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## PURE IRON

# = class, where 1 = CRM and 2 = RM

T = total

#	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Co	N	O
1	SRM 1265a	0.0067	0.0057	0.0011	0.0055	0.008	0.0058	0.041	0.007	0.0050	(0.0007)	0.007	.	.
1	BS 50F	0.0064	0.082	0.0066	0.0031	0.016	0.0088	0.016	0.022	0.0017	0.003	0.0023	0.0042	(0.0026)
2	CZ LA-0A	(0.006)	0.045	0.005	0.005	0.0015	0.012	0.028	0.022	(0.0044)	0.0015	0.002	0.0023	.
1	VS RG31	0.0035	0.0010	0.0015	.	0.009	0.010	0.0046	0.0016	0.0003	.	0.0007	.	.
1	IARM 27G	(0.003)	(0.003)	(0.003)	0.0011	(0.07)	0.040	0.045	0.043	(0.002)	(0.0013)	(0.0009)	(0.0003)	0.025
2	TL 1669 *	0.00226	0.0955	0.0137	0.0100	0.0093	0.0217	0.0160	0.0246	0.0011	0.03553T	0.0019	0.0024	.
2	TH 1045D	0.0023	.	.	0.0043	.	.	.	.	.	.	.	0.0046	.
1	VS RG24/1	0.0022	0.015	0.0027	0.0069	0.017	0.011	0.037	0.037	0.0013	.	0.012	.	.
1	BS LC-6	0.0020	0.469	0.0007	0.0009	0.050	0.0003	0.0057	0.0023	(0.0006)	0.034	0.0021	0.0003	0.0007
1	SRM 1768	0.0010	0.0014	0.0013	0.0003	.	0.0006	0.0014	.	.	0.0024	0.0025	0.002	0.036
1	ECRM 098-1D	0.00051	0.00008	(0.00006)	0.00031	0.00048	.	.	0.00571	0.00085	.	.	0.0024	.
1	ECRM 097-1D	(<0.002)	0.0064	0.0016	0.0022	(<0.01)	0.0020	0.0025	0.0016	(<0.001)	.	0.0037	0.0007	.
1	ECRM 097-2D	.	0.012	0.00538	0.00181	0.00285	0.00793	0.0241	0.0213	0.00370	.	0.0139	0.00294	.

Number	As	B	Mg	Nb	Pb	Sn	Ti	V	W	Units
SRM 1265a	(0.0002)	0.00013	.	.	0.00001	.	(0.0001)	0.0006	.	disc 32 mm Ø x 19 mm
BS 50F	0.0013	(<0.0002)	(<0.0001)	(<0.0002)	(<0.0003)	0.0010	0.0004	(0.0003)	(<0.0050)	disc 35 mm Ø x -7 mm 17025
CZ LA-0A	(0.0015)	.	.	Sb:(0.0007)	(0.001)	(0.001)	0.001	.	.	disc -37 mm Ø x 25 mm
VS RG31	.	.	.	.	.	.	.	.	.	disc -45 mm Ø x -28mm
IARM 27G	(0.0016)	(0.0006)	(0.0002)	(0.002)	(0.002)	(0.001)	<0.005	(0.001)	<0.005	disc 31 mm Ø X 2 or 18 mm
TL 1669 *	0.0017	0.00038	.	0.00046	0.00013	0.0071	0.0504	(0.0006)	.	disc 38 mm Ø x 25 mm
TH 1045D	.	.	.	.	.	.	.	.	.	disc 40 mm Ø x 40 mm
VS RG24/1	.	.	.	.	.	.	0.0010	.	.	disc -45 mm Ø x -28mm
BS LC-6	(<0.0020)	(0.0004)	(0.00003)	(<0.0010)	(<0.0020)	(<0.0020)	0.0006	(<0.0010)	last	disc 39 mm Ø x -7 or -12 mm 17025
SRM 1768	.	.	.	.	.	.	.	.	.	disc 31 mm Ø x 19 mm
ECRM 098-1D	.	.	.	.	.	.	.	.	.	octagon 35 mm Ø x 25 mm
ECRM 097-1D	0.0051	0.0003	.	.	.	(<0.0025)	.	(<0.001)	.	disc 38 mm Ø x 3, 25, or 30 mm
ECRM 097-2D	0.00281	0.00012	Sb:0.00012	Ta:0.00015	Zn:0.00014	0.00043	.	0.00011	0.00386	disc 38 mm Ø x 25 or 30 mm

\* TL-1669 also contains in ppm Ca: 1.7, Sb: 4.9, Zn: 2.7

## RM CARBON STEEL XRF SET

Part Number: BS CS-10

AVAILABLE INDIVIDUALLY

17025

~7 mm discs

Grade	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	As	Co	N	Sn	V
Pure Iron	BS 50F	0.0064	0.082	0.0066	0.0031	0.016	0.0088	0.016	0.022	0.0017	0.003	0.0013	0.0023	0.0042	0.0010	(0.0003)
1008	BS XAAS	0.041	0.430	0.007	0.010	0.045	0.015	0.023	0.020	0.007	0.006	0.005	0.004	0.0037	<0.002	<0.005
1018	BS 2931	0.202	0.75	0.012	0.025	0.23	0.23	0.106	0.154	0.019	0.002	0.007	0.009	0.0119	0.010	0.002
1020	BS 57F	0.196	0.554	0.009	0.027	0.202	0.197	0.070	0.120	0.018	(0.002)	(0.006)	0.007	0.0077	0.008	0.063
1026	BS 4932	0.234	0.76	0.010	0.015	0.25	0.15	0.080	0.144	0.033	(0.001)	(0.005)	0.005	0.0080	0.008	0.060
1035	BS 4931	0.352	0.80	0.011	0.016	0.27	0.217	0.070	0.093	0.024	(0.001)	0.005	0.006	0.0080	0.009	0.058
1040	BS 3941	0.407	0.802	0.016	0.023	0.257	0.053	0.018	0.069	0.0061	0.0019	0.0036	0.0042	0.0069	0.0019	0.0025
1045	BS 56E	0.483	0.72	0.010	0.025	0.24	0.015	0.015	0.021	0.005	0.062	0.0035	0.005	0.0056	(0.0006)	(<0.002)
1095	BS 64C	0.920	0.22	0.015	0.0024	0.22	0.016	0.038	0.261	0.008	(0.005)	.	0.004	0.0084	(0.001)	0.005
1522 (LF2)	BS 2932	0.208	1.20	0.008	0.020	0.186	0.060	0.034	0.077	0.026	0.022	(0.003)	0.004	0.0080	0.005	0.001

## CRM CARBON STEEL SET

AVAILABLE IN SET/6 ONLY

38 mm Ø x 30 mm

Number	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Al.Sol	Ti	Ti.Sol	V
NCS HS11719-5	1.19	2.20	0.011	0.013	0.751	0.046	0.164	0.439	0.036	0.034	0.029	0.028	0.0082
NCS HS11719-1	0.963	0.586	0.022	0.010	0.241	0.111	0.206	0.131	0.019	0.017	0.016	0.015	0.035
NCS HS11719-3	0.435	1.14	0.045	0.020	0.163	0.160	0.114	0.086	0.019	0.016	0.024	0.023	0.099
NCS HS11719-4	0.140	1.30	0.084	0.020	0.526	0.276	0.344	0.198	0.160	0.155	0.132	0.128	0.153
NCS HS11719-2	0.042	0.048	0.105	0.0053	0.154	0.411	0.432	0.247	0.296	0.292	0.161	0.154	0.207
NCS HS11719-6	0.0060	0.163	0.0053	0.035	0.014	0.0032	0.013	0.021	0.0021	0.0016	0.0010	(0.0008)	0.363

## CRM SOLUBLE ALUMINUM AND SOLUBLE BORON STEEL SET

available in set/6 only as grouped .T = total .S = soluble

37 mm Ø x 30 mm

Number	Al.T	Al.S	B.T	B.S	C	Mn	P	S	Si	Cu	Ni	Cr	Co	Mo
NCS HS93703-1	0.387	0.381	0.025	0.023	1.08	2.35	0.0057	(0.008)	0.681	0.048	0.028	3.98	0.0047	0.0077
NCS HS93703-2	0.92	0.91	0.0083	0.0080	0.055	0.021	0.027	0.0033	0.827	0.422	1.09	3.09	0.262	1.56
NCS HS93703-3	0.107	0.103	0.0041	0.0037	0.792	1.34	0.013	0.038	1.09	0.532	0.533	2.11	0.488	0.397
NCS HS93703-4	0.083	0.078	0.0050	0.0048	0.475	0.612	0.015	0.015	2.57	0.687	2.01	1.31	0.403	0.977
NCS HS93703-5	(1.29)	(1.27)	0.0017	0.0015	0.651	1.53	0.036	0.0052	0.024	0.236	2.98	0.021	0.094	0.631
NCS HS93703-6	0.64	0.63	0.0033	0.0030	0.246	0.211	0.045	0.0058	0.274	0.092	3.83	0.505	0.145	0.203

Number	As	Bi	Ca	Nb	Pb	Sb	Sn	Ti	V	W	Zr
NCS HS93703-1	0.032	0.0011	0.0009	0.351	0.0016	(0.0001)	0.014	0.473	0.0090	0.293	0.0031
NCS HS93703-2	0.0034	0.0006	0.0010	0.254	0.0008	0.0020	0.0069	0.346	0.376	1.97	0.087
NCS HS93703-3	0.0019	0.0004	0.0010	0.506	0.0007	0.0040	0.054	0.016	0.071	0.755	0.014
NCS HS93703-4	0.056	(0.0002)	(0.0001)	0.167	0.0006	0.0095	0.012	0.035	0.709	1.48	0.069
NCS HS93703-5	0.0064	0.0015	0.0007	0.0057	0.0007	0.010	0.015	0.111	0.231	0.050	0.41
NCS HS93703-6	0.011	(0.0002)	(0.0001)	0.070	0.0011	0.0006	0.017	0.246	0.526	1.04	0.22



CARBON STEEL CONTINUED FROM THE PREVIOUS PAGE

Table with columns: Number, N, Nb, O, Pb, Sb, Sn, Ti, V, W, Zn, Zr, Units. Rows include various steel grades like IRSID 1660, ECRM 090-1D, SRM 1227, BS 602/2, BS 64C, HRT FE2014-N, ECRM 056-2D, SRM 1224, BS 54H, VS RG28, VS RG28/1, IARM 373A, VS UG20/6, NM 3405.01, SS 435/1, SS 435/2, BS 56E, IRSID 1636, SS 459/2, BS 56H, IARM 200D, VS UG123, IRSID 1657, IRSID 1648, 12X 10400A, NM EN-8, IRSID 1642, IRSID 1647, IRSID 1646, IARM 210D, SS 434/1, IARM 349A, BS 3941, IRSID 1652, IRSID 1637, SS 605/2, IRSID 1644, ECRM 084-1D, IRSID 1645, IRSID 1649, SS 460/2, VS RG30, VS RG30, BS 1035, IRSID 1655, IRSID 1663, VS UG90, VS UG19/6, IARM 360A, BS 1030, IARM 209D.

Table with columns: Number, N, Nb, O, Pb, Sb, Sn, Ti, V, W, Zn, Zr, Units. Rows include various steel grades like IRSID 1653, VS RG27, IRSID 1654, SS 434/2, IARM 359A, BS 1026, VS UG94, VS UG18/6, HRT FE2016-N, BS 1020, IARM 213C, IRSID 1664, VS RG25/1, BS 1018, BS LF2B, IARM 28K, BS 1016, 12X 10180C, NM 3404.01, 12X 10180B, TL 1000, VS RG25, VS UG124, VS UG109, BS 2931B, IARM 213D, SS 456/2, DSZU C041, SS 432/1, SS 601/2, VS UG93, VS UG17/6, SS 433/2, IRSID 1661, VS UG125, VS UG108, SRM 1228, ECRM 057-2D, BS XCCS-1, VS RG267I, NM PC-1, ECRM 083-2D, DSZU C03, VS RG26, SS 431/2, VS UG2/11, DSZU C040, RM Fe 1/5, VS UG2/5, SS 432/2, BS 1005, BS 1009, SS 111/1, VS 005, VS UG2/10, VS 003, CZ LA-1B, IMZ 110A, VS 004, VS 002, BS LC-6.

Final row of the table with columns: Number, N, Nb, O, Pb, Sb, Sn, Ti, V, W, Zn, Zr, Units.

