



**SPECTRAPURE
STANDARDS AS**

Certificate of Analysis

SPS-WW2 Batch 107

Reference Material for Measurement of Elements in Waste Waters

This Reference Material is intended for daily use in conjunction with measurement of elements in waste waters. The water solution contains 13 elements with concentrations traceable to ultrapure metals or stoichiometrically well defined substances. The certified values are based on a gravimetric procedure, i.e. weight per volume composition of the primary reference material dissolved in high purity sub-distilled acids. The primary reference materials used in the production have been traced to Standard Reference Materials issued by National Institute of Standards and Technology (USA) by chemical measurements applying inductively coupled plasma atomic emission spectrometry and/or inductively coupled plasma mass spectrometry.

Stability: The certificate is valid for 3 years from the production date (February 4, 2004) provided that the sample solution is kept tightly capped and stored under normal laboratory conditions (less than 30 °C). The solution contains 0.5% nitric acid (W/V).

Element	Concentration in ng/mL (20 °C) ^a
Al	10000 ± 50
As	500 ± 3
Cd	100.0 ± 0.5
Co	300 ± 2
Cr	1000 ± 5
Cu	2000 ± 10
Fe	5000 ± 25
Mn	2000 ± 10
Ni	5000 ± 25
P	5000 ± 25
Pb	500 ± 3
V	500 ± 3
Zn	3000 ± 15

^a The uncertainties (half width of the 95 % confidence intervals) listed for the individual elements is based on scientific judgement and represents an estimate of the combined effects of any error, attributed to gravimetric and volumetric procedures, purity of the source material and possible contamination throughout the production steps.

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Certificate revision 1.0

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