



Specification

Certipur[®] Certified Reference Material

Manufacturer:	Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany
Description of CRM:	ICP multi-element standard XIII
Art. No.:	1.09480.0100
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
Matrix:	HNO ₃ 6%
Nominal value:	See table below
Specification:	See table below

The effective element mass fractions are measured lot specifically.
The certified effective mass concentrations and the measurement uncertainties are calculated and shown in the table below.

Element	Specification mg/l	Uncertainty** mg/l	NIST Standard Reference Material
Al	445 - 545	± 25	SRM 3101a
As	90 - 110	± 5	SRM 3103a
Be	90 - 110	± 5	SRM 3105a
Cd	22.5 - 27.5	± 1.5	SRM 3108
Cr	90 - 110	± 5	SRM 3113
Co	90 - 110	± 5	SRM 3112a
Cu	90 - 110	± 5	SRM 3114
Fe	90 - 110	± 5	SRM 3126a
Hg	4.5 - 5.5	± 0.5	SRM 3133
Mn	90 - 110	± 5	SRM 3132
Ni	90 - 110	± 5	SRM 3136
Pb	90 - 110	± 5	SRM 3128
Se	22.5 - 27.5	± 1.5	SRM 3149
V	225 - 275	± 12	SRM 3165
Zn	90 - 110	± 5	SRM 3168a

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