## ARSENIC AND ANTIMONY IN STEEL

# = Class, where 1 = CRM and 2 = RM analysis listed in mass % except \* which is mg/kg

#	Number	As	Sb	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Als	Co	Mo	Sn	Ti
1	VS UG87	0.116	0.0012	0.59	1.18	0.026	0.022	1.25	0.030	0.50	0.260	0.024	0.02	.	0.044	.	0.103
1	12X 12749W	0.071	.	0.132	1.250	0.0257	0.101	0.298	0.311	0.485	0.554	0.004	.	0.436	0.224	0.040	0.031
1	SS 454/1	0.070	.	0.376	0.80	0.061	0.047	0.31	0.051	0.069	0.062	.	.	.	0.20	0.054	0.010
1	IMZ 120	0.065	0.031	0.60	0.40	(0.049)	0.026	0.34	0.10	0.085	0.20	0.033	.	.	.	0.008	.
1	12X 15266V	0.0640	.	0.455	1.240	0.0344	0.0258	0.674	0.226	1.317	3.49	0.526	.	0.286	0.298	0.0082	.
1	IRSID 1656	0.055	.	0.477	0.730	0.027	0.013	0.277	.	(0.048)	(0.017)	(0.002)	.	.	(0.007)	.	.
1	12X 15260W	0.055	.	0.352	2.08	0.0275	0.074	0.485	0.152	0.453	2.98	0.191	.	0.0884	0.098	0.0094	.
1	12X 350B	0.053	.	0.138	0.706	0.029	0.0363	0.672	0.150	0.162	0.392	0.341	.	0.0206	0.149	0.0298	0.099
1	12X 350C *	0.05	.	0.16	0.76	0.03	0.04	0.45	0.20	0.16	0.34	0.29	.	0.032	0.15	0.035	0.075
1	12X 353G	0.0461	0.138	0.111	0.726	0.0099	0.0147	0.207	0.232	0.214	0.701	0.0485	.	0.0240	0.1063	0.113	0.0387
1	12X 12746U	0.049	.	0.0132	1.70	0.0247	0.064	0.183	0.368	0.161	0.182	0.021	.	0.115	0.654	0.202	0.0283
1	12X 358A	0.0393	0.128	0.129	0.709	0.0102	0.0142	0.199	0.250	0.212	0.625	0.0616	.	0.0355	0.108	0.117	0.0453
1	12X 355C	0.0331	0.0796	0.159	0.508	0.0214	0.0241	0.494	0.657	0.0710	0.113	0.1104	.	0.0495	0.1010	0.0564	0.153
1	12X 354B	0.023	.	0.252	5.03	0.0478	0.0105	0.200	0.0679	0.082	0.0487	0.0150	.	0.0237	0.0328	0.0154	0.0248
1	ECRM 055-2D	0.0187	0.00376	0.5199	0.687	0.0102	0.0205	0.3094	0.2089	0.3121	0.3217	.	.	0.0257	0.0960	0.0162	0.00104
1	12X 357C	0.0147	0.0140	0.270	0.220	0.0101	0.0590	0.153	0.265	0.0954	0.094	0.208	.	0.199	0.0105	0.0188	0.0569
1	BS 1030	0.0055	0.0024	0.331	0.682	0.0101	0.0299	0.261	0.269	0.078	0.124	0.0014	.	0.0069	0.0182	0.0114	0.0005
1	VS UG90	0.0044	0.0011	0.34	0.286	0.0079	0.012	0.221	0.200	0.265	0.261	0.037	0.032	.	0.046	.	0.039
1	VS UG89	0.0043	0.0011	0.92	0.76	0.0085	0.01	0.385	0.373	0.51	0.420	0.01	0.007	.	0.044	.	0.012
1	BS 2931B	0.0033	0.0012	0.159	0.788	0.0108	0.0292	0.207	0.098	0.083	0.080	0.0191	.	0.0056	0.0329	0.0062	0.0008
1	VS UG92	0.0027	0.0005	0.69	0.79	0.05	0.0029	1.98	0.111	0.155	0.200	0.091	0.08	.	0.119	.	0.022
1	IRSID 1670	0.0018	.	0.0011	0.3981	0.0128	0.0075	0.0046	0.0134	0.0142	0.0174	0.0479	.	0.0018	0.0009	0.0017	0.0078
1	VS UG88	0.0007	0.0003	0.62	1.26	0.0026	0.0043	1.22	0.171	0.52	0.474	0.01	0.009	.	0.104	.	0.107
1	VS UG91	0.0004	0.00009	0.49	.	0.0038	0.0021	2.23	0.057	0.039	0.064	0.048	0.048	.	0.058	.	0.038
1	SS 458/2	.	0.089	0.198	0.479	0.0281	0.0314	0.504	.	.	.	0.055	0.053	0.198	.	.	.
1	SS 457/2	.	0.050	0.307	0.327	0.0098	0.0448	0.105	.	.	.	0.088	0.084	0.0217	.	.	.

Number	B	Bi	Ca*	Ce*	Mg*	N	Nb	O*	Pb	Se	Ta	V	W	Zn	Zr	Units
VS UG87	.	.	.	.	.	0.010	.	.	0.00008	.	.	0.0038	.	.	.	~47 mm Ø x ~30 mm
12X 12749W	.	.	.	.	.	.	.	.	.	.	.	0.069	0.034	.	.	~40 mm Ø x ~15 mm
SS 454/1	.	.	.	.	.	.	.	.	(0.0001)	.	.	.	0.15	.	.	38 mm Ø x 19 mm last
IMZ 120	.	.	.	.	.	0.0115	.	.	0.077	.	.	.	.	.	.	40 mm Ø x 40 mm
12X 15266V	.	.	.	.	.	.	1.438	.	.	.	0.116	0.106	.	.	.	~40 mm Ø x ~15 mm
IRSID 1656	.	.	.	.	.	.	.	.	.	.	.	(0.002)	.	.	.	40 mm Ø x 35 mm
12X 15260W	.	.	.	.	.	.	0.254	.	.	.	(0.016)	0.442	.	.	.	~40 mm Ø x ~15 mm
12X 350B	.	.	.	.	.	.	.	.	.	.	.	0.0286	0.275	.	.	40 mm Ø x 15 mm
12X 350C *	.	.	* Provisional Analysis			.	.	.	.	.	.	0.012	0.25	.	.	~40 mm Ø x ~15 mm
12X 353G	.	0.0246	.	.	.	0.0027	0.0641	.	0.0179	0.0192	.	0.0189	0.135	.	0.034	~40 mm Ø x ~15 mm
12X 12746U	.	.	.	.	.	0.0218	.	.	.	.	.	0.0160	0.101	.	.	40 mm Ø x ~20 mm last
12X 358A	.	0.0102	.	.	.	0.0029	0.104	.	0.0052	0.097	.	0.0261	0.123	.	0.0113	~40 mm Ø x ~15 mm
12X 355C	(0.0012)	.	.	.	.	0.0023	0.023	.	.	0.0395	.	0.1265	0.037	.	0.0192	~40 mm Ø x ~15 mm
12X 354B	.	.	.	.	.	0.0027	0.0802	.	.	.	.	0.0204	0.0248	.	.	~40 mm Ø x ~15 mm
ECRM 055-2D	.	.	.	.	.	0.01069	.	.	.	.	.	0.00245	0.0166	.	.	38 mm Ø x 25 or 30 mm
12X 357C	0.0102	0.0058	.	.	.	0.0079	0.0051	.	0.0315	(0.004)	.	0.166	0.0194	0.0094	.	~40 mm Ø x ~15 mm
BS 1030	0.0003	.	12	(2)	.	0.0107	(0.0004)	50	0.0005	.	(0.001)	0.031	0.0012	.	(0.0002)	38 mm Ø x ~7 or 19+ mm 17025
VS UG90	.	.	.	.	.	0.015	.	.	.	.	.	.	.	.	.	~47 mm Ø x ~30 mm
VS UG89	.	.	.	.	.	0.017	0.0043	.	0.0003	.	.	0.021	.	.	.	~47 mm Ø x ~30 mm
BS 2931B	0.0002	.	2	.	1	0.0076	0.0011	21	(0.00004)	.	(0.0004)	0.0014	0.0007	last	0.0005	38 mm Ø x ~2 mm 17025
VS UG92	.	.	.	.	.	0.016	0.034	.	0.00017	.	.	0.024	.	.	.	~47 mm Ø x ~30 mm
IRSID 1670	0.0007	.	.	(2)	.	0.0016	(0.0003)	.	.	.	.	(0.0005)	.	.	.	37 mm Ø x 30 mm
VS UG88	.	.	.	.	.	0.020	0.059	.	0.00015	.	.	0.117	.	.	.	~47 mm Ø x ~30 mm
VS UG91	.	.	.	.	.	0.010	0.097	.	0.00006	.	.	0.049	.	.	.	~47 mm Ø x ~30 mm
SS 458/2	0.0069	.	.	.	.	.	0.0510	.	0.0140	.	.	0.105	.	.	(0.064)	38 mm Ø x 19 mm
SS 457/2	0.0046	.	.	.	.	.	0.0174	.	0.0098	.	.	0.153	.	.	0.025	38 mm Ø x 19 mm

## BISMUTH AND SELENIUM STEEL

# = Class, where 1 = CRM and 2 = RM

BS: 38 mm Ø x ~7 or 19+ mm CZ: ~39 mm Ø x 25 mm

#	Number	Bi	Se	C	Mn	P	S	Si	Cu	Ni	Cr	Al	As	Co	Mo	N
2	BS 4140A	0.105	.	0.40	0.84	0.021	0.076	0.21	0.15	0.15	0.97	0.016	0.005	0.010	0.16	0.0098
2	BS 53MOD	0.102	.	1.01	0.36	0.011	0.012	0.26	0.070	0.072	1.37	0.019	0.004	0.007	0.024	0.0086
2	BS 4140B	0.087	.	0.43	0.76	0.027	0.037	0.20	0.006	0.012	0.84	0.036	(0.002)	0.005	0.16	0.0064
2	BS 4150MOD	0.070	.	0.47	0.90	0.024	0.079	0.21	0.19	0.15	1.01	0.012	0.005	0.012	0.21	0.0087
2	CZ CM-16A	0.039	.	0.355	0.92	0.043	0.033	0.77	0.293	0.72	0.70	0.125	0.058	0.056	0.405	0.015

Number	B	Ca	Nb	O	Pb	Sb	Sn	Ti	V	W	Zn	Zr
BS 4140A	.	(0.0003)	.	(0.0025)	(0.001)	.	0.011	(0.003)	0.004	.	.	last
BS 53MOD	.	(0.001)	.	(0.002)	0.0005	.	0.008	.	0.005	.	.	.
BS 4140B	.	(0.0002)	.	(0.002)	0.004	.	(0.002)	0.003	0.005	.	.	.
BS 4150MOD	.	0.0010	.	(0.003)	0.0010	.	0.013	(0.002)	0.008	.	.	.
CZ CM-16A	0.012	0.0006	0.066	.	0.053	0.027	0.025	0.099	0.319	0.141	0.021	0.062

## CALCIUM IN STEEL

# = Class, where 1 = CRM and 2 = RM analysis listed in mass % except \* which is mg/kg

#	Number	Ca	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Als	Co	Mo	N	V
1	<b>BS HiCal-1</b>	0.0140	0.271	1.00	(0.007)	0.0007	1.29	0.152	3.28	1.55	0.070	.	0.0024	0.379	.	0.0027
1	SS 115	0.0058	0.6224	0.682	0.0123	0.00093	0.2078	.	0.0196	0.0198	0.0527	.	.	.	0.0067	.
1	<b>BS 9325A</b>	0.0039	0.203	0.969	0.0079	0.0045	0.612	0.163	3.29	1.50	0.0056	.	0.0093	0.358	0.0076	(0.0024)
1	SS 116	0.0036	0.617	0.6756	0.0092	0.00176	0.201	.	0.0155	0.0141	0.0587	.	.	.	0.0069	.
1	ECRM 194-1D	0.0026	0.1532	1.188	0.0097	0.0006	0.431	0.0751	0.3417	0.733	0.0837	.	.	0.2857	0.0115	0.0243
1	<b>BS XCCS-1</b>	0.0024	0.0441	0.356	0.0068	0.0022	0.292	0.0143	0.0132	0.0288	0.061	.	0.0017	0.0060	0.0052	0.0012
1	<b>BS 1020</b>	0.0022	0.210	0.568	0.0058	0.0249	0.250	0.184	0.059	0.109	0.0006	.	0.0070	0.018	0.0109	0.0363
2	HRT FE2009-N	0.0020	0.12	0.55	0.010	0.003	0.32	0.08	0.25	2.56	0.030	.	.	1.02	.	0.015
1	IRSID 1665	0.0017	0.1209	0.446	0.0104	0.0135	0.187	0.0469	0.0308	0.0363	.	0.0379	0.0046	0.0047	0.0049	(0.0006)
1	<b>BS 3941</b>	0.0011	0.407	0.802	0.016	0.023	0.257	0.053	0.018	0.069	0.0019	.	0.0042	0.0061	0.0069	0.0025
1	IARM 254A	0.001	0.500	0.78	0.010	0.024	0.211	0.091	0.044	0.050	0.025	.	0.006	0.013	0.0096	0.002
2	BS 4150MOD	0.0010	0.47	0.90	0.024	0.079	0.21	0.19	0.15	1.01	0.012	.	0.012	0.21	0.0087	0.008
2	BS 4330V	0.0010	0.318	0.91	0.008	0.0009	0.240	0.181	1.91	0.91	0.021	.	0.011	0.475	0.0076	0.094
1	<b>BS 4130</b>	0.0007	0.303	0.541	0.0105	0.0113	0.245	0.221	0.088	0.924	0.0242	.	0.0065	0.168	0.0072	0.0037
2	<b>BS 4942</b>	0.0006	0.414	0.56	0.015	0.021	0.22	0.165	0.16	0.97	(0.004)	.	0.010	0.54	0.0080	0.28
2	BS 2952	0.0003	1.03	0.33	0.013	0.014	0.32	0.106	0.135	1.36	0.024	.	0.007	0.044	0.0084	0.005
1	<b>BS PP20</b>	0.0003	0.382	1.41	0.018	0.0070	0.262	0.119	1.00	1.94	0.0132	.	0.0145	0.212	0.0080	0.066
1	IMZ 111	0.0003	0.106	0.31	0.010	0.039	0.55	0.036	0.23	0.072	0.017	0.007	.	0.084	0.0133	0.022
2	TL 1669	0.00017	0.00226	0.0955	0.0137	0.0100	0.0093	0.0217	0.0160	0.0246	0.03553 (tot)	.	0.0019	0.0011	0.0024	(0.0006)

