O$ in 5 w/w% HNO_3	1,000	100
039-25451	Chromium(VI) Standard Solution	Cr(VI)	CrO_3 in 5 w/w% HNO_3	1,000	100
036-26321	Cesium Standard Solution [CRM]	Cs	$CsNO_3$ in H_2O	1,000	100
033-26191	Copper Standard Solution [CRM]	Cu	Cu in 5 w/w% HNO_3	1,000	100
040-35171	Dysprosium Standard Solution [CRM]	Dy	Dy_2O_3 in 5 w/w% HNO_3	1,000	100
052-09541	Erbium Standard Solution [CRM]	Er	Er_2O_3 in 5 w/w% HNO_3	1,000	100
055-09531	Europium Standard Solution [CRM]	Eu	Eu_2O_3 in 5 w/w% HNO_3	1,000	100
092-07541	Iron Standard Solution [CRM]	Fe	Fe in 5 w/w% HNO_3	1,000	100
078-06941	Gallium Standard Solution [CRM]	Ga	Ga in 5 w/w% HNO_3	1,000	100
072-06961	Gadolinium Standard Solution [CRM]	Gd	Gd_2O_3 in 5 w/w% HNO_3	1,000	100
075-06951	Germanium Standard Solution [CRM]	Ge	$(NH_4)_2GeF_6$ in H_2O	1,000	100
085-10801	Hafnium Standard Solution [CRM]	Hf	$HfCl_4$ in 5 w/w% HCl	1,000	100
132-19541	Mercury Standard Solution [CRM]	Hg	Hg in 5 w/w% HNO_3	1,000	100
082-10811	Holmium Standard Solution [CRM]	Ho	Ho_2O_3 in 5 w/w% HNO_3	1,000	100
095-07531	Indium Standard Solution [CRM]	In	In in 5 w/w% HNO_3	1,000	100
093-07331	Iridium Standard Solution	Ir	$H_2IrCl_6 \cdot nH_2O$ in 5 w/w% HCl	1,000	100
164-29651	Potassium Standard Solution [CRM]	K	KNO_3 in H_2O	1,000	100
120-06971	Lanthanum Standard Solution [CRM]	La	La_2O_3 in 5 w/w% HNO_3	1,000	100
124-07111	Lithium Standard Solution [CRM]	Li	$LiNO_3$ in 5 w/w% HNO_3	1,000	100
129-06941	Lutetium Standard Solution [CRM]	Lu	Lu_2O_3 in 5 w/w% HNO_3	1,000	100
134-19481	Magnesium Standard Solution [CRM]	Mg	MgO in 5 w/w% HNO_3	1,000	100
130-19461	Manganese Standard Solution [CRM]	Mn	Mn in 5 w/w% HNO_3	1,000	100
130-19601	Molybdenum Standard Solution [CRM]	Mo	$(NH_4)_6Mo_7O_{24} \cdot 4H_2O$ in H_2O	1,000	100
195-19331	Sodium Standard Solution [CRM]	Na	$NaNO_3$ in H_2O	1,000	100
146-10221	Niobium Standard Solution [CRM]	Nb	Nb in 2 w/w% HNO_3 + 0.5 w/w% HF	1,000	100

