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CERTIFICATE OF ANALYSIS

Product: Standard Solution of: Iridium (Ir) concentration 1.000 g/l in 10% Hydrochloric Acid (HCl)

Batch 17383401

IR0011

Quality Release Date 05.08.2016

Expiry Date: 07.2019

Analysis	Batch Value (mg/l)	Specifications (mg/l)
concentration (Ir)	**1002.9 ± 6.0** [(a)]	**1000**

Density: 1.045 g/cm^3 at 20 °C

Preparation
This certified reference material is produced in a clean room, using a highest purity starting material, acid from sub-boiling and 0.055 µS/cm deionized water. The low-density polyethylene bottle was decontaminated by leaching with 0.055 µS/cm deionized water and triple rinse.
The instructions of ISO Guide 34 were considered for the preparation of this solution.
Contains: $IrCl_3$ 99.95%

Traceability
This standard is traceable to IVL CRM No CGIR1-1 Lot F2-IR01059 The certified value was obtained using ICP/OES calibration according to calibration procedure (a) WQP 5.15.1.1
The calibration curve is drawn using a series of standard solutions prepared from a certified reference material traceable to NIST (SRM) and accredited by laboratories/producers in compliance with ISO/IEC 17025 and/or ISO Guide 34.

Uncertainty
The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor K=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA 4/02

Measurement
Batch value certified at the time of measurement.
The certified value is calculated by means of both gravimetric preparation and ICP-OES, AAS analysis.

Hazardous
The normal laboratory safety precautions should be observed when working with this standard.
Please refer to Safety Data Sheet (SDS) to further details.

Homogeneity
This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous.
To ensure sufficient homogeneity of the sample prior to use, mix thoroughly by shaking.

Storage and use
For ICP spectrometer calibration.
If stored unopened in the original packaging, this solution is stable for 3 years from the release date. Shelf life is also limited by the effect of transpiration of solvent through the unopened bottle walls at an average of <0.1% per year. Once the bottle is opened, keep tightly closed at room temperature in the original packaging.

Do not pipette directly from the bottle. Do not pour the used solution back in the bottle.
This standard can be used directly or can be diluted in an appropriate high-purity matrix.
Obtained concentration (in mg/l) after dilution is a result from the multiplication of certified value of standard concentration and the volume used for dilution and divided into the final volume used for dilution.

We recommend that the material used be leached with acids.
We suggest rejecting the solution six months after opening.

This document is designed and the certified value(s) and uncertainty(ies) are determined in accordance with ISO Guide 31, ISO Guide 35 and Eurachem/CITAC Guides.
The product is produced by laboratory accredited to ISO Guide 34 and ISO/IEC 17025

Signature:  (M. Canet)

This certificate does not release the user from their control upon receipt of the goods. You can get a copy of any of our COA from our website: www.scharlab.com

Trace impurities in the actual solution reported in ppm:
(all values below are nominal and not certified)

Ag	ND	<0.007	Cu	D	0.002	La	ND	<0.010	Pr	ND	<0.037	Ta	ND	<0.028
Al	ND	<0.047	Dy	ND	<0.010	Li	ND	<0.001	Pt	ND	<0.030	Tb	ND	<0.055
As	ND	<0.080	Er	ND	<0.010	Lu	ND	<0.001	Rb	ND	<0.0001	Te	ND	<0.041
Au	ND	<0.017	Eu	ND	<0.0027	Mg	D	0.002	Re	ND	<0.006	Th	ND	<0.065
B	ND	<0.005	Fe	ND	<0.0062	Mn	ND	<0.0016	Rh	ND	<0.060	Ti	ND	<0.0038
Ba	ND	<0.004	Ga	ND	<0.046	Mo	ND	<0.014	Ru	ND	<0.030	Tl	ND	<0.0001
Be	ND	<0.0007	Gd	ND	<0.014	Na	D	0.041	S	ND	<0.005	Tm	ND	<0.0052
Bi	ND	<0.034	Ge	ND	<0.048	Nb	ND	<0.036	Sb	ND	<0.0001	U	ND	<0.300
Ca	D	0.067	Hf	ND	<0.015	Nd	ND	<0.187	Sc	ND	<0.0015	V	ND	<0.005
Cd	D	0.02	Hg	ND	<0.061	Ni	ND	<0.015	Se	ND	<0.075	W	ND	<0.0055
Ce	ND	<0.060	Ho	ND	<0.0057	Os	ND	<0.080	Si	D	0.3	Y	ND	<0.0035
Co	ND	<0.006	In	ND	<0.120	P	ND	<0.076	Sm	ND	<0.043	Yb	ND	<0.0018
Cr	ND	<0.007	Ir		*	Pb	ND	<0.042	Sn	ND	<0.025	Zn	D	0.006
Cs	ND	<0.0005	K	D	0.04	Pd	ND	<0.044	Sr	ND	<0.0008	Zr	ND	<0.0077