



Specification

Certipur[®] Certified Reference Material

Manufacturer:	Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany
Description of CRM:	ICP multi-element standard X
Art. No.:	1.09493.0100
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 µg/l	Uncertainty** µg/l	NIST Standard Reference Material
As	45 - 55	± 5	SRM 3103a
B	90 - 110	± 10	SRM 3107
Ba	45 - 55	± 5	SRM 3104a
Be	18 - 22	± 5	SRM 3105a
Bi	9 - 11	± 5	SRM 3106
Ca	31500 - 38500	± 1000	SRM 3109a
Cd	18 - 22	± 5	SRM 3108
Cr	18 - 22	± 5	SRM 3112a
Co	22.5 - 27.5	± 5	SRM 3113
Cu	18 - 22	± 5	SRM 3114
Fe	90 - 110	± 10	SRM 3126a
K	2700 - 3300	± 500	SRM 3141a
Mg	13500 - 16500	± 500	SRM 3131a
Mn	27 - 33	± 5	SRM 3132
Mo	90 - 110	± 10	SRM 3134
Na	7200 - 8800	± 500	SRM 3152a
Ni	45 - 55	± 5	SRM 3136
Pb	22.5 - 27.5	± 5	SRM 3128
Se	9 - 11	± 5	SRM 3149
Sr	90 - 110	± 10	SRM 3153a
Tl	9 - 11	± 5	SRM 3158
V	45 - 55	± 5	SRM 3165
Zn	45 - 55	± 5	SRM 3168a

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