

ECSC - CECA - EGKS
EUROPEAN COAL AND STEEL COMMUNITY
COMMUNAUTÉ EUROPÉENNE DU CHARBON ET DE L'ACIER
EUROPÄISCHE GEMEINSCHAFT FÜR KOHLE UND STAHL
EURO - STANDARD No. 576-I FERRO-NIOBIUM

CERTIFICATE OF ANALYSES

Laboratory Means (4 values)

Line No.	%Nb	%Ta	%C	%Si	%Al	%Sn	%Ti
1	—	0.2550	0.1955	1.660	2.426	0.1765	1.233
2	43.37	0.2775	0.1960	1.690	2.427	0.1778	1.268
3	43.58	0.2825	0.1965	1.720	2.445	0.1820	1.273
4	43.69	0.2875	0.1970	1.745	2.475	0.1862	1.282
5	43.77	0.2925	0.1975	1.745	2.500	0.1870	1.305
6	43.80	0.2975	0.1978	1.747	2.510	0.1875	1.308
7	43.80	0.3000	0.1980	1.778	2.515	0.1885	1.309
8	43.86	0.3000	0.1988	1.780	2.522	0.1925	1.311
9	43.86	0.3025	0.1992	1.788	2.528	0.1938	1.315
10	43.87	0.3050	0.2000	1.795	2.531	0.1942	1.320
11	43.88	0.3075	0.2008	1.802	2.538	0.1944	1.320
12	43.90	0.3100	0.2015	1.811	2.545	0.1948	1.328
13	43.92	0.3112	0.2020	1.815	2.545	0.1950	1.330
14	43.95	0.3150	0.2021	1.815	2.558	0.1978	1.331
15	43.98	0.3160	0.2025	1.819	2.560	0.2028	1.332
16	44.06	0.3225	0.2025	1.860	2.572	0.2048	1.338
17	44.10	0.3248	0.2050	1.900	2.575	0.2050	1.345
18	44.19	0.3500	0.2055	1.910	2.590	0.2100	1.395
19	44.26	0.3512	0.2070	1.913	2.598	0.2132	1.430
20	44.28	—	0.2070	—	2.605	0.2150	—
M _M	43.90	0.3057	0.2006	1.794	2.528	0.1949	1.320
S _M	0.22	0.0229	0.0036	0.069	0.053	0.0109	0.043

M_M: Mean of the intralaboratory means

S_M: Standard deviation of the intralaboratory means

CERTIFIED VALUES

	%Nb	%Ta	%C	%Si	%Al	%Sn	%Ti
M _M	43.90	0.306	0.201	1.79	2.53	0.195	1.32
S _M	0.22	0.023	0.004	0.07	0.05	0.011	0.04

Laboratories which have participated in the standardization of Euro-Standard 576-I

Arbed, d'Esch-Belval, Esch-sur-Alzette (Luxembourg)
Bert et Duval, Les Ancizes (France)
August Thyssen-Hütte AG, Duisburg (Germany)
British Steel Corporation, Rotherham Works (U.K.)
British Steel Corporation, Scunthorpe Works (U.K.)
Brown Firth Research Laboratories, Sheffield (U.K.)
Creusot-Loire, Unieux (France)
Gesellschaft für Elektrometallurgie mbH, Nürnberg (Germany)
Hoogovens, Ijmuiden (Holland)
London & Scandinavian Metallurgical Co. Ltd., Rotherham (U.K.)

Mannesmann AG Hüttenwerke, Duisburg (Germany)
Murex Ltd., Rainham (U.K.)
N.V. Staalgieterij-SMDK, Utrecht (Holland)
Ridsdale & Co. Ltd., Middlesbrough (U.K.)
Société Cockerill, Seraing (Belgium)
Société Française de l'Electrometallurgie, Le Fayet (France)
Sollac, Florange (France)
Stahlwerke Röhring-Burbach GmbH, Völklingen-Saar (Germany)
Thyssen Edelstahlwerke AG, Forschungsinstitut, Krefeld (Germany)
Thyssen Edelstahlwerke AG, Witten (Germany)

For the Commission of Co-ordination of the Nomenclature of metallurgical products—Commission of European Communities.

For information regarding the Euro-Standards, please refer to the ECSC Information Circular No. 1 available from the Institution responsible for standardisation in your country.

Pour tous renseignements sur les Euro-échantillons-types, se reporter à la Circulaire d'information No. 1 de la CEEA, diffusée par les organismes nationaux de normalisation.

Wegen Erläuterungen über Euro-Analysenkontrollproben siehe Mitteilung Nr. 1 der EGKS. Zu beziehen durch die nationalen Normenorganisationen.



BUREAU OF ANALYSED SAMPLES LIMITED

Newham Hall, Middlesbrough, England. MAY 1976

METHODS USED 576-I

Element	Line Number	Methods
Nb	2-4-6-8-13-17-18-20	Gravimetric (sum of oxides)
		Correction for Ta and Ti, Nb by difference
	3-7-10-12-14-15-19 5-7-11-16	X-ray fluorescence spectroscopy
Ta	9	Gravimetric; ion-exchange separation and precipitation with cupferron
		Ion-exchange, colorimetric with PAR
	1-3-7-8-9-11-12-18	X-ray fluorescence spectroscopy
	2-13	Colorimetric with pyrogallol after separation of Nb and Ta
	4	Gravimetric after tannin separation
	5	Colorimetric with malachite green
	6-14-17-19	Ion-exchange, colorimetric with pyrogallol
	8	Gravimetric; ion-exchange separation and precipitation with cupferron
	10	Atomic absorption spectroscopy
	15	Ion-exchange, colorimetric with phenylfluorone
C	16	Solvent extraction, colorimetric with pyrogallol
	1-3-5-8-19	Coulometric
	2-16	Low pressure gasometric
	4-7-14-17-20	Non-aqueous titration
	6-13	Conductimetric
Si	9	Thermal conductivity
	10-11-12-15-18	Infrared absorption
	1-3-4-5-6-7-8-9-11-12-13-14-15-18-19	Gravimetric after dehydration with sulphuric acid
	2	Colorimetric as silicomolybdate yellow
	10	Atomic absorption spectroscopy
Al	16	Titrimetric after precipitation as K_2SiF_6
	17	X-ray fluorescence spectroscopy
	1	Ion-exchange, titrimetric with EDTA
	2-10	Gravimetric with 8-hydroxyquinoline
	3-4-5-6-7-8-9-11-12-13-16	Atomic absorption spectroscopy
Sn	14-15-19-20	Precipitation with 8-hydroxyquinoline and bromometric titration
	17-18	X-ray fluorescence spectroscopy
	1-2-8-10-12-13-15	Iodate titration
	3-5-9	Colorimetric with phenylfluorone
	4-7-11-14-16-17-19-20	Atomic absorption spectroscopy
Ti	6-18	X-ray fluorescence spectroscopy
	1-2-3-10-12-17-18	Colorimetric with hydrogen peroxide
	4-5-6-15-16	Atomic absorption spectroscopy
	7	Colorimetric with diantipyrylmethane
	8-9-14-19	Colorimetric with chromotropic acid