Number	As	B	Bi	Nb	O	Pb	Sb	Sn	Ti	W	Zr	Other
<b>BS HiCal-1</b>	0.0022	(0.0001)	.	(0.002)	.	(0.0005)	.	(0.0002)	0.0037	(0.0009)	(0.0008)	~38 mm Ø x ~30 mm
SS 115	.	.	.	.	.	.	.	.	0.0027	.	.	38 mm Ø x 19 mm
<b>BS 9325A</b>	0.0024	(0.0001)	.	0.0017	.	(0.0003)	Fe: 92.8	(0.0003)	0.0030	0.024	(0.001)	~40 mm Ø x ~30 mm
SS 116	.	.	.	.	.	0.00012	.	.	0.00171	.	.	44 mm Ø x 19 mm
ECRM 194-1D	0.0042	0.0020	.	.	.	.	.	.	.	.	.	Block ~38 x 34 x 32 mm
<b>BS XCCS-1</b>	0.0024	(0.0004)	.	(0.001)	Fe: 99.2	(0.0006)	(0.0005)	0.0002	0.0015	(0.003)	0.0006	~40 mm Ø x ~30 mm
<b>BS 1020</b>	0.0074	(0.0001)	.	(0.0003)	0.0046	(0.0002)	(0.0018)	0.0090	(0.0005)	(0.0004)	(0.0005)	44 mm Ø x ~7 or 19+ mm
HRT FE2009-N	.	.	.	.	.	.	.	.	.	.	Zn: 0.004	40 mm Ø x 40 mm
IRSID 1665	0.0067	(0.00032)	.	.	.	(0.0014)	(0.0008)	0.0031	(0.0008)	.	.	37 mm Ø x 30 mm
<b>BS 3941</b>	0.0036	(0.0001)	.	0.033	0.0055	0.0010	0.0005	0.0019	0.0017	(0.0004)	(0.0003)	41 mm Ø x ~7 or 19+ mm
IARM 254A	0.005	0.0002	.	0.001	(0.003)	(0.0003)	.	0.005	0.001	(0.001)	(0.001)	31 mm Ø x 2 mm
BS 4150MOD	0.005	.	0.070	.	(0.003)	0.0010	.	0.013	(0.002)	.	.	38 mm Ø x ~7 or 19+ mm
BS 4330V	.	.	.	.	0.0018	.	.	0.010	.	.	.	37 mm Ø x ~7 or 19+ mm
<b>BS 4130</b>	0.0048	(0.0002)	.	0.0015	0.0015	(0.00003)	(0.0021)	0.0099	0.0009	0.0011	Mg: 0.0002	38 mm Ø x ~7 or 19+ mm
BS 4942	0.005	.	.	.	(0.0021)	.	.	0.014	.	.	.	38 mm Ø x ~7 or 19+ mm
BS 2952	0.004	.	.	.	(0.002)	.	0.003	0.006	0.003	.	.	44 mm Ø x ~7 or 19+ mm
<b>BS PP20</b>	0.0049	0.00011	.	0.0048	(0.0010)	.	0.0013	0.0069	0.0007	0.0058	.	38 mm Ø x ~7 or 19+ mm
IMZ 111	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
TL 1669	0.0017	0.00038	.	0.00046	.	0.00013	0.00049	0.0071	0.0504	.	(0.00021)	38 mm Ø x 25 mm
												Zn: 2.7*

## CRM Al, Ca, AND N IN LOW ALLOY STEEL

Number	Al	Ca	N	Units
IMZ 133	.	.	<b>0.0360</b>	40 mm Ø x 40 mm
IMZ 131	0.0043	.	<b>0.0333</b>	40 mm Ø x 40 mm
IMZ 135	0.0274	0.0008	<b>0.0238</b>	40 mm Ø x 40 mm
IMZ 169	0.075	.	<b>0.0193</b>	40 mm Ø x 40 mm
IMZ 141	0.0071	.	<b>0.0154</b>	40 mm Ø x 40 mm
IMZ 130	0.0046	0.0024	<b>0.0153</b>	40 mm Ø x 40 mm
IMZ 139	(0.029)	0.0031	<b>0.0113</b>	40 mm Ø x 40 mm
IMZ 132	0.0021	0.0002	<b>0.0097</b>	40 mm Ø x 40 mm
IMZ 137	0.0017	0.00025	<b>0.0083</b>	40 mm Ø x 40 mm
IMZ 140	0.0307	0.0015	<b>0.0083</b>	40 mm Ø x 40 mm
IMZ 138	0.0022	.	<b>0.0063</b>	40 mm Ø x 40 mm
IMZ 134	0.0124	0.0005	.	40 mm Ø x 40 mm
IMZ 136	0.0034	0.00031	.	40 mm Ø x 40 mm

## C-Mo and Cr-Mo STEEL XRF SET

# = class, where 1 = CRM ISO 17025 and 2 = RM, Set Part Number: BS MOLY-5 AVAILABLE INDIVIDUALLY ~7 mm discs

#	Grade	Alloy	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Co	N	Sn	V
2	C-.5Mo	4419	BS 3952	0.208	0.546	0.011	0.021	0.264	0.202	0.112	0.105	0.519	0.048	.	(0.0005)	.	.
1	1.25Cr-.5Mo	F-11	<b>BS 45B</b>	0.140	0.502	0.0068	0.017	0.583	0.101	0.136	1.14	0.60	0.030	0.0090	0.0066	0.0069	0.0083
2	2.25Cr-1Mo	F-22	BS 1982	0.128	0.441	0.012	0.026	0.255	0.177	0.197	2.09	0.89	0.021	0.010	0.0097	0.013	0.003
2	5Cr-.5Mo	F-5	BS 47A	0.130	0.44	0.017	0.015	0.27	0.11	0.12	4.22	0.47	0.015	0.011	0.018	0.008	0.016
1	9Cr-1Mo	F-9	<b>BS 48B</b>	0.110	0.365	0.0228	0.0068	0.75	0.070	0.165	8.78	0.949	0.0157	0.0165	0.0088	0.0049	0.033

## CRM EPMA SETS

available in sets only, as grouped 4x10x15mm

Number	Cr	Number	Ni
NMIJ 1001-a	5.00	NMIJ 1006-a	5.04
NMIJ 1002-a	14.96	NMIJ 1007-a	10.05
NMIJ 1003-a	19.87	NMIJ 1008-a	20.02
NMIJ 1004-a	29.84	NMIJ 1009-a	39.92
NMIJ 1005-a	39.69	NMIJ 1010-a	60.07

Cr-Mo STEEL (Cr > 1, Mo > 0.1)

# = Class, where 1 = CRM and 2 = RM \* Provisional Analysis

Table with columns: #, Number, Cr, Mo, C, Mn, P, S, Si, Cu, Ni, Al, As, Co, N, Sn, V. Lists various steel grades and their chemical compositions.

Table with columns: Number, B, Ca, Nb, O, Pb, Sb, Ta, Ti, W, Zr, Units. Provides detailed specifications and units for various steel grades.















## LOW ALLOY STEEL WITH 0.13 % &lt; C &lt; 0.3 %

CONTINUED FROM THE PREVIOUS PAGE

Number	B	Ca	Fe	Mg	Nb	O	Pb	Sb	Ta	Ti	W	Zn	Zr	Units
IARM 330A	0.0003	0.0010	.	.	(0.003)	(0.0009)	(0.0004)	(0.001)	.	0.006	(0.004)	.	0.0015	31 mm Ø x 2 mm
12X 16604A	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~15 mm
SRM 1269	.	.	.	.	.	.	0.005	.	.	.	.	.	.	32 mm Ø x 19 mm
12X 352D	.	.	.	.	.	.	.	.	.	0.285	0.223	.	.	~40 mm Ø x ~15 mm
ECRM 086-1D	.	.	.	.	.	.	.	.	.	.	.	.	.	38 mm Ø x 25 or 30 mm
CZ CM-3A	0.0002	.	.	.	0.006	.	.	.	.	0.006	0.015	.	.	~39 mm Ø x 25 mm
VS UG9/10	.	.	.	.	.	.	.	.	.	0.163	1.34	.	.	~45 mm Ø x ~28 mm
HRT FE2000-N	.	0.0015	.	.	.	.	.	.	.	.	0.025	.	.	40 mm Ø x 20 mm last
VS RG27/1	.	.	.	.	.	.	.	.	.	0.110	0.170	.	.	~45 mm Ø x ~28 mm
IMZ 178	.	.	.	.	0.105	.	.	.	.	.	0.017	.	.	40 mm Ø x 40 mm
SRM 1225	.	.	.	.	.	.	.	.	.	.	.	.	.	32 mm Ø x 19 mm
<b>BS HiCal-1</b>	(0.0001)	0.0140 [91.9]	(0.0003)	(0.0002)	(0.002)	.	(0.0005)	.	.	0.0037	(0.0009)	.	(0.0008)	~38 mm Ø x ~30 mm <b>17025</b>
IARM 380A	.	.	.	.	(0.0020)	.	.	.	.	.	(0.009)	.	.	31 mm Ø x 2 or 18 mm
RM Fe 2/4	(0.0027)	<0.001	.	.	(0.011)	.	<0.02	<0.03	.	(0.0065)	0.19	.	<0.02	40 mm Ø x 40 mm
BS 69B	.	.	.	.	.	.	.	.	.	(0.002)	.	.	.	38 mm Ø x ~7 or 19+ mm
12X 12750U	.	.	.	.	0.111	.	.	.	.	0.159	0.100	.	.	~40 mm Ø x ~15 mm
12X 32550A	.	.	.	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~15 mm
BS 6418	.	.	.	.	.	0.0012	.	.	.	0.003	.	.	.	57 mm Ø x ~7 or 19+ mm
IARM 380B	.	.	.	.	(0.0016)	.	.	.	.	0.0011	(0.003)	.	.	31 mm Ø x 2 or 18 mm
IMZ 113	.	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
DSZU C043	(0.0005)	0.0005	.	.	0.004	.	.	.	.	0.046	0.082	.	.	40 mm Ø x 25 mm
12X 722M24A	.	.	.	.	.	.	.	.	.	.	.	0.0028	.	~38 mm Ø x ~15 mm
VS UG6/5	.	.	.	.	(0.01)	.	.	.	.	(0.01)	0.16	.	.	~45 mm Ø x ~28 mm
IARM 229B	(0.0006)	(0.0003)	.	.	(0.0019)	(0.0017)	(0.0005)	(0.0006)	(0.003)	0.0019	(0.003)	.	(0.0008)	31 mm Ø x 2 or 18 mm
ECRM 197-1D	.	.	.	.	.	.	.	.	.	0.0005	.	.	.	38 mm Ø x 25 mm
BS 3961	.	.	.	.	.	.	.	.	(<0.003)	.	.	.	.	44 mm Ø x ~7 or 19+ mm
TL 1668	(0.00024)	0.0019	(0.0003)	(0.0002)	.	.	(0.0007)	(0.0003)	.	0.0032	.	0.0008	(0.0003)	37 mm Ø x 25 mm
<b>BS 8620F</b>	(0.0003)	0.0020	97.1	(0.0002)	0.0025	0.0026	(0.002)	(0.002)	<b>17025</b>	0.0016	0.0016	.	(0.0008)	38 mm Ø x ~7 or 19+ mm
DSZU C048	.	(0.0017)	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 25 mm
IPT 502	.	.	.	.	.	.	.	.	.	0.0016	.	.	.	36 mm Ø x 20 mm
VS UG4/11	.	.	.	.	0.071	.	.	.	.	0.034	0.0092	.	.	~45 mm Ø x ~28 mm
IARM 33D	0.0002	(0.0003)	.	.	0.002	0.0013	<0.001	(0.002)	.	0.003	<0.005	.	<0.002	31 mm Ø x 2 or 18 mm
BS 3952	.	.	.	.	.	.	.	.	.	.	.	.	.	39 mm Ø x ~7 or 19+ mm
ECRM 187-2D	0.00048	.	.	.	.	.	.	.	.	.	.	.	.	39 mm Ø x 28 mm
<b>BS 9325A</b>	(0.0001)	0.0039	92.8	(0.0002)	0.0017	.	(0.0003)	.	(0.010)	0.0030	0.024	<b>17025</b>	(0.001)	~40 mm Ø x ~30 mm
<b>BS 4820A</b>	0.0002	0.0003	.	0.0003	(0.002)	0.0011	(0.0002)	0.0024	.	0.0012	(0.002)	<b>17025</b>	.	38 mm Ø x ~7 or 19+ mm
SRM 1763a	0.0054	.	(95.3)	.	0.100	.	.	(0.011)	(0.012)	0.308	(0.002)	.	0.044	34 mm Ø x 19 mm
VS RG29/1	.	.	.	.	0.044	.	.	.	.	0.020	0.62	.	.	~45 mm Ø x ~28 mm
12X 12747V *	*	Provisional Analysis	.	.	.	.	.	.	.	0.100	0.028	.	.	~40 mm Ø x ~15 mm
VS RG31/1	.	.	.	.	.	.	.	.	.	0.21	0.39	.	.	~45 mm Ø x ~28 mm

