

ECISS
EUROPEAN COMMITTEE FOR IRON AND STEEL STANDARDISATION
COMITÉ EUROPÉEN DE NORMALISATION DU FER ET DE L'ACIER
EUROPÄISCHES KOMITEE FÜR EISEN-UND STAHLNORMUNG
EUROPEAN CERTIFIED REFERENCE MATERIAL (EURONORM – CRM)
CERTIFICATE OF CHEMICAL ANALYSIS

EURONORM – CRM No. 509-1 LOW CARBON FERRO CHROMIUM

LABORATORY MEANS - Mass content in %

Line No.	Cr	C	Si	P	N
1	---	0.009	---	---	---
2	72.31	0.009	0.190	0.007	0.021
3	72.38	0.010	0.190	0.008	0.021
4	72.55	0.010	0.193	0.009	0.022
5	72.62	0.010	0.195	0.013	0.022
6	72.65	0.011	0.198	0.014	0.024
7	72.66	0.011	0.209	0.015	0.024
8	72.69	0.011	0.210	0.015	0.025
9	72.70	0.011	0.215	0.016	0.025
10	72.71	0.011	0.215	0.016	0.025
11	72.72	0.012	0.215	0.016	0.026
12	72.76	0.012	0.220	0.017	0.026
13	72.77	0.012	0.220	0.017	0.026
14	72.78	0.012	0.220	0.017	0.027
15	72.78	0.013	0.220	0.018	0.028
16	72.82	0.013	0.225	0.018	0.028
17	72.82	0.014	0.225	0.018	0.028
18	72.82	0.015	0.227	0.018	0.028
19	72.83	0.016	0.230	0.018	0.028
20	72.85	0.016	0.230	0.019	0.029
21	72.85	0.016	0.233	0.019	0.030
22	72.85	0.016	0.235	0.020	0.031
23	72.86	0.016	0.235	0.020	0.031
24	72.91	0.017	0.235	0.020	0.032
25	72.92	0.017	0.236	0.020	---
26	72.95	0.017	0.237	0.020	---
27	72.95	0.019	0.237	0.020	---
28	72.95	---	0.239	0.021	---
29	72.95	---	0.240	0.021	---
30	72.95	---	0.240	0.022	---
31	73.00	---	0.240	0.024	---
32	73.02	---	0.240	0.024	---
33	73.02	---	0.245	0.024	---
34	73.02	---	0.245	0.025	---
35	73.05	---	0.251	0.026	---
36	73.05	---	0.253	0.029	---
37	73.06	---	0.255	---	---
38	73.13	---	0.260	---	---
39	73.22	---	0.280	---	---
40	73.23	---	---	---	---
41	---	---	---	---	---
M_M	72.85	0.013	0.229	0.018	0.026
S_M	0.20	0.003	0.021	0.005	0.004

M_M: Mean of the intralaboratory means

S_M: Standard deviation of the intralaboratory means

The laboratory mean values have been examined statistically to eliminate outlying values.

Where a "----" appears in the table it indicates that an outlying value has been eliminated by either the Cochran or Grubbs Test

CERTIFIED VALUES - Mass content in %

	Cr	C	Si	P	N
M_M	72.85	0.013	0.229	0.018	0.026
C(95%)	0.07	0.002	0.007	0.002	0.002

The half-width confidence interval C(95%) = $\frac{t \times s_M}{\sqrt{n}}$ where "t" is the appropriate Student's t value and "n" is the number of acceptable mean values

DESCRIPTION OF THE SAMPLE

Sample available in divided form, supplied in bottle containing 100g.

This certified reference material was prepared by: INSTITUT DE RECHERCHES DE LA SIDÉRURGIE (IRSID)

Certificate revised in October 2016 (first issued June 1967).

Original data have been statistically evaluated to calculate mean values replacing median values.



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On behalf of: The Iron and Steel Nomenclature Co-ordinating Committee (COCOR) of the ECISS, after approval by all the producing organisations

(France - ArcelorMittal Maizières Research SA & CTIF; Germany - Iron and Steel CRM Working Group: Stahlinstitut VDEh, BAM Bundesanstalt für Materialforschung und -prüfung (BAM) & MPI für Eisenforschung; Nordic Countries - Nordic CRM Working Group)

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