

Metal and Quality, LLC
CERTIFICATE OF ANALYSIS
CRM C58
Carbon Steel



APPLICABILITY

CRM C58 (DSZU No.083.9-02) is intended for verification of analytical methods, for calibration of analytical instruments at definition of chemical compound carbon steels

MEAN VALUES OF LABORATORIES

Lab. No.	C	Si	Mn	S	P	Cr	Ni	Cu
1	0.345	1.240	1.229	0.0070	0.0064	0.119	0.0790	0.098
2	0.345	1.244	1.230	0.0070	0.0070	0.120	0.0815	0.098
3	0.345	1.260	1.237	0.0072	0.0072	0.121	0.0831	0.099
4	0.346	1.261	1.238	0.0072	0.0072	0.122	0.0860	0.099
5	0.347	1.267	1.245	0.0076	0.0075	0.122	0.0860	0.100
6	0.347	1.267	1.248	0.0078	0.0075	0.123	0.0861	0.100
7	0.348	1.278	1.256	0.0078	0.0076	0.124	0.0884	0.100
8	0.349	1.281	1.261	0.0080	0.0079	0.124	0.0886	0.101
9	0.351	1.284	1.263	0.0083	0.0081	0.124	0.0888	0.104
10	0.352	1.288	1.281	0.0091	0.0082	0.128	0.0912	0.107
11	-	-	-		0.0090	0.131	-	-
M(M)	0.348	1.267	1.249	0.0077	0.0076	0.124	0.0859	0.100
s(M)	0.003	0.016	0.017	0.0007	0.0007	0.004	0.0037	0.003

M(M) - Mean of intralaboratory means

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

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

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

CERTIFIED VALUES

Elements	C	Si	Mn	S	P	Cr	Ni	Cu
Certified value (Mass fraction in %)	0.348	1.27	1.25	0.0077	0.0076	0.123	0.086	0.100
Estimate of uncertainty (Confidence 0.95)	0.003	0.01	0.01	0.0003	0.0003	0.002	0.002	0.002

CERTIFICATE VALIDITY

February 2027

SPECIFICATION

CRM is made as a broken shaving of steel thickness of 0.3 mm

DELIVERY

CRM in glass (250 g), packed into a box and the Certificate

NOTE

Minimum sample size for chemical analysis is 0.1 g

STORAGE

The material should be kept in a dry room in the closed bottle

SAFETY

CRM C58 and packing does not contain explosives and radioactive substances and substances which might influence health and the environment

THE METHODS USED

Combustion coulometric and infrared, Gravimetric, Photometric, Titration, Flame AAS, ICP OES

PARTICIPATING LABORATORIES

DMKD PJSC, Ukraine
 Zaporizhstal PJSC, Ukraine
 Dneprospetsstal PJSC, Ukraine
 Ukrainian Special Steels Institute SE, Ukraine
 ZORIA SE, Ukraine
 KZGO CJSC, Ukraine

Turbo - Motor Factory OJSC, RU
 Nizhneserginski Metallurgical Works OJSC, RU
 Ashinskiy Metallurgical Works OJSC, RU
 Ural institute of metals OJSC, RU
 Vyksa Steel Works OJSC, RU
 Omutninsk Metallurgical Plant OJSC, RU
 Pneumatic-build-machine OJSC, RU

CONTACTS

37 Nezalezhnoi Ukrain Street,
 Zaporozhye city 69019, Ukraine
 Tel/fax: +380 61 7171800
rm@rm.co.ua <https://rm.co.ua>