

Metal and Quality, LLC
CERTIFICATE OF ANALYSIS (PROVISIONAL)
DSZU C030
Stainless Steel AISI 310S



INFORMATION Certified reference material DSZU C030 is intended for the calibration of measuring instruments when determining the chemical composition of stainless steels similar to AISI 310S (EN 1.4845, DIN X8CrNi25-21) using optical emission spectroscopy (OES) and X-ray fluorescence (XRF) analysis methods.

MANUFACTURER Metal and Quality, LLC

CERTIFIED (mass fraction in %)

	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	W	V	Cu	Al	Co	B	Ca	As	Pb	Sn	Sb	N
Certified M(M)	0.061	0.66	1.46	0.026	0.003	22.80	18.66	0.16	0.036	0.037	0.042	0.26	0.011	0.082	0.012	0.0005	0.015	0.005	0.015	0.010	0.038

Uncertainty C(95%)

Uncertainty C(95%) estimated as the half-width confidence interval of Student's t-distribution, when n is the number of laboratory means (see next page)

$$C(95\%) = \frac{t \cdot s(M)}{\sqrt{n}}$$

SPECIFICATION The material was melted in a vacuum induction furnace. The resulting ingot was forged to a diameter of 42 mm. The forged material was subsequently machined into disc-shaped samples with a nominal diameter of 39 mm and a thickness of 25 mm

HOMOGENEITY The homogeneity of the material was assessed by analysis of variance (ANOVA) using a randomized repeated-measures design. The measurements were performed by optical emission spectrometry (OES) in a single laboratory, and the homogeneity was found to be acceptable

TRACEABILITY The characterization of CRM C030 was achieved through inter-laboratory experiment. Chemical analyses were carried out by the participants in the certification tests both on monolithic samples and on chips taken from monolithic samples. The participating laboratories followed the requirements of ISO 17025 and used standardized analytical methods and the following certified reference materials to validate the analytical data: DSZU C016, BS 9842, BS 82E, DSZU C014-1, DSZU C014-2, DSZU C120, ICRM LG73, ICRM 2FM5, LECO 502-94, MBH 13X NSA4, BAS ECRM 295-1, NCS NS 20304

RM VALIDITY The shelf life of RMs is not limited. The working surface of these samples should be purified before use. The reference materials will remain stable provided they are not subjected to excessive heat (e.g. during preparation of the working surface)

DATE OF ISSUE July 2026

DELIVERY CRM packed into a box and certificate

SAFETY A Safety Data Sheet (SDS) is not required for these reference materials. Material and packing does not contain hazardous chemical, explosives and radioactive substances and substances which might influence health and the environment

LABORATORY MEANS, mass fraction in % by weight

n	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	W	V	Cu	Al	Co	B	Ca	As	Pb	Sn	Sb	N
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					

M(M) - Mean of intralaboratory means

s(M) - Standard deviation of the mean values of laboratories

PARTICIPATING LABORATORIES (*italic* - in progress)

ArcelorMittal Kryvyi Rih PJSC, Ukraine

Dnepropress Steel LLC, Ukraine

Dnipropetsstal (DSS) PJSC, Ukraine

Luvak Inc., USA

Metal and Quality LLC, Ukraine

Oy NAREMA, Finland

PlasmaTec LLC, Ukraine

VÍTKOVICE TESTING, Czech Republic

Zaporizhstal, Ukraine

Zaporizhia Foundry and Mechanical Plant LLC, Ukraine

METHODS USED

C, S - Infrared absorption, Coulometric titration

Si - Photometric, ICP-OES, DCP-AES, OES

Ni - Gravimetric, ICP-OES, DCP-AES, AAS, OES, XRF

Cr - Titrimetric, ICP-OES, DCP-AES, OES, XRF

Mn, Ti, P, Cu, Co, B, Mo, V, W - ICP-OES, DCP-AES, OES, XRF

Al, As, Pb, Sn, Sb - ICP-OES, ICP-MS, AAS, DCP-AES, OES

N - Inert gas fusion with thermal conductivity

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