

Metal and Quality, LLC
Reference Material
Certificate of Chemical Analysis
DSZU CA031
Stainless Steel



APPLICABILITY

Reference Materials DSZU CA031 is intended for calibration of analytical instruments based on inert gas fusion methods

MEAN VALUES OF LABORATORIES*

n	Mass fraction in %		
	O	N	H
1	0.00207	0.00679	0.00054
2	0.00209	0.00685	0.00054
3	0.00220	0.00700	0.00061
4	0.00257	0.00722	0.00063
5	0.00259	0.00726	0.00064
6	0.00274	0.00733	0.00067
7	0.00295	0.00738	
8		0.00740	
M(M)	0.00246	0.00715	0.00061
s(M)	0.00034	0.00024	0.00006

M(M) - Mean of intralaboratory means

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

* Updated in April 2026

CERTIFIED VALUES (mass fraction in %)

Elements	O	N	H
Certified M(M)	0.0025	0.0072	0.00061
Uncertainty C(95%)	0.0003	0.0002	0.00006

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

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

SPECIFICATION

The reference material is made of stainless steel in the form of nickel-plated pins with a diameter of 4 mm and a mass of 1.0 grams

TRACEABILITY

The characterization of material has been achieved by means interlaboratory experiment in accordance to ISO Guide 35:2017. Each laboratory used its own analytical methods, using certified reference materials for calibration of analytical equipment

HOMOGENEITY	The homogeneity of this reference material was assessed in one laboratory using the inert gas fusion method and found to be acceptable
DELIVERY	Packing - 50 pins in glass bottle and Certificate
DATE OF ISSUE	February 2022
VALID	February 2032
SAFETY	A Safety Data Sheet (SDS) is not required for this reference material. Material and packing does not contain hazardous chemical, explosives and radioactive substances and substances which might influence health and the environment
NOTE	Reference material should be stored in a tightly closed bottle in a dry and cool place. When the bottle is opened for analysis, it should be stoppered immediately after use. <u>Samples extracted from the bottle using clean metallic tweezers and placed directly into a carefully cleaned weigher and boat devices of analyzer</u>

PARTICIPATING LABORATORIES

Asovstal Iron & Steel Works, Ukraine
 Dneprospetsstal (DSS) PJSC, Ukraine
 MP DNEPROSTEEL LLC, Ukraine*
 Energomashspetsstal (EMSS) OJSC, Ukraine
 E.O. Paton Electric Welding Institute, Ukraine
 Institute for Certified Reference Materials (ICRM)
 Institute for Ferrous Metallurgy (IMZ), Poland
 VÍTKOVICE TESTING, Czech Republic
 Zaporizhstal OJSC, Ukraine

* The analysis was carried out in 2026

THE METHODS USED

Inert gas fusion with infrared absorption (oxygen, hydrogen) and thermal conductivity (nitrogen)

CONTACTS

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