Number	B	Ca	Fe	Mg	Nb	O	Pb	Sb	Ta	Ti	W	Zn	Zr	Units
KUT B3	.	.	.	.	.	.	.	.	.	.	1.19	.	.	30-35mm Ø x 39 mm
VS UG5/5	.	.	.	.	(0.01)	.	.	.	.	(0.003)	0.38	.	.	~45 mm Ø x ~28 mm
IARM 155F	.	.	.	.	0.0016	(0.003)	.	.	.	0.0020	(0.004)	.	.	31 mm Ø x 2 or 18 mm
12X 86200A	.	.	.	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~15 mm
12X LA2E	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~15 mm
IMZ 112	.	.	.	.	0.013	.	.	.	.	0.010	.	.	.	40 mm Ø x 40 mm
VS UG8/10	.	.	.	.	(0.003)	.	.	.	.	0.0034	.	.	.	~45 mm Ø x ~28 mm
VS UG114	.	.	.	.	.	.	.	.	.	0.006	.	.	.	~45 mm Ø x ~25 mm
BS 51F	(0.0001)	(0.0005)	.	(0.0001)	(0.0005)	0.0020	(0.00007)	(0.0011)	.	(0.0012)	(0.0030)	(0.0002)	.	38 mm Ø x ~7 or 19+ mm
IMZ 162	.	.	.	.	.	.	.	.	.	0.12	.	.	.	40 mm Ø x 40 mm
VS UG113	.	.	.	.	.	.	.	.	.	0.006	0.007	.	0.169	~45 mm Ø x ~25 mm
BS 4620	0.00006	0.0001	.	0.0001	0.0001	0.0009	0.0002	0.0024	.	0.0026	0.0009	0.0002	.	38 mm Ø x ~7 or 19+ mm
ECRM 192-1D	.	.	.	.	.	.	.	.	.	.	.	.	.	~35 mm Ø x ~30 mm
VS UG112	.	.	.	.	.	.	.	.	.	0.0028	0.005	.	0.0047	~45 mm Ø x ~25 mm
DSZU C08	0.011	.	.	.	0.122	.	.	.	.	0.060	0.966	(0.003)	(0.006)	40 mm Ø x 30 mm last
BS LF3	0.0001	(0.0001)	.	.	.	0.004	.	.	.	.	.	.	.	38 mm Ø x ~7 or 19+ mm
HRT FE2012-N	.	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 20 mm
IMZ 74A	(0.002)	(0.0004)	.	.	0.041	.	.	.	.	0.022	.	.	.	43 mm Ø x 20 mm
12X 19MNV56A	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~15 mm
ECRM 087-1D	.	.	.	.	.	.	.	0.0046	.	.	.	.	.	38 mm Ø x 25 or 30 mm
12X 15180A	.	.	.	.	.	.	.	.	.	.	.	0.0016	.	~40 mm Ø x ~20 mm
HRT FE2013-N	.	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 20 mm
ECRM 194-2D	0.00155	.	.	.	0.0290	.	.	.	.	0.00322	.	.	.	39 mm Ø x 28 mm
BS 3962	.	.	.	.	.	.	.	.	.	.	.	.	.	37 mm Ø x ~7 or 19+ mm
VS UG7/11	.	.	.	.	.	.	.	.	.	0.20	0.385	.	.	~45 mm Ø x ~28 mm
CZ CM-8A	0.004	.	.	.	0.034	.	.	.	.	(0.001)	0.01	.	.	~39 mm Ø x 25 mm
HRT FE1999-N	0.0002	.	.	.	0.002	.	.	.	.	0.001	.	.	.	40 mm Ø x 20 mm
BS XCCT	.	.	.	.	(0.001)	(0.005)	(<0.001)	(0.0004)	.	(0.002)	.	.	(<0.002)	36 mm Ø x ~7 or 19+ mm
IMZ 176A	.	.	.	.	.	.	.	.	.	.	(0.015)	.	.	40 mm Ø x 40 mm
BS 15A	(0.0002)	(0.0005)	.	.	0.041	.	(0.0003)	(0.003)	.	0.008	(0.004)	.	0.022	32 mm Ø x 17 mm last
RM Fe C/2	0.0030	(0.0013)	.	.	0.0073	.	.	0.0190	.	0.0074	0.34	.	0.010	40 mm Ø x 40 mm
ECRM 193-1D	.	.	.	.	0.0232	.	.	.	.	(0.0013)	.	.	.	36-41 mm Ø x 28-35 mm
BS 47A	.	.	.	.	0.002	(0.003)	.	.	.	0.003	.	.	.	38 mm Ø x ~7 or 19+ mm

Number	B	Ca	Fe	Mg	Nb	O	Pb	Sb	Ta	Ti	W	Zn	Zr	Units
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**RM LOW ALLOY STEEL XRF SET**Part Number: BS LAS-24 Set of 24 samples, each 35 - 45 mm Ø x 7 mm discs **17025**

Alloy	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	As	Ca	Co	N	Sn	V
300M	BS 4340M	0.414	0.74	0.004	<0.001	1.65	0.134	1.78	0.78	0.35	0.076	0.007	.	0.013	0.0020	0.009	0.056
1345	BS XCCV	0.44	1.75	0.012	0.024	0.28	0.015	0.019	0.041	0.007	0.033	0.0023	.	0.006	0.0056	(0.0004)	(<0.003)
3115	BS XCCT	0.158	0.52	0.005	0.011	0.28	0.027	1.27	0.65	0.020	0.006	0.004	.	0.017	0.0076	(0.002)	0.031
4130	BS 3932	0.321	0.54	0.016	0.018	0.33	0.200	0.19	1.00	0.229	0.020	0.004	0.0043	0.011	0.0070	0.012	0.005
4140	BS 1962	0.41	0.94	0.007	0.011	0.242	0.224	0.16	1.05	0.229	0.018	0.007	.	0.008	0.0095	0.010	0.004
4150 + S	<b>BS 42</b>	0.516	1.24	0.021	0.073	0.235	0.252	0.183	0.67	0.190	0.020	(0.004)	.	0.012	0.0080	0.012	0.003
4330	BS 4330V	0.318	0.91	0.008	0.0009	0.240	0.181	1.91	0.91	0.475	0.021	.	0.0010	0.011	0.0076	0.010	0.094
4340	BS 60E	0.408	0.70	0.012	0.024	0.26	0.153	1.73	0.86	0.249	0.024	0.007	0.0010	0.009	0.0087	0.009	0.004
4615	BS 51E	0.15	0.59	0.010	0.021	0.28	0.22	1.75	0.14	0.21	0.028	.	.	0.035	0.0086	0.010	(0.0011)
4620	BS 4620	0.189	0.57	0.006	0.018	0.25	0.216	1.75	0.072	0.24	0.032	(0.0084)	(0.0001)	0.012	0.0078	0.013	(0.0008)
4820	BS 4820	0.188	0.57	0.010	0.025	0.25	0.11	3.29	0.12	0.21	0.020	0.005	0.0046	0.008	0.0079	(0.008)	(0.002)
6150	BS 43A	0.491	0.811	0.008	0.026	0.252	0.184	0.242	0.93	0.059	0.003	.	.	0.008	0.0074	0.011	0.148
8620	BS 1931	0.194	0.84	0.007	0.018	0.235	0.116	0.42	0.50	0.168	0.021	0.007	(0.0008)	0.012	0.0079	0.007	0.002
8822	BS 8822	0.228	0.92	0.011	0.025	0.26	0.17	0.47	0.52	0.34	0.022	0.007	(0.0004)	0.019	0.0085	0.011	0.003
8740	BS 67B	0.40	0.94	0.007	0.020	0.23	0.19	0.53	0.51	0.22	0.024	.	.	0.011	0.0078	0.009	(0.002)
9310	BS 58D	0.127	0.45	0.010	0.005	0.32	0.156	3.02	1.35	0.14	0.042	.	.	0.009	0.0147	0.012	0.005
9325	BS 9325	0.25	0.91	0.008	0.007	0.32	0.13	3.29	1.48	0.31	0.030	(0.004)	0.0049	0.010	0.0089	0.009	0.004
P-20	BS 55E	0.307	0.72	0.014	0.024	0.60	0.032	0.053	1.66	0.40	(0.004)	.	.	(0.005)	0.0096	0.002	0.019
AMS 6418	BS 69B	0.2258	1.28	0.008	0.013	1.27	0.086	1.71	0.28	0.39	0.024	.	.	0.035	0.0057	0.006	(0.002)
A193	BS 4942	0.414	0.56	0.015	0.021	0.22	0.165	0.16	0.97	0.54	(0.004)	0.005	0.0006	0.010	0.0080	0.014	0.28
A485-1	BS A485-1	0.98	1.10	0.019	0.004	0.62	0.16	0.13	1.07	0.029	0.017	0.006	.	0.010	0.0060	0.011	0.003
E52100	BS 53E	1.08	0.37	0.007	0.012	0.24	0.11	0.26	1.45	0.10	0.003	.	.	0.011	0.0086	0.005	0.004
Nitriding	BS 68C	0.38	0.60	0.018	0.008	0.305	0.178	0.166	1.77	0.36	1.06	(0.004)	(0.0002)	0.011	0.0045	0.008	0.007
LF 3	BS LF 3	0.183	0.52	0.006	0.018	0.206	0.080	3.36	0.098	0.056	0.017	0.006	(0.0001)	0.056	0.0054	0.006	(0.002)

Alloy	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	As	Ca	Co	N	Sn	V
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**RM TOOL STEEL XRF SET**Part Number: BS TS-18 AVAILABLE INDIVIDUALLY **17025** ~7 mm discs

Grade	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	W	V	Co	N
A-2	BS 36C	0.96	0.46	0.023	0.027	0.31	0.18	0.19	5.01	0.99	.	(0.04)	0.11	0.03	.
A-10	BS A-10	1.41	1.75	0.016	0.022	1.15	0.16	1.82	0.24	1.53	0.006	<0.005	(0.004)	(0.010)	.
D-2	BS 37D	1.54	0.28	0.021	0.015	0.29	0.063	0.21	11.07	1.09	.	0.16	0.80	0.07	0.016
H-10	BS 49	0.36	0.33	0.014	0.015	0.92	0.072	0.20	3.51	2.41	0.004	0.31	0.62	2.00	0.0186
H-11	BS TH11	0.423	0.31	0.016	0.005	0.88	0.041	0.11	5.04	1.27	.	(0.01)	0.46	(0.008)	.
H-12	BS TH12	0.372	0.40	0.020	0.005	0.92	0.064	0.16	5.02	1.41	.	1.06	0.62	0.07	.
H-13	BS 34D	0.395	0.38	0.017	0.005	1.06	0.049	0.10	5.15	1.24	.	0.10	0.94	0.031	.
L-6	<b>BS 39B</b>	0.67	0.62	0.009	0.019	0.214	0.163	1.45	0.79	0.17	(0.011)	.	(0.01)	(0.02)	.
M-1	BS TM1	0.86	0.23	0.007	0.012	0.46	0.054	0.057	3.72	8.4	.	1.7	1.05	0.45	.
M-2	BS 32C	0.84	0.29	(0.018)	0.0010	0.29	0.13	0.35	3.98	4.85	(0.02)	6.3	2.03	0.31	.
O-1	<b>BS 35D</b>	0.879	1.13	0.021	0.024	0.22	0.141	0.132	0.495	0.035	(0.005)	0.46	0.181	0.012	.
O-6	<b>BS 41</b>	1.41	0.89	0.013	0.011	1.02	0.038	0.15	0.22	0.23	(0.007)	0.035	0.046	.	.
S-1	BS 33E	0.49	0.29	0.022	0.005	0.20	0.038	0.08	1.25	0.045	.	2.75	0.19	0.006	.
S-5	BS 38C	0.60	0.81	0.011	0.012	2.08	0.26	0.24	0.28	0.41	0.015	0.004	0.214	0.036	0.0081
S-7	BS TS7	0.529	0.70	0.016	0.010	0.27	0.05	0.10	3.18	1.34	.	0.19	0.35	0.043	.
T-1	<b>BS 30D</b>	0.745	0.348	0.029	0.0010	0.301	0.116	0.191	3.93	0.342	0.0123	17.73	1.077	0.101	0.0168
	BS 10V	2.46	0.52	0.019	0.079	0.89	0.076	0.08	5.41	1.30	<0.002	0.013	9.50	0.009	0.064
HP9-4-30	BS 9-4-30	0.30	0.22	0.008	<0.001	0.06	0.09	7.25	1.00	1.00	0.004	0.01	0.085	4.40	0.0015

Grade	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	W	V	Co	N
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## ALUMINUM IN STAINLESS AND HIGH ALLOY STEEL

# = Class, where 1 = CRM and 2 = RM

#	Number	Al	Ni	Cr	C	Mn	P	S	Si	Cu	Co	Mo	N	Nb	Ti	V
1	ECRM 299-1D	5.33	0.172	22.32	0.0154	0.2678	0.0152	0.00022	0.299	0.0382	0.0187	0.0186	0.0198	.	0.1289	0.0329
1	IMZ 158	1.56	0.24	25.51	0.091	1.34	0.015	0.007	2.23	0.097	.	0.025	.	.	0.12	0.078
1	13X PH17700A	1.172	6.98	16.88	0.0732	0.496	0.0181	0.0008	0.551	0.146	0.0464	0.340	0.0192	0.0201	0.051	0.0390
1	<b>BS 192</b>	1.17	7.11	16.44	0.074	0.835	0.025	0.0005	0.387	0.412	0.104	0.430	0.0290	0.168	0.076	0.124
2	CT X92834	1.14	8.32	12.57	0.035	0.044	0.003	0.003	0.019	0.030	0.030	2.20	.	0.001	0.019	<0.004
1	IARMPe177PH-18	1.09	7.11	17.08	0.080	0.730	0.020	(0.0005)	0.51	0.36	0.048	0.350	0.0153	0.009	0.083	0.062
1	13X PH13800A	1.075	8.04	12.53	0.0386	0.0332	0.0064	0.0030	0.081	0.0449	0.0220	2.10	0.0041	.	0.0122	0.0188
2	BS 184A	1.00	8.34	12.66	0.035	0.06	0.007	0.001	0.080	0.041	0.036	2.20	0.0045	(0.006)	0.051	0.014
1	<b>BS 192A</b>	0.98	7.01	16.44	0.066	0.768	0.021	<0.002	0.300	0.334	0.114	0.28	0.029	0.208	0.083	0.077
1	IARM 152C	0.94	7.30	16.99	0.072	0.74	0.024	0.0006	0.263	0.316	0.113	0.36	0.0172	0.012	0.098	0.072

