

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. 507-1 HIGH CARBON FERRO CHROMIUM

LABORATORY MEANS - Mass content in %

Line No.	Cr	C	Si	Mn	P	N
1	---	---	1.08	0.240	0.009	---
2	69.70	5.05	1.09	0.243	0.010	---
3	69.73	5.17	1.13	0.245	0.010	0.044
4	69.77	5.19	1.14	0.248	0.010	0.046
5	69.90	5.29	1.14	0.250	0.011	0.048
6	69.91	5.31	1.14	0.250	0.012	0.048
7	69.94	5.32	1.15	0.251	0.013	0.048
8	70.00	5.34	1.15	0.253	0.013	0.048
9	70.01	5.34	1.16	0.253	0.013	0.049
10	70.06	5.40	1.16	0.258	0.014	0.049
11	70.14	5.40	1.16	0.259	0.014	0.051
12	70.15	5.41	1.17	0.260	0.015	0.052
13	70.20	5.41	1.17	0.260	0.015	0.053
14	70.21	5.41	1.17	0.265	0.015	0.053
15	70.21	5.42	1.18	0.265	0.016	0.054
16	70.24	5.42	1.18	0.267	0.017	0.054
17	70.25	5.42	1.18	0.268	0.018	
18	70.25	5.42	1.18	0.270	0.018	
19	70.26	5.43	1.20	0.272	0.020	
20	70.26	5.44	1.20	0.275	0.020	
21	70.27	5.44	1.21	0.275	0.020	
22	70.35	5.45	1.22	0.275	0.021	
23	70.35	5.46	1.22	0.275	0.022	
24	70.37	5.50	1.22	0.280	0.022	
25	70.37	5.50	1.23	0.280	0.023	
26	70.38	5.51	1.23	0.285	0.023	
27	70.40	5.51	1.24	0.285	0.025	
28	70.40	5.51	1.25	0.286	0.026	
29	70.41	5.52	1.25	0.290	0.026	
30	70.41	5.52	1.30	0.290	0.028	
31	70.42	5.52	1.32	0.290	0.031	
32	70.42	5.53	1.32	0.295	0.032	
33	70.43	5.55	1.38	0.300		
34	70.44	5.56	---	0.320		
35	70.45	5.67		---		
36	70.50	5.70				
37	70.53					
38	70.57					
39	70.58					
40	70.75					
41	70.83					
M_M	70.27	5.43	1.20	0.270	0.018	0.050
S_M	0.26	0.13	0.07	0.019	0.007	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	Mn	P	N
M_M	70.27	5.43	1.20	0.270	0.018	0.050
C(95%)	0.09	0.05	0.03	0.007	0.003	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 October 1965).

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 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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