Code No.	Product Name		Composition	Concentration (mg/L)	Package Size
143-10091	Neodymium Standard Solution [CRM]	Nd	Nd_2O_3 in 5 w/w% HNO_3	1,000	100
141-10151	Nickel Standard Solution [CRM]	Ni	NiO in 5 w/w% HNO_3	1,000	100
157-03601	Osmium Standard Solution	Os	$(NH_4)_2OsCl_6$ in 7 w/w% HCl	1,000	100
160-29631	Phosphorus Standard Solution [CRM]	P	H_3PO_4 in H_2O	1,000	100
127-06981	Lead Standard Solution [CRM]	Pb	$Pb(NO_3)_2$ in 5 w/w% HNO_3	1,000	100
167-29641	Palladium Standard Solution [CRM]	Pd	$PdCl_2$ in 5 w/w% HCl	1,000	100
161-29801	Praseodymium Standard Solution [CRM]	Pr	Pr_2O_3 in 5 w/w% HNO_3	1,000	100
162-29691	Platinum Standard Solution [CRM]	Pt	$H_2PtCl_6 \cdot 6H_2O$ in 5 w/w% HCl	1,000	100
183-03721	Rubidium Standard Solution [CRM]	Rb	$RbNO_3$ in H_2O	1,000	100
186-03711	Rhenium Standard Solution [CRM]	Re	Re in 5 w/w% HNO_3	1,000	100
188-03651	Rhodium Standard Solution [CRM]	Rh	$RhCl_3 \cdot 3H_2O$ in 5 w/w% HCl	1,000	100
182-03431	Ruthenium Standard Solution	Ru	$RuCl_3 \cdot nH_2O$ in 5 w/w% HNO_3	1,000	100
194-19301	Sulfur Standard Solution [CRM]	S	H_2SO_4 in H_2O	1,000	100
014-28721	Antimony Standard Solution [CRM]	Sb	Sb_2O_3 in 5 w/w% HNO_3 + 0.5 w/w% L-(+)-$C_4H_6O_6$	1,000	100
198-19441	Scandium Standard Solution [CRM]	Sc	Sc_2O_3 in 5 w/w% HNO_3	1,000	100
198-19321	Selenium Standard Solution [CRM]	Se	SeO_2 in 5 w/w% HNO_3	1,000	100
196-19361	Silicon Standard Solution [CRM]	Si	$(NH_4)_2SiF_6$ in H_2O	1,000	100
199-19471	Samarium Standard Solution [CRM]	Sm	Sm_2O_3 in 5 w/w% HNO_3	1,000	100
206-21601	Tin Standard Solution [CRM]	Sn	$SnCl_4$ in 5 w/w% HCl	1,000	100
191-19431	Strontium Standard Solution [CRM]	Sr	$SrCO_3$ in 5 w/w% HNO_3	1,000	100
200-21741	Tantalum Standard Solution [CRM]	Ta	Ta in 2 w/w% HNO_3 + 0.5 w/w% HF	1,000	100
202-21561	Terbium Standard Solution [CRM]	Tb	Tb_2O_3 in 5 w/w% HNO_3	1,000	100
202-21701	Tellurium Standard Solution [CRM]	Te	H_6TeO_6 in 5 w/w% HNO_3	1,000	100
204-21641	Titanium Standard Solution [CRM]	Ti	$(NH_4)_2TiF_6$ in H_2O	1,000	100
206-21721	Thallium Standard Solution [CRM]	Tl	$TlNO_3$ in 5 w/w% HNO_3	1,000	100
203-21731	Thulium Standard Solution [CRM]	Tm	Tm_2O_3 in 5 w/w% HNO_3	1,000	100
222-02501	Vanadium Standard Solution [CRM]	V	NH_4VO_3 in 5 w/w% HNO_3 + 0.2 w/w% $H_2C_2O_4 \cdot 2H_2O$	1,000	100
207-21751	Tungsten Standard Solution [CRM]	W	W in 5 w/w% HNO_3 + 0.5 w/w% HF	1,000	100
259-00711	Yttrium Standard Solution [CRM]	Y	Y_2O_3 in 5 w/w% HNO_3	1,000	100
256-00721	Ytterbium Standard Solution [CRM]	Yb	Yb_2O_3 in 5 w/w% HNO_3	1,000	100
266-02341	Zinc Standard Solution [CRM]	Zn	ZnO in 5 w/w% HNO_3	1,000	100

Please check our website for details.
TOP > Analytical Chemistry > Elemental Analysis > Single Element Standard Solutions > Standard Solution for ICP Analysis
https://labchem-wako.fujifilm.com/us/category/00442.html

Multi-element Mixture Standard Solution for ICH Q3D

Fujiflm Wako offers a variety of mixture standard solutions that can be used to evaluate oral and parenteral drugs for risk assessment in accordance with the Guideline for Elemental Impurities (ICH Q3D).

What are the guidelines for elemental impurities in pharmaceuticals (ICH Q3D)?

ICH Q3D is one of the issues discussed by the International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH).



Features

- ✓ Concentration is set with reference to the “Permitted Daily Exposure (PDE) for each element of toxicological concern”.
- ✓ SI traceable (NIST traceable) certified reference material (CRM).

Product line up

Code No.	Product Name	Grade	Package Volume
138-19641	Multielement Standard Solution for ICH Q3D Oral Preparation[CRM] Cd: 5, Pb: 5, As: 15, Co: 50, V: 100, Ni: 200 (mg/L) in 5 w/w% NHO_3	for ICP Analysis	100 mL
133-19831	Multielement Standard Solution for ICH Q3D Injection [CRM] Cd: 2, Pb: 5, As: 15, Co: 5, V: 10, Ni: 20, Li: 250, Sb: 90, Cu: 300 (mg/L) in 5 w/w% NHO_3	for ICP Analysis	100 mL
133-18851	Mercury Standard Solution for ICH Q3D (Hg 30) Hg: 30 (mg/L) in 5 w/w% NHO_3	for ICP Analysis	100 mL

Please check our website for details.
TOP > Analytical Chemistry > Elemental Analysis > Mixture Element Standard Solutions > Multielement Mixture Standard Solutions for ICP Analysis > Multielement Standard Solution for ICH Q3D Injection
https://labchem-wako.fujifilm.com/us/product/detail/W01W0113-1881.html

Listed products are intended for laboratory research use only, and not to be used for drug, food or human use. Please visit each region's website for product information.
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