Number	As	B	Ca	O	Sn	Ta	W	Zr	Units
ECRM 299-1D	0.0054	0.0002	.	.	.	.	.	0.1775	40 mm Ø x 25 mm
IMZ 158	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
13X PH17700A	.	0.0033	.	.	0.0055	.	0.009	.	~38 mm Ø x ~15 mm
<b>BS 192</b>	(0.005)	(0.0003)	0.0007	0.0014	0.008	(0.001)	0.05	.	38 mm Ø x ~7 or 19+ mm
CT X92834	.	0.0009	.	.	0.002	.	.	<0.001	30-35 mm Ø x x ~19 mm
IARM Fe177PH-18	.	(0.0017)	.	.	(0.006)	.	(0.011)	.	31 mm Ø x 2 or 18 mm
13X PH13800A	.	.	.	.	0.0051	.	.	.	~38 mm Ø x ~15 mm
BS 184A	.	(0.0004)	(0.0003)	(0.0003)	(0.002)	.	0.032	.	38 mm Ø x ~7 or 19+ mm
<b>BS 192A</b>	(0.0035)	(0.0003)	(0.0006)	(0.0006)	0.008	.	0.048	.	38 mm Ø x ~7 or 19+ mm
IARM 152C	(0.004)	0.0029	(0.0005)	(0.001)	0.007	(0.005)	0.026	.	31 mm Ø x 2 or 18 mm

## CRM BORON IN STAINLESS STEEL

35 mm x 45 mm x 16 mm

Number	B	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Mo	Ti	V	W
DSZU C61	2.14	(0.073)	(0.38)	(0.003)	(0.005)	(0.41)	(0.09)	(0.95)	(17.8)	(0.04)	(0.24)	(0.75)	(0.19)	(0.22)
DSZU C60	1.42	(0.058)	(0.50)	(0.002)	(0.006)	(0.35)	(0.01)	(0.51)	(11.9)	(0.11)	(0.37)	(2.70)	(0.41)	(0.20)
DSZU C62	1.15	(0.065)	(0.31)	(0.010)	(0.024)	(0.32)	(0.24)	(0.84)	(14.4)	(0.59)	(0.16)	(3.36)	(0.18)	(0.14)
DSZU C63	1.05	(0.070)	(0.27)	(0.014)	(0.006)	(0.30)	(0.39)	(0.48)	(11.3)	(0.25)	(0.09)	(0.70)	(0.08)	(0.10)

## CALCIUM IN STAINLESS AND HIGH ALLOY STEEL

# = Class, where 1 = CRM and 2 = RM

#	Number	Ca	Ni	Cr	C	Mn	P	S	Si	Cu	Co	Mo	N	Nb	V	W
1	<b>BS Ca304-4</b>	0.0075	8.77	18.26	0.096	0.783	0.0205	0.0070	0.887	0.143	(0.007)	0.0041	0.061	0.063	0.0686	0.0056
2	BS CA304-1	0.0045	8.57	18.30	0.045	1.06	0.026	0.016	0.71	0.34	0.20	0.34	0.083	0.026	0.09	0.04
1	13X 14923A	0.0044	0.452	11.26	0.205	0.501	0.0197	0.0031	0.330	0.0563	0.0207	0.819	0.0321	0.005	0.295	.
1	ECRM 379-1D	0.0033	30.83	26.79	0.0121	1.804	0.0166	0.0006	0.393	0.984	0.0390	3.290	0.0550	(0.0028)	0.0663	(0.0091)
1	13X 31603D *	0.003	10.05	17.60	0.021	1.45	0.036	0.025	0.38	0.355	0.19	2.00	0.062	0.010	0.074	0.038
1	13X 31603C	0.0029	10.03	16.83	0.023	1.879	0.0263	0.0245	0.350	0.306	0.148	2.02	0.080	0.0197	0.0895	0.0427
2	BS 193	0.0020	1.82	18.48	0.104	12.11	0.018	0.002	0.66	0.088	0.028	0.21	0.37	0.014	0.107	(0.007)
2	BS SS4952	0.0019	0.23	13.15	0.347	0.41	0.016	0.003	0.66	0.045	0.030	0.049	0.027	0.004	0.089	(0.007)
2	BS 82E	0.0014	12.49	22.38	0.062	1.61	0.027	0.001	0.58	0.26	0.12	0.31	0.072	0.062	0.064	0.041
1	<b>BS 9942</b>	0.0014	13.55	18.21	0.021	1.84	0.025	0.006	0.49	0.305	0.086	3.30	0.071	0.005	0.072	0.032
1	<b>BS 9842</b>	0.0010	20.02	24.19	0.059	1.50	0.025	0.0016	0.99	0.147	0.237	0.111	0.037	0.026	0.075	0.011
1	ECRM 272-1D	0.00090	0.2445	11.927	0.2815	0.600	0.0156	0.0196	0.420	0.0192	0.0145	0.0030	0.0508	0.0028	0.0167	.
2	BS 94C	0.0008	0.43	25.90	0.057	0.45	0.024	0.002	0.62	0.056	0.042	0.20	0.065	0.032	0.12	(0.03)
2	BS 82D	0.0007	14.12	22.40	0.058	1.85	0.020	0.009	0.63	0.16	0.042	0.144	0.070	0.053	0.087	0.028
2	BS 87F	0.0007	10.12	17.30	0.055	1.64	0.024	0.025	0.67	0.28	0.17	0.29	0.037	0.57	0.13	0.050
2	BS SS3951	0.0005	9.18	18.17	0.014	1.56	0.023	0.031	0.61	0.22	0.16	0.303	0.077	0.085	0.067	0.040

Number	Al	As	B	O	Pb	Sb	Sn	Ti	Zn	Units
<b>BS Ca304-4</b>	0.017	0.0063	0.0031	0.013	0.0008	(0.0002)	0.0024	0.0046	Zr:0.0036	~38 mm Ø x ~38mm
BS CA304-1	0.003	(0.003)	0.0006	0.0041	.	(0.0020)	0.010	0.028	.	38 mm Ø x ~5 mm last, sides not parallel
13X 14923A	0.003	.	.	.	.	.	0.004	.	.	~40 mm Ø x ~15 mm
ECRM 379-1D	(0.00246)	(0.0018)	0.00190	(0.0027)	(0.000038)	0.00057	0.0021	(0.0014)	.	38 or 45 mm Ø x 25 mm
13X 31603D *	0.01	* Provisional Analysis	.	.	.	.	0.008	0.001	.	~30 mm Ø x ~20 mm
13X 31603C	(0.005)	.	.	.	.	.	0.0053	.	.	~30 mm Ø x ~20 mm
BS 193	(0.003)	.	0.0007	(0.004)	.	.	0.004	0.003	.	32 mm Ø x ~7 or 19+ mm
BS SS4952	0.003	0.002	(0.0004)	0.005	.	.	0.004	0.002	.	38 mm Ø x ~7 or 19+ mm
BS 82E	0.006	.	0.0024	.	.	.	0.006	0.003	.	38 mm Ø x ~7 or 19+ mm
<b>BS 9942</b>	0.004	(0.004)	0.0014	(0.0023)	.	.	0.006	(0.002)	.	44 mm Ø x ~7 or 19+ mm
<b>BS 9842</b>	0.014	(0.002)	0.0025	(0.0044)	.	.	0.005	0.003	.	38 mm Ø x ~7 or 19+ mm
ECRM 272-1D	0.0046	0.0116	0.0018	.	.	0.0007	.	0.00096	0.0031	38 mm Ø x 25 or 30 mm
BS 94C	0.004	.	(0.0005)	0.0061	.	.	0.006	.	.	44 mm Ø x ~7 or 19+ mm
BS 82D	(0.002)	.	0.0040	0.007	.	.	0.004	0.005	.	38 mm Ø x ~7 mm last
BS 87F	0.004	0.005	(0.0006)	0.005	.	.	0.004	0.004	.	41 mm Ø x ~7 or 19+ mm
BS SS3951	0.002	.	(0.0006)	0.0075	.	.	0.007	(0.002)	.	41 mm Ø x ~7 or 19+ mm







## SULFUR AND PHOSPHORUS IN STAINLESS AND HIGH ALLOY STEEL

# = Class, where 1 = CRM, 2 = RM, and 3 = RM with no uncertainties

#	Number	S	P	Ni	Cr	C	Mn	Si	Cu	Al	Co	Mo	N	Nb	Ti	V
2	CT 416	0.36	0.018	0.24	13.15	0.088	0.52	0.63	0.004	.	0.019	0.065	0.020	.	.	0.025
1	IARM 10D	0.334	0.0178	0.291	12.42	0.110	1.11	0.475	0.192	(0.0027)	0.0187	0.148	0.0241	0.0027	0.0015	0.051
2	BS 150	0.33	0.020	0.19	18.61	0.048	1.71	0.43	0.042	0.002	0.024	1.97	0.029	0.003	.	0.054
1	SRM 1223	0.329	0.018	0.232	12.64	0.127	1.08	0.327	0.081	.	.	0.053	.	.	.	0.068
2	BS 90F	0.328	0.023	0.30	13.01	0.085	0.53	0.58	0.12	(0.006)	0.021	0.14	0.037	0.011	.	0.076
1	<b>BS 303</b>	0.326	0.028	8.17	17.23	0.044	1.80	0.415	0.627	0.0019	0.071	0.410	0.023	0.008	0.017	0.056
1	13X 30300A	0.312	0.0205	8.60	17.62	0.041	1.83	0.422	0.025	.	0.0255	0.334	0.034	.	.	0.091
2	CT 303	0.31	0.029	9.08	17.78	0.070	1.64	0.58	0.49	.	0.16	0.41	.	.	.	0.044
1	IARM 355A	0.31	0.0186	0.427	17.81	0.0274	0.47	0.435	0.083	0.0016	0.047	0.337	0.0439	0.0095	0.0020	0.038
2	BS 154	0.302	0.027	0.25	17.58	0.030	0.40	1.26	0.063	(0.002)	0.019	0.31	0.039	0.005	.	0.046
2	13X 12549K	0.29	0.092	1.26	11.70	0.16	0.34	0.43	0.10	.	0.52	1.49	.	.	0.23	.
2	BS 153	0.280	0.018	0.140	17.38	0.026	0.41	0.53	0.052	0.002	0.017	0.30	0.021	0.002	(0.004)	0.045
2	BS 152	0.275	0.022	0.14	13.41	0.320	0.36	0.44	0.050	(0.002)	0.015	0.061	0.020	0.006	.	0.051
3	CZ SP-1A	0.26	0.024	8.6	17.7	0.047	1.87	0.33	0.52	0.004	0.095	0.42	.	0.012	0.02	0.058
1	13X 12548M	0.219	0.027	1.075	12.96	0.188	0.577	0.425	0.230	.	0.353	1.318	0.0500	0.586	.	.
1	IARM 352A	0.21	0.0182	0.269	13.11	0.341	1.13	0.357	0.148	(0.0025)	(0.016)	0.38	0.029	(0.012)	0.0015	0.028
1	13X 43020A	0.189	0.0246	0.517	16.07	0.147	1.439	0.415	0.0687	0.0047	0.0191	0.226	0.0212	0.0102	.	0.0542
1	IMZ 154	0.16	0.040	9.86	17.71	0.076	2.18	0.89	0.33	(0.16)	0.105	2.58	.	.	1.00	0.073
1	NCS HS41751A	0.16	0.035	8.07	17.41	0.075	1.70	0.71	0.26	.	0.13	0.33	0.077	.	.	0.068
2	BS 155	0.145	0.014	0.13	16.64	1.00	0.35	0.40	0.035	(0.001)	0.019	0.46	0.032	0.002	.	0.10
1	13X 12536S	0.136	0.052	12.07	15.30	0.149	0.406	0.865	0.065	0.049	0.298	2.54	0.062	.	.	0.105
1	13X 12535BE	0.0591	0.0400	14.79	16.95	0.229	0.342	1.407	0.130	0.194	0.146	4.09	0.029	.	0.625	0.252
1	SRM C1154a	0.051	0.06	13.08	19.31	0.100	1.44	0.53	0.44	.	0.38	0.068	.	.	.	0.135
1	13X 19003C	0.046	0.0382	12.46	18.99	0.047	1.138	0.497	0.171	.	0.105	2.50	0.077	0.120	.	0.0486
1	VS LG58	0.0280	0.0135	4.26	23.4	0.48	0.99	0.292	0.388	.	.	2.41	.	0.214	0.039	0.264
1	VS LG60	0.0205	0.028	19.86	21.8	0.020	2.31	0.289	0.027	0.040	.	3.62	.	.	0.83	0.229
1	13X 18004B	0.0191	0.068	12.67	21.57	0.099	1.400	1.21	0.050	0.011	0.211	0.601	0.061	0.749	.	0.161
2	13X 19004B	0.014	0.069	17.9	22.8	0.066	1.96	0.36	0.022	.	.	3.62	.	0.18	.	.

