



REFERENCE MATERIAL - ISO 24018

METAL	SIZE	WEIGHT	SPECIFICATIONS
Au ≥ 999.6‰	∅ 30 mm, ∓ 10 mm	ca. 136 g	Specifications for 14 impurities



THIS REFERENCE MATERIAL PRODUCED UNDER ISO 17034 ACCREDITATION IS PERFECT TO CHECK METHODS USED TO VALIDATED ISO 24018 GOLD BARS

METALOR[®]

Refining Division

Metalor Technologies SA
Route des Perveuils 8, CH-2074 Marin-Epagnier, Switzerland
Tel: +41 (0)32 720 6111

Reference Material Certificate

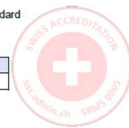
certificate n°: 11052020MER-1

Customer ID: -
Metalor ID: MER20102
GOLD 999.7‰ COC
Piece Ø 30mm, thickness 10mm

Analysis 1: ICP-OES by difference (Accredited method)

Method description: Au tite is determined by ICP-OES by difference. The uncertainty is given by the standard deviation on 8 replicates with a widening factor of two. (accredited under ISO/IEC 17025, registration STS 0478)

Element	Unit	Value	Uncertainty
Au	‰	999.69	0.01



Analysis 2: ICP-OES (Accredited method)

Method description: Au tite is determined by ICP-OES. The uncertainty is given by the standard deviation on 8 replicates with a widening factor of two. (accredited under ISO/IEC 17025, registration STS 0478)

Element	Unit	Value	Uncertainty	Element	Unit	Value	Uncertainty
Ag	mg/kg	52.6	1.8	Na	mg/kg	<0.5	
Al	mg/kg	0.8	0.8	Ni	mg/kg	3.7	0.5
As	mg/kg	28.7	1.5	Os	mg/kg	<0.5	
B	mg/kg	<0.5		P	mg/kg	<0.5	
Be	mg/kg	<0.5		Pb	mg/kg	9.6	0.8
Bi	mg/kg	20.6	1.6	Pd	mg/kg	55.0	4.4
Ca	mg/kg	<0.5		Pt	mg/kg	0.6	0.2
Cd	mg/kg	<0.5		Rh	mg/kg	<0.5	
Co	mg/kg	<0.5		Ru	mg/kg	0.7	0.2
Cr	mg/kg	2.7	0.4	Sb	mg/kg	9.9	0.9
Cu	mg/kg	19.5	1.0	Se	mg/kg	<1	
Fe	mg/kg	21.1	1.3	Si	mg/kg	42.8	3.0
Ga	mg/kg	<0.5		Sn	mg/kg	10.4	0.9
Ge	mg/kg	<0.5		Te	mg/kg	<1	
In	mg/kg	<0.5		Ti	mg/kg	<0.5	
Ir	mg/kg	<1		Tl	mg/kg	<0.5	
K	mg/kg	<0.5		V	mg/kg	<0.5	
Li	mg/kg	<0.5		W	mg/kg	<0.5	
Mg	mg/kg	27.3	1.7	Zn	mg/kg	<0.5	
Mn	mg/kg	3.2	0.4	Zr	mg/kg	<0.5	
Mo	mg/kg	<0.5		Total	mg/kg	309.3	14.0

Production Date 11.09.2020	Expiration Date 09.2040	Approved by Quentin Bochud Laboratory Manager
-------------------------------	----------------------------	---



Metalor Technologies SA has a Quality System certified by SGS ISO 9001, ISO 14001, ISO 45001
All certificates available on www.metalor.com
This report can only be reproduced in full and with the written approval of the laboratory. Any details concerning the analytical methods and the measurement uncertainties can be supplied by the laboratory upon request. - FOR 1136, V. 4.00

