



Specification

Certipur[®] Certified Reference Material

Manufacturer:	Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany, Tel. +49(0)6151 720
Accreditation:	Merck KGaA is accredited by the German accreditation authority DAkkS as calibration laboratory (Reg. No. D-K-15185-01-00) according to DIN EN ISO/IEC 17025 .
Description of CRM:	Element standard solution 1000 mg/l
Traceability:	Element standard solutions are measured applying high precision ICP-OES and are directly traceable to the corresponding NIST SRM[®] <i>NIST: National Institute of Standards and Technology, Gaithersburg, USA.</i>
Minimum shelf life:	3 years
Nominal value:	1000 mg/l
Specification:	990 – 1010 mg/l ± Measurement uncertainty

The certified value of the element mass fractions is measured lot specifically in mg/kg. Effective values can be found in the lot specific Certificate of Analysis. The measurement uncertainty in mg/kg is shown in the table below. Effective values of element mass concentrations are always in the range of 990 – 1010 mg/l. Method of analysis is ICP-OES, if not mentioned otherwise.



Specification

Art. No.	Element	Description of CRM	Measurement uncertainty** (mg/kg)
119770	Al	Aluminium standard solution	± 2 mg/kg
170204	Sb	Antimony standard solution	± 3 mg/kg
119773	As	Arsenic standard solution	± 2 mg/kg
119774	Ba	Barium standard solution	± 4 mg/kg
170207	Be	Beryllium standard solution	± 4 mg/kg
119804	Bi	Bismuth standard solution	± 3 mg/kg
119500	B	Boron standard solution	± 2 mg/kg
119777	Cd	Cadmium standard solution	± 2 mg/kg
119778	Ca	Calcium standard solution	± 2 mg/kg
170212	Cs	Cesium standard solution	± 4 mg/kg
119779	Cr	Chromium standard solution	± 3 mg/kg
119785	Co	Cobalt standard solution	± 3 mg/kg
119786	Cu	Copper standard solution	± 3 mg/kg
170216	Au	Gold standard solution	± 3 mg/kg
119504	In	Indium standard solution	± 4 mg/kg
119781	Fe	Iron standard solution	± 3 mg/kg
119776	Pb	Lead standard solution	± 2 mg/kg
170223	Li	Lithium standard solution	± 5 mg/kg
119788	Mg	Magnesium standard solution	± 3 mg/kg
119789	Mn	Manganese standard solution	± 3 mg/kg
170226	Hg	Mercury standard solution	± 6 mg/kg
170227	Mo	Molybdenum standard solution	± 4 mg/kg
119792	Ni	Nickel standard solution	± 3 mg/kg
114282	Pd	Palladium standard solution	± 3 mg/kg
170219	Pt	Platinum standard solution	± 4 mg/kg
170230	K	Potassium standard solution	± 4 mg/kg
119513	Sc	Scandium standard solution	± 4 mg/kg
119796	Se	Selenium standard solution	± 6 mg/kg
112310	Si	Silicon standard solution	± 2 mg/l (*)
170236	Si	Silicon standard solution	± 4 mg/kg
119797	Ag	Silver standard solution	± 4 mg/kg
170238	Na	Sodium standard solution	± 3 mg/kg
119799	Sr	Strontium standard solution	± 4 mg/kg
119514	Te	Tellurium standard solution	± 4 mg/kg
119801	Tl	Thallium standard solution	± 3 mg/kg
170242	Sn	Tin standard solution	± 3 mg/kg
170243	Ti	Titanium standard solution	± 3 mg/kg
170244	W	Tungsten standard solution	± 4 mg/kg
170245	V	Vanadium standard solution	± 3 mg/kg
119809	Y	Yttrium standard solution	± 3 mg/kg
119806	Zn	Zinc standard solution	± 4 mg/kg
170234	Zr	Zirconium standard solution	± 3 mg/kg

(*) Method of Analysis: acidimetric titration; Standard is not within accreditation scope of DIN EN ISO/IEC 17025

****The measurement uncertainty can vary depending on the primary reference material.**