Number	Ag	As	B	O	Pb	Sn	Ta	W	Units
CT 416	0.0002	.	.	.	<0.001	0.005	.	.	30-35 mm Ø x ~16 mm
IARM 10D	.	(0.007)	(0.002)	(0.005)	.	0.010	.	(0.005)	31 mm Ø x 2 or 18 mm
BS 150	.	.	.	0.012	.	(0.003)	.	0.01	35 mm Ø x ~7 or 19+ mm
SRM 1223	.	.	.	.	.	.	.	.	32 mm Ø x 19 mm
BS 90F	.	.	.	0.011	.	0.005	.	0.032	38 mm Ø x ~7 or 19+ mm
<b>BS 303</b>	.	.	0.0013	0.0058	.	0.0091	.	0.023	44 mm Ø x ~7 or 19+ mm <b>17025</b>
13X 30300A	.	.	0.0035	.	.	.	.	.	~40 mm Ø x ~15 mm
CT 303	0.0003	.	.	.	0.001	0.007	.	.	30-35 mm Ø x ~16 mm
IARM 355A	.	(0.004)	(0.0011)	(0.010)	(0.0002)	(0.005)	.	(0.018)	31 mm Ø x 2 or 18 mm
BS 154	.	.	.	0.008	.	(0.005)	.	(0.01)	38 mm Ø x ~7 or 19+ mm
13X 12549K	.	.	.	.	.	.	.	.	40 mm Ø x 15 mm
BS 153	.	(0.004)	.	.	(0.001)	0.002	.	(0.002)	35 mm Ø x ~7 or 19+ mm
BS 152	.	.	.	.	.	0.003	.	<0.01	41 mm Ø x ~7 or 19+ mm
CZ SP-1A	.	0.006	0.0007	.	.	0.01	.	0.03	~39 mm Ø x 25 mm
13X 12548M	.	.	.	.	Sb:0.022	.	.	0.031	40 mm Ø x 15 mm
IARM 352A	.	(0.005)	(0.0007)	(0.005)	.	0.0046	.	(0.005)	31 mm Ø x 2 or 18 mm
13X 43020A	.	.	(0.0032)	.	.	.	.	0.0108	~40 mm Ø x ~15 mm
IMZ 154	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
NCS HS41751A	.	.	.	.	.	.	.	.	38 mm Ø x 38 mm
BS 155	.	.	.	0.0048	.	(0.003)	.	.	36 mm Ø x ~7 or 19+ mm
13X 12536S	.	.	0.0274	.	.	0.018	0.091	.	~40 mm Ø x ~15 mm
13X 12535BE	.	.	0.0051	.	.	0.0194	(0.020)	.	~40 mm Ø x ~15 mm
SRM C1154a	.	.	.	.	0.017	.	.	.	32 mm Ø x 19 mm
13X 19003C	.	.	.	.	.	.	(0.005)	.	~40 mm Ø x ~15 mm
VS LG58	.	.	.	.	.	.	.	0.21	~47 mm Ø x ~30 mm
VS LG60	.	.	.	.	.	.	.	0.115	~47 mm Ø x ~30 mm
13X 19004B	.	.	.	.	.	.	.	.	40 mm Ø x 15 mm
13X 18004B	.	.	.	.	.	.	.	.	~40 mm Ø x ~15 mm

## SELENIUM IN STAINLESS AND HIGH ALLOY STEEL

# = Class, where 1 = CRM and 2 = RM

#	Number	Se	Ni	Cr	C	Mn	P	S	Si	Cu	Al	Co	Mo	N	Nb	Ti
2	BS 151	0.328	0.24	13.19	0.090	0.41	0.021	0.018	0.65	0.11	(0.002)	0.018	0.088	0.022	0.005	(<0.003)
2	BS 186A	0.229	35.86	0.16	0.040	0.72	0.008	0.0053	0.19	0.016	(0.001)	0.028	0.0032	0.0026	(<0.002)	(<0.003)
1	IARM 253A	0.21	9.17	17.90	0.041	1.50	0.140	0.0089	0.50	0.223	0.003	0.088	0.348	0.0373	0.016	0.002
1	IARM 24B	0.19	35.86	0.121	0.053	0.82	0.009	0.0010	0.28	0.052	0.002	0.036	0.011	0.0017	<0.01	0.002
1	IARM 353A	0.17	0.265	17.01	0.98	0.95	0.019	0.025	0.49	0.13	0.0018	0.032	0.50	0.027	(0.011)	0.0015
2	CT ISO124A	0.167	48.07	0.079	0.011	0.73	0.007	0.006	0.40	0.015	.	0.012	0.009	.	.	.
2	BS 156	0.142	0.35	16.87	1.06	1.15	0.022	0.007	0.47	0.09	(<0.002)	0.047	0.50	0.041	0.005	0.001
1	IARM 253B	0.13	9.11	17.64	0.051	1.61	0.13	0.011	0.46	0.44	(0.004)	0.145	0.59	0.031	0.021	0.0027

Number	B	Fe	O	Sn	Ta	V	W	Zr	Units
BS 151	.	.	0.009	0.005	.	0.046	0.010	.	50 mm Ø x ~7 or 19+ mm
BS 186A	.	.	.	(0.002)	.	0.0012	(0.01)	.	38 mm Ø x ~7 or 19+ mm
IARM 253A	0.0003	.	0.009	0.01	.	0.106	0.10	.	31 mm Ø x 2 or 18 mm
IARM 24B	(0.001)	62.6	0.003	0.0018	<0.005	<0.005	<0.04	<0.005	31 mm Ø x 2 or 18 mm
IARM 353A	(0.0006)	.	(0.005)	0.0056	(0.004)	0.116	0.041	(0.002)	31 mm Ø x 2 or 18 mm
CT ISO124A	.	50.65	.	.	.	.	.	.	30-35 mm Ø x ~19 mm
BS 156	.	.	0.0045	(0.004)	.	0.13	0.11	.	41 mm Ø x ~7 or 19+ mm
IARM 253B	0.0007	.	0.007	(0.012)	(0.003)	0.092	(0.05)	.	31 mm Ø x 2 or 18 mm

STAINLESS STEEL WITH NI < 5.0 %

CONTINUED ON THE NEXT PAGE

# = Class, 1=CRM, 2=RM, and 3=RM with no uncertainties analysis listed in mass % except \* which is mg/Kg \*\* Provisional Analysis

Table with columns: #, Number, C, Mn, P, S, Si, Cu, Ni, Cr, Co, Mo, N, Nb, Ti, V, W. It contains multiple rows of data for various stainless steel grades, including 14X HS10A, BS 156, BS 93F, IARM 13D, etc.



STAINLESS STEEL WITH NI < 5.0 %

CONTINUED FROM THE PREVIOUS PAGE

analysis listed in mass % except \* which is mg/kg \*\* Provisional Analysis

Table 1: Material data for stainless steel with Ni < 5.0%. Columns include Number, Al, As, B, Ca\*, Mg\*, Pb\*, O, Sb, Se, Sn, Ta, Zn, Zr, and Units. Rows list various grades like 14X HS10A, BS 93F, IARM 13D, etc.

Table 2: Material data for stainless steel with Ni < 5.0%. Columns include Number, Al, As, B, Ca\*, Mg\*, Pb\*, O, Sb, Se, Sn, Ta, Zn, Zr, and Units. Rows list various grades like 13X 15024X, BS 431, BS 410C, etc.

Table 3: Material data for stainless steel with Ni < 5.0%. Columns include Number, Al, As, B, Ca\*, Mg\*, Pb\*, O, Sb, Se, Sn, Ta, Zn, Zr, and Units. This is a partial table with only the first row visible.

















RM GRAY IRON as cast (not chill cast) CONTAINS FREE GRAPHITE OBS regularly requires extension of preburn time to analyze correctly

Table with 19 columns: Number, C, Mn, P, S, Si, Cu, Ni, Cr, Al, As, Co, Mo, Sb, Sn, Ti, V, mm Ø x mm H. Rows include BS 20G, BS 20W, BS 20R, BS 20E, BS 20P.

DUCTILE / NODULAR IRON

# = Class, where 1 = CRM and 2 = RM \* Provisional Analysis

Table with 19 columns: #, Number, C, Mn, P, S, Si, Cu, Ni, Cr, Al, Ce, Co, Mg, Mo, Ti, V. Rows include various grades like SCRM 666/12, BS 285BL, BS 285BK, BS 285BJ, BS 285BI, BS 285BH, BS 285BG, BS 285BF, BS 285BE, BS 285BD, BS 285BC, BS 285BB, BS 291EG, BS 291EF, BS 291EE, BS 291ED, BS 291EC, BS 286AF, SRM C1137a, BAS SIMO 1/4, BAS SIMO 2/2, SCRM 669/14, SCRM 668/13, SRM C2424.

Number As B Ca Fe La Nb Pb Sn W Zr Units

Table with 11 columns: Number, As, B, Ca, Fe, La, Nb, Pb, Sn, W, Zr, Units. Rows include SCRM 666/12, SCRM 667/13, BS 285BL, BS 285BK, BS 285BJ, BS 285BI, BS 285BH, BS 285BG, BS 285BF, BS 285BE, BS 285BD, BS 285BC, BS 285BB, BS 291EG, BS 291EF, BS 291EE, BS 291ED, BS 291EC, BS 286AF, SRM C1137a, BAS SIMO 1/4, BAS SIMO 2/2, SCRM 669/14, SCRM 668/13, SRM C2424.

RM Si-Mo CAST IRON

BAS SIMO: 48 mm x 42 mm x 12 mm block

CTIF: each unit = one pair 43 mm Ø x 5 mm discs

Table with 16 columns: Number, C, Mn, P, S, Si, Cu, Ni, Cr, Mo, Al, Ti, V, Co, As, Sn, Ce, Mg. Rows include CTIF SiMo-3, CTIF SiMo-1, CTIF SiMo-5, CTIF SiMo-2, BAS SIMO 1/3, CTIF SiMo-4, BAS SIMO 2/3.



## CAST IRON WITH MAGNESIUM - continued from the previous page

sizes shown below

Number	As	B	Bi	Ca	Fe	La	Nb	Pb	Sb	Se	Sn	W	Zr	Other
CZ 20034 17b	0.008	(0.0002)	(0.001)	.	.	.	.	(0.002)	.	.	(0.002)	0.004	.	.
CZ 20034 17a	0.007	(0.0002)	(0.001)	.	.	.	.	(0.002)	.	.	(0.002)	0.004	.	.
CZ 20034 17c	0.0005	(0.0006)	(0.002)	.	.	.	.	(0.002)	.	.	(0.002)	0.004	.	.
Y 2863-11	(0.022)	0.053	.	.	.	.	0.33	(0.0057)	(0.174)	.	(0.108)	0.010	.	.
CZ SPL17 43A	.	0.0014	(0.002)	.	.	N:0.0045	0.008	0.014	(0.004)	.	0.067	0.038	Zn:0.013	.
CZ SPL17 42A	.	0.0036	(0.002)	.	.	N:0.0027	0.045	0.020	0.015	.	0.027	0.020	Zn:0.013	.
Y 451045	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ 02033 2g	.	0.0023	0.006	.	.	.	.	0.008	0.029	.	0.015	(0.004)	.	Zn: 0.020
Y 2863-12	(0.0097)	0.0078	.	.	.	.	0.21	(0.056)	(0.471)	.	(0.307)	0.13	.	.
CZ 02033 2f	.	0.0020	(0.002)	.	.	.	.	0.005	0.028	.	0.014	(0.003)	(0.005)	Zn: 0.018
Y 4510251-16	.	0.0044	.	.	.	0.016	.	.	.	.	0.030	.	.	.
VS ChG 25	.	.	.	.	.	.	.	.	0.052	.	0.017	.	.	.
Y 451047	.	0.31	.	.	.	.	0.012	.	.	.	.	.	.	.
SCRM 668/13	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ 02033 3c	(0.007)	0.0044	(0.002)	.	.	.	.	0.005	.	.	0.009	(0.003)	.	.
SCRM 666/12	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SCRM 670/20	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ SPL17 31A	.	(0.0004)	.	.	.	N:0.0042	.	.	.	.	(0.003)	(0.005)	.	.
11X SG1A	0.0021	.	.	.	.	.	.	.	.	.	.	.	Zn:0.041	-50Ø x ~15mm
CZ 20034 15b	(0.003)	0.0033	0.010	.	.	.	.	.	0.058	.	0.005	0.007	.	.
CZ SPL17 34A	.	0.0076	(0.005)	.	.	N:0.0041	0.014	(0.006)	0.007	.	0.051	0.016	Zn:0.007	.
11X SG2A	0.0022	.	.	.	.	.	.	.	.	.	.	.	Zn:0.040	-50Ø x ~15mm
Y 451042	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ 02033 2e	.	0.0024	0.005	.	.	.	.	(0.004)	0.028	.	0.015	0.008	.	Zn: 0.025
CZ 20034 15c	(0.003)	0.0057	0.008	.	.	.	.	.	0.056	.	0.006	0.004	.	.
CZ SPL17 32A	.	(0.0005)	(0.007)	.	.	N:0.0042	.	0.022	0.023	.	(0.012)	(0.008)	Zn:0.011	.
CZ 02033 3b	.	0.0042	0.001	.	.	.	.	0.009	.	.	0.019	.	.	.
CZ SPL17 40A	.	0.0008	.	.	.	N:0.0063	.	.	.	.	(0.004)	.	Zn:(0.002)	.
VS ChG 28	.	.	.	.	.	.	.	.	.	0.015	0.017	.	.	.
CZ 20034 14a	0.036	0.0096	0.007	.	.	.	.	(0.005)	0.015	.	0.027	(0.005)	0.011	Zn: 0.010 last
CZ 20034 14b	0.034	0.0100	0.007	.	.	.	.	(0.005)	0.016	.	0.028	(0.005)	0.014	Zn: 0.009
<b>BS 286AF</b>	(0.01)	0.0085	.	(0.001)	[91.4]	.	(0.003)	.	.	.	(0.004)	(0.008)	(0.007)	<b>17025</b>
CZ 02033 3d	(0.018)	0.0071	(0.002)	.	.	.	.	0.005	0.007	.	0.009	.	.	.
CZ 02033 1f	.	0.0043	(0.001)	.	.	.	.	0.009	.	.	0.030	0.022	(0.008)	.
CZ 02033 1g	.	0.0034	0.005	.	.	.	.	0.016	.	.	0.028	0.015	(0.004)	.

Number	As	B	Bi	Ca	Fe	La	Nb	Pb	Sb	Se	Sn	W	Zr	Other
CZ 20034 13c	(0.002)	.	.	.	.	.	.	.	(0.002)	.	0.014	(0.003)	(0.02)	.
CZ 02033 1e	.	0.0036	(0.002)	.	.	.	.	0.007	.	.	0.032	0.021	(0.007)	Zn: 0.009
CZ 20034 14c	0.035	0.0123	.	.	.	.	.	.	0.020	.	0.025	(0.003)	0.013	Zn: 0.010
CZ 20034 13a	(0.002)	.	.	.	.	.	.	.	(0.002)	.	0.014	(0.003)	0.029	.
CZ 20034 13b	(0.002)	.	.	.	.	.	.	.	(0.002)	.	0.014	(0.003)	0.023	.
CKD 247B	0.010	0.000	0.007	.	(92.7)	0.019	0.052	(0.002)	0.005	(0.000)	0.038	(0.002)	0.009	Zn: 0.012
VS ChG 24	.	.	.	.	.	.	.	.	0.009	.	0.077	.	.	.
Y 2863-9	(0.041)	0.153	.	.	.	.	0.11	(0.093)	(0.116)	.	(0.124)	.	.	.
VS ChM5/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SCRM 667/13	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS ChM6/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS ChM8/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ SPL17 36A	.	0.022	(0.007)	.	.	N:0.0038	.	0.016	.	.	(0.002)	.	Zn:(0.002)	.
VS ChM13	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SCRM 669/14	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CKD 245B(U)	0.006	0.003	0.009	.	(92.5)	(0.00)	0.029	0.020	0.052	(0.029)	0.076	0.020	0.004	last
CKD 245A	0.002	0.007	0.008	.	(92.7)	(0.00)	(0.001)	0.015	0.050	(0.036)	0.076	0.021	0.003	last
VS ChG 26	.	.	.	.	.	.	.	.	.	.	0.031	.	.	.
VS ChM10	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SRM C1137a	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CZ SPL17 33A	.	0.0064	(0.002)	.	.	N:0.0043	0.032	0.010	0.019	.	0.039	0.079	Zn:0.009	.
CKD 246B	0.003	0.000	(0.001)	.	(92.6)	0.003	(0.001)	(0.002)	0.004	(0.00)	0.002	(0.011)	0.000	last
SRM C2424	.	(0.002)	.	.	.	0.0011	.	.	.	.	.	.	.	.
VS ChM9	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS ChM11	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Y 2863-7	(0.021)	0.100	.	.	.	.	0.041	(0.0025)	(0.010)	.	(0.0073)	.	.	.

BS: 28-34 mm Ø x 17-35 mm

CKD 24x: 37 mm x 37 mm x ~13-20 mm  
CZ: 40 mm Ø x 18 mmSCRM: 48 mm x 42 mm x 12 mm  
SRM: 32 mm Ø x 19 mmVS: ~39 mm Ø x ~39 mm  
Y: 30 mm Ø x 30 mm

**RM CAST IRON WITH YOUR CHOICE OF MAGNESIUM LEVELS** each unit: 2 pcs mushroom 43 mm Ø x 5 mm

Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mg	Al	Ce	Co	Sn	Ti	V	Zn	Other
CTIF 6134	3.70	0.25	0.030	<0.01	1.60	0.020	2.00	0.040	*	.	<0.03	.	.	.	.	.	.
CTIF 8532	3.7	0.288	0.05	.	2.6	0.0443	0.888	0.04	*	.	<0.025	.	0.0303	0.02	0.07	.	.
CTIF 6135	3.6	0.38	0.0130	(0.003)	0.9	0.0219	1.98	0.04	*	(0.006)	.	0.037	.	0.007	0.0155	.	.
CTIF 4500	3.38	0.60	0.059	(0.002)	1.97	.	1.45	0.014	*	0.033	0.023	0.065	.	.	.	.	.
CTIF 5781	3.35	0.26	0.030	(0.0025)	2.50	0.0061	0.83	0.040	*	.	.	(0.004)	.	0.0208	0.0150	.	.
CTIF 4497	3.12	0.605	0.043	(<0.002)	2.66	0.048	1.90	0.040	*	.	.	.	0.094	0.031	0.44	.	.
CTIF 7160	3.1	0.57	0.05	(0.001)	2.4	0.08	1.0	(0.1)	*	(0.02)	0.02	0.09	.	0.013	0.018	.	As: 0.009
CTIF 5037	3.04	0.76	0.043	(0.0025)	3.40	.	0.64	0.014	*	.	.	.	.	0.029	.	.	.
CTIF 3601B	3.0	0.35	0.037	(0.005)	2.1	0.019	1.08	0.029	*	.	<0.01	.	.	0.016	(0.005)	<0.05	Pb:(<0.002)
CTIF 8018	3.0	0.7	0.07	(0.0015)	3.0	0.08	0.127	0.09	*	0.02	(<0.02)	.	0.07	0.06	0.39	.	Sb:(0.01)
CTIF 6736	2.8	0.65	0.012	(0.002)	1.6	0.0258	1.7	0.03	*	.	.	.	.	0.008	(0.03)	.	.
CTIF 5783	2.55	0.2	0.0266	(0.003)	2.3	0.110	1.23	0.05	*	.	.	0.0074	.	0.015	0.0127	.	As: 0.0016

Magnesium level available in the below samples. X = available

For Mg Range	Order Suffix	3601B	4497	4500	5037	5781	5783	6134	6135	6736	7160	8018	8532
<0.005	<0.005	X	.	.	.	X	X	.	.	.	.	X	X
0.005 - 0.009	0.005	X	.	.	X	X	X	.	.	X	.	X	X
0.010 - 0.014	0.01	.	.	.	X	X	X	.	.	X	X	X	X
0.015 - 0.024	0.02	X	.	.	X	X	X	.	X	X	X	X	X
0.025 - 0.034	0.03	.	.	.	X	.	X	.	X	X	X	X	X
0.035 - 0.044	0.04	.	.	.	X	.	X	.	X	X	X	X	X
0.045 - 0.054	0.05	.	.	.	X	.	X	.	X	X	X	X	X
0.055 - 0.064	0.06	.	X	X	.	.	X	.	X	X	X	X	X
0.065 - 0.074	0.07	.	X	X	.	.	X	.	X	X	X	X	X
0.075 - 0.084	0.08	.	X	X	.	.	X	X	X	X	X	X	X
0.085 - 0.094	0.09	.	X	X	.	.	X	X	X	X	X	X	X
0.095 - 0.104	0.10	.	.	.	.	.	X	X	X	X	X	X	X
0.105 - 0.114	0.11	.	.	.	.	.	X	X	X	X	X	X	X
0.115 - 0.124	0.12	.	.	.	.	.	X	X	X	X	X	X	X
0.125 - 0.134	0.13	.	.	.	.	.	X	X	X	X	X	X	X
0.135 - 0.144	0.14	.	.	.	.	.	X	X	X	X	X	X	X
0.145 - 0.154	0.15	.	.	.	.	.	.	.	.	.	X	.	.
0.155 - 0.164	0.16	.	.	.	.	.	.	.	.	.	X	.	.
0.165 - 0.174	0.17	.	.	.	.	.	.	.	.	.	X	.	.
0.175 - 0.184	0.18	.	.	.	.	.	.	.	.	.	X	.	.

The above cast iron samples can be ordered with your choice of Magnesium. Examples:  
 to order CTIF 6736 with Mg 0.035 - 0.044 then order as part number CTIF 6736 0.04  
 to order CTIF 8018 with 0.08 % Mg, order as part number CTIF 8018 0.08

**CRM WHITE IRON** analysis listed in mass %

Number	C	Mn	P	S	Si	Cu	Ni	Cr	Co	Mo	Nb	Ti	V
<b>BS WI-2</b>	3.61	0.80	0.22	0.056	0.52	0.0124	0.254	0.229	0.0118	0.219	0.128	0.089	0.215
SRM CII45	2.92	0.187	0.215	0.191	0.271	0.46	0.62	0.63	0.058	0.48	.	0.012	0.112
VS Chg 8/6	(2.7)	1.51	0.040	0.013	3.93	.	.	(0.2)	.	.	.	.	(0.3)
VS Chg 10/6	(2.7)	0.86	0.103	0.0072	2.86	.	.	(0.2)	.	.	.	.	(0.3)
VS Chg 11/6	(2.7)	0.312	0.23	0.039	1.79	.	.	(0.2)	.	.	.	.	(0.3)
VS Chg 9/6	(2.7)	0.155	0.38	0.071	0.80	.	.	(0.2)	.	.	.	.	(0.3)
<b>BS WI-1</b>	1.75	0.24	0.051	0.114	1.90	0.027	0.053	0.048	0.0074	0.0103	0.027	0.020	0.008

**17025**

**17025**

Number	Al	As	B	Bi	Ca	Fe	Mg	Pb	Sb	Sn	W	Zr	Units
<b>BS WI-2</b>	0.0192	0.0016	0.0008	.	(0.00013)	[93.6]	(0.0002)	0.013	0.023	0.0042	0.023	0.0045	~35 mm Ø x ~30 mm
SRM CII45	(0.04)	(0.03)	(0.02)	(<0.01)	.	.	.	0.0012	(0.04)	(0.10)	.	(0.002)	32 mm Ø x 19 mm
VS Chg 8/6	.	(0.003-0.006)	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
VS Chg 10/6	.	(0.003-0.006)	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
VS Chg 11/6	.	(0.003-0.006)	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
VS Chg 9/6	.	(0.003-0.006)	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
<b>BS WI-1</b>	0.075	0.0067	0.0032	.	0.0005	[95.5]	0.0009	0.115	.	0.0081	0.185	0.0034	~35 mm Ø x ~30 mm





## CAST IRON WITH C &lt; 2.75%

# = Class, 1 = CRM and 2 = RM

analysis in mass % except \* = mg/kg

#	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Co	Mo	Nb	Sn	Ti	V	Zn
1	VS ChL4/1	2.69	1.37	0.054	0.027	1.99	0.161	0.725	0.92	.	0.017	0.116	.	.	0.11	0.258	.
1	SRM C1291	2.67	1.14	0.028	0.032	1.34	0.26	4.34	2.78	.	.	0.32	.	.	.	0.031	.
1	VS ChG 6/9	2.65	0.83	0.54	0.027	0.53	0.34	.	0.241	.	.	.	.	.	0.028	0.130	.
1	DSZU CH01	2.61	0.258	0.012	0.0045	1.95	0.097	0.072	0.88	0.079	(0.06)	0.070	(0.010)	(0.05)	0.132	0.134	.
1	Y 2863-40	2.59	1.56	0.059	0.019	1.60	0.98	1.61	1.47	.	.	0.229	.	.	0.18	0.325	.
1	11X C8V	2.60	0.394	1.00	0.204	1.643	0.310	0.275	0.148	0.086	0.126	0.148	0.0217	0.1063	0.235	0.064	0.0068
1	SCRM 661/4	2.56	0.30	0.84	0.068	2.96	.	.	(1)	.	.	.	.	.	.	.	.
1	SCRM 656/9	2.537	0.820	0.060	0.108	2.504	.	.	.	.	.	.	.	.	.	.	.
1	11X C7N	2.51	1.942	0.0266	0.0101	0.829	0.075	0.0303	0.507	0.0127	0.0335	0.071	0.051	0.0114	0.022	0.036	0.0226
1	Y 2863-2	2.50	1.83	0.069	0.026	3.14	0.020	3.73	0.136	.	.	0.096	.	.	0.066	0.61	.
1	VS ChG 37	2.49	0.92	0.038	0.046	2.03	0.512	0.90	0.82	.	.	0.55	.	.	0.092	0.227	.
1	SCRM 673/1	2.455	0.123	0.317	0.0112	1.702	.	0.103	0.0423	0.0287	0.053	0.0092	.	0.0206	0.0718	0.052	.
1	CZ 20034 11b	2.44	0.382	0.271	0.140	3.67	0.130	0.082	1.178	0.067	0.005	1.144	.	0.074	0.041	0.182	.
1	VS ChG 38	2.43	0.302	0.386	0.084	2.30	1.20	0.162	1.98	.	.	0.046	.	.	0.105	0.119	.
1	CZ 02033 5b	2.42	0.812	0.033	0.073	1.32	0.031	0.188	0.061	0.062	.	0.089	.	.	0.007	0.005	.
1	VS ChL2/1	2.38	1.03	0.054	0.023	0.55	0.97	0.114	0.077	.	0.013	0.012	.	.	0.009	0.050	.
1	CZ 20034 11a	2.37	0.343	0.271	0.163	3.31	0.086	0.084	1.219	0.046	0.005	1.130	.	0.070	0.028	0.184	.
1	SCRM 652/4	2.34	1.19	0.071	0.129	0.878	.	.	(1)	.	.	.	.	.	.	.	.
1	DSZU CH07	2.33	1.36	0.090	0.064	3.01	0.35	0.403	0.34	0.036	.	0.66	(0.08)	(0.07)	0.150	0.52	.
1	CZ 02033 5a	2.30	0.804	0.035	0.100	1.26	0.014	0.096	0.054	0.060	.	0.100	.	.	0.008	0.005	.
1	CZ 02033 5c	2.30	0.704	0.027	0.091	1.40	0.013	0.188	0.085	0.103	0.013	0.104	.	(0.002)	0.008	0.054	.
1	SCRM 675	1.92	1.81	0.045	0.072	1.29	0.012	0.210	0.080	0.007	0.023	0.034	.	0.0062	0.007	0.178	0.0006
1	SCRM 655/4	1.90	0.44	0.180	0.076	2.110	.	.	(1)	.	.	.	.	.	.	.	.
1	CKD 242A	1.84	0.060	0.039	0.036	3.06	0.055	0.039	0.029	0.036	0.002	1.13	0.013	0.010	0.19	0.37	(0.00)
1	Y 2863-1	1.78	2.41	0.021	0.009	3.62	0.022	4.77	0.031	.	.	0.038	0.0052	.	0.068	1.13	.

#	Number	C	Mn	P	S	Si	Cu	Ni	Cr	Al	Co	Mo	Nb	Sn	Ti	V	Zn
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Number	As	B	Bi	Ca*	Ce	Mg	N	Pb	Sb	Se	Te	W	Zr	Units
VS ChL4/1	.	.	.	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
SRM C1291	.	.	.	.	.	.	.	.	.	.	.	.	.	32 mm Ø x 19 mm
VS ChG 6/9	(0.003)	.	.	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
DSZU CH01	.	(0.03)	.	(10)	.	(0.0005)	.	.	.	.	.	(0.02)	.	~30 mm x ~35 mm
VS ChG 40	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~40 mm
11X C8V	0.0812	0.0366	0.014	.	.	.	0.0065	0.0052	0.069	0.0210	0.0049	0.0258	0.0064	~40 mm Ø x ~15 mm
SCRM 661/4	.	.	.	.	.	.	.	.	.	.	.	.	.	48 mm x 42 mm x 12 mm
SCRM 656/9	.	.	.	.	.	.	.	.	.	.	.	.	.	48 mm x 42 mm x 12 mm
11X C7N	0.0159	0.0097	0.0137	.	.	.	0.025	0.0106	0.025	.	.	0.066	(0.003)	40 mm Ø x 15 mm
Y 2863-2	.	0.0025	.	.	.	.	.	.	.	.	.	.	.	30 mm Ø x 30 mm
VS ChG 37	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~40 mm
SCRM 673/1	.	.	.	.	.	.	.	.	.	.	.	.	.	40 mm x 37 mm x 10 mm
CZ 20034 11b	0.005	0.0032	0.007	.	.	.	.	0.007	0.011	.	.	(0.005)	0.007	40 mm Ø x 18 mm
VS ChG 38	.	.	.	.	.	.	.	.	.	.	.	.	.	~40 mm Ø x ~40 mm
CZ 02033 5b	.	0.014	0.020	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 18 mm
VS ChL2/1	.	.	.	.	.	.	.	.	.	.	.	.	.	~38 mm Ø x ~38 mm
CZ 20034 11a	0.005	0.0018	0.011	.	.	.	.	0.017	0.013	.	.	(0.005)	0.007	40 mm Ø x 18 mm
SCRM 652/4	.	.	.	.	.	.	.	.	.	.	.	.	.	48 mm x 42 mm x 12 mm
DSZU CH07	.	(0.13)	.	(10)	.	(0.01)	.	.	.	.	.	.	.	~35 mm x ~35 mm
CZ 02033 5a	.	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 18 mm
CZ 02033 5c	.	0.0078	0.007	.	.	.	.	.	.	(0.002)	(0.010)	.	(0.009)	40 mm Ø x 18 mm
SCRM 675	0.035	.	.	.	.	.	.	.	.	.	.	.	.	40 mm x 37 mm x 10 mm
SCRM 655/4	.	.	.	.	.	.	.	.	.	.	.	.	.	48 mm x 42 mm x 12 mm
CKD 242A	0.015	0.008	(0.015)	.	(0.00)	0.000	.	(0.012)	0.007	.	(0.08)	(0.007)	(0.000)	37mm x 37mm x 18 or 20mm
Y 2863-1	.	0.0024	.	.	.	.	.	.	.	.	.	.	.	30 mm Ø x 30 mm

Number	As	B	Bi	Ca*	Ce	Mg	N	Pb	Sb	Se	Te	W	Zr	Units
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## RM CAST IRON MUSHROOMS CONTINUED ON THE NEXT PAGE

typical analysis

each unit is one pair of 43 mm Ø x 5 mm mushroom discs

Number	C	Si	Mn	P	S	Cu	Ni	Cr	Al	Co	Mo	Sn	Ti	V	W
CTIF F019	4.04	1.05	1.05	0.032	0.057	.	.	.	.	.	.	.	.	.	.
CTIF F012	3.71	1.86	0.44	0.038	0.004	0.77	.	.	0.008	.	.	0.011	.	.	.
CTIF F08	3.6	1.04	0.37	0.107	0.021	0.215	0.30	0.30	.	.	0.005	0.05	0.055	0.014	.
CTIF FCR7	3.59	1.07	0.365	0.099	0.0427	0.704	0.947	33.65	.	.	2.62	.	.	.	.
CTIF F06	3.49	0.55	0.715	0.87	0.106	0.120	0.128	0.45	.	.	0.202	0.039	0.080	0.110	.
CTIF F010	3.5	0.67	1.05	0.20	0.101	0.114	0.118	0.38	.	.	0.20	.	0.1	0.08	.
CTIF NH3	3.47	0.85	0.175	0.36	0.024	0.031	2.53	1.76	.	.	0.73	.	.	.	.
CTIF F011	3.45	1.57	0.685	0.052	0.103	0.211	0.235	0.34	.	(0.013)	0.225	0.066	0.078	0.113	.
CTIF F018	3.43	1.24	0.590	1.34	0.136	0.049	0.140	0.170	.	.	0.179	0.046	0.057	0.102	.
CTIF NH7-1	3.43	0.95	0.63	0.035	0.022	0.105	5.53	9.02	.	.	.	.	.	.	.
CTIF FCR5	3.43	0.35	0.62	0.052	0.0175	1.02	2.69	28.5	.	.	3.27	.	.	.	.
CTIF FT2-1	3.39	1.415	0.78	0.045	0.095	0.01	0.070	0.030	.	.	.	.	0.100	0.405	.
CTIF NiMo1	3.22	2.585	0.200	0.0590	(0.0030)	0.376	2.165	0.0353	.	0.0205	0.457	0.0020	0.0190	0.0169	.
CTIF FL7	3.22	2.550	0.100	1.34	0.048	0.351	0.232	0.043	.	.	0.335	0.0291	0.0525	0.0796	.
CTIF FT3	3.2	1.55	0.345	0.063	0.051	0.015	0.092	0.685	.	.	.	.	0.2	0.016	.
CTIF NH7-2	3.2	1.20	0.91	0.034	0.0120	0.108	5.53	8.87	.	.	.	.	.	.	.
CTIF F05	3.2	0.7	0.2	1.30	0.027	0.12	0.172	0.3	.	.	0.41	0.109	0.04	0.14	.
CTIF NH9	3.13	1.24	0.65	0.087	0.029	0.203	4.11	11.70	.	.	0.059	.	.	.	.
CTIF NR Cu1	3.12	1.465	0.172	0.090	0.99	4.95	18.02	0.994	(0.095)	.	.	.	.	.	.
CTIF FL6	3.1	1.4	0.6	0.012	0.18	0.079	1.03	0.167	.	0.028	0.50	0.005	0.15	0.033	.
CTIF FL10	3.1	1.3	0.85	0.323	0.066	0.104	0.10	(0.07)	(0.03)	.	0.0335	0.028	0.045	0.048	(0.02)
CTIF FFA 1	3.090	0.0300	0.100	0.0022	0.0009	0.0622	0.0450	0.0710	.	0.0097	0.0109	.	0.0010	0.0010	.
CTIF NR 8S	3.05	1.41	4.39	0.124	0.071	14.20	0.191	.	.	.	.	.	.	.	.
CTIF F017	3.01	2.48	0.475	0.470	0.168	(0.006)	0.021	(0.016)	.	0.032	.	0.024	0.032	0.018	.
CTIF FAL 1	3.0	1.0	0.2	0.04	<0.001	0.2	0.06	0.04	2.1	.	0.015	.	0.01	.	.
CTIF NR 3L	2.99	3.05	0.72	0.088	0.052	0.26	21.58	2.97	.	.	.	.	.	.	.
CTIF NH1	2.98	1.35	0.90	0.060	0.105	1.99	1.38	0.83	.	.	1.45	.	.	.	.
CTIF NH8	2.98	0.80	0.57	0.052	0.076	0.065	8.16	5.03	.	.	0.125	.	.	.	.
CTIF NR 3S	2.92	2.91	0.77	0.024	0.025	0.33	24.63	3.05	.	.	.	.	.	.	.
CTIF FT1	2.9	2.12	0.71	0.12	0.025	0.012	0.11	0.057	.	.	.	0.067	0.19	0.525	.

Number	C	Si	Mn	P	S	Cu	Ni	Cr	Al	Co	Mo	Sn	Ti	V	W
CTIF NR 8L	2.89	1.70	5.19	0.054	0.030	0.075	13.33	0.165	.	.	.	.	.	.	.
CTIF NH4	2.84	0.49	0.28	0.12	0.022	0.09	3.60	2.46	.	.	0.30	.	.	.	.
CTIF F04	2.81	1.51	0.64	0.58	0.009	0.31	0.32	0.17	.	.	0.095	0.013	0.075	0.049	.
CTIF FCR2	2.86	1.07	0.740	0.137	0.055	0.135	1.87	11.8	.	.	3.88	.	.	.	.
CTIF FL5	2.8	2.3	0.4	0.02	(0.005)	0.5	0.05	0.35	.	0.010	0.01	0.07	0.01	0.01	.
CTIF FCR Ni3	2.74	0.69	0.47	0.036	0.011	.	11.05	31.65	.	.	.	.	.	.	.
CTIF NH6	2.70	2.28	0.355	0.066	0.036	0.115	7.06	6.60	.	.	0.11	.	.	.	.
CTIF F09	2.7	1.5	0.7	0.02	0.015	0.31	0.355	0.18	.	.	0.13	0.144	0.017	0.022	.
CTIF FL4	2.6	2.91	0.5	0.288	0.137	0.0168	0.061	0.45	.	.	0.090	0.011	0.0296	0.116	.
CTIF NR 1S	2.58	3.02	1.54	0.19	0.0015	0.11	20.60	2.00	.	.	.	.	.	.	.
CTIF NR 1L	2.50	3.00	1.34	0.125	0.10	0.49	25.87	1.74	.	.	.	.	.	.	.
CTIF NH2	2.50	1.81	1.04	0.047	0.058	1.02	1.78	1.26	.	.	1.01	.	.	.	.
CTIF NR Cu2	2.48	2.07	1.078	0.113	0.049	6.50	15.85	2.05	.	.	.	.	.	.	.
CTIF NR 4S	2.47	4.87	1.71	0.145	0.066	0.63	18.30	1.50	.	.	.	.	.	.	.
CTIF FCR4	2.47	1.40	2.05	0.097	0.066	1.32	0.571	24.2	.	.	2.16	.	.	.	.
CTIF FCR1	2.46	0.48	0.63	0.019	0.007	0.031	1.30	18.71	.	.	1.41	.	.	.	.
CTIF F07	2.45	0.675	0.70	0.84	0.085	0.125	0.15	0.455	.	.	0.26	.	0.065	0.13	.
CTIF NR 4L	2.41	5.89	1.495	0.155	0.010	0.758	15.90	1.403	.	.	.	.	.	.	.
CTIF NR 2S	2.32	1.43	0.530	0.062	0.0210	0.210	36.3	0.51	.	.	.	.	.	.	.
CTIF NH5	2.31	0.31	0.24	0.115	0.04	0.035	4.90	2.85	.	.	0.017	.	.	.	.
CTIF FL3	2.3	2.1	0.27	0.729	(0.013)	0.102	0.553	0.107	.	.	0.106	0.111	0.05	0.049	.
CTIF NR 4G	2.24	5.60	1.72	0.11	(0.002)	0.64	21.30	1.40	.	.	.	.	.	.	.
CTIF NR 2G	2.25	1.47	0.380	0.0476	(0.003)	0.232	36.34	0.395	.	.	.	.	.	.	.
CTIF FL2	2.18	3.61	0.0400	0.049	0.082	0.0497	0.0238	0.440	(0.006)	0.0263	(0.004)	0.140	0.0750	0.201	.
CTIF FL1	2.1	3.2	0.80	0.118	0.0765	0.0195	0.245	0.06	.	(0.022)	0.038	0.305	0.020	0.015	.
CTIF FCR Ni2	2.02	1.50	0.61	0.185	0.024	.	13.05	29.00	.	.	.	.	.	.	.
CTIF NR Cu3	1.94	3.12	0.60	0.046	0.016	8.05	13.3	3.50	.	.	.	.	.	.	.
CTIF NR 6S	1.82	2.44	0.99	0.019	0.031	0.03	30.75	1.06	.	.	.	.	.	.	.
CTIF NR 5L	1.77	2.99	1.207	0.037	0.083	0.48	33.89	0.27	.	.	.	.	.	.	.
CTIF NR 6L	1.76	2.07	0.70	0.031	0.063	0.020	30.37	3.49	.	.	.	.	.	.	.
CTIF NR 5S	1.67	1.97	1.23	0.035	.	0.50	27.05	0.24	.	.	.	.	.	.	.
CTIF FCR6	1.44	0.76	1.47	0.201	0.086	0.480	0.188	30.84	.	.	0.455	.	.	.	.
CTIF FCR Ni1	1.27	1.63	0.71	0.41	0.06	0.02	16.50	26.20	.	.	.	.	.	.	.

Number	C	Si	Mn	P	S	Cu	Ni	Cr	Al	Co	Mo	Sn	Ti	V	W
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## CAST IRON MUSHROOMS

## CONTINUED FROM THE PREVIOUS PAGE

Number	As	B	Bs	Bi	Ce	N	Nb	Pb	Sb	Te	Zn
CTIF F019	.	.	.	.	.	.	.	.	.	0.0005	.
CTIF F012	.	.	.	.	.	.	.	.	.	.	.
CTIF F08	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR7	.	.	.	.	.	.	.	.	.	.	.
CTIF F06	.	.	.	.	.	.	.	.	.	.	.
CTIF F010	.	.	.	.	.	.	.	.	.	.	.
CTIF NH3	.	.	.	.	.	.	.	.	.	.	.
CTIF F011	.	.	.	.	.	.	.	.	.	.	.
CTIF F018	.	.	.	.	.	0.0040	.	.	.	.	.
CTIF NH7-1	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR5	.	.	.	.	.	.	.	.	.	.	.
CTIF FT2-1	.	.	.	.	.	.	.	.	.	.	.
CTIF NiMo1	.	.	.	.	.	.	.	.	.	.	.
CTIF FL7	(0.0266)	(0.010)	.	(0.010)	.	0.0035	.	.	.	.	.
CTIF FT3	.	.	.	.	.	.	.	.	.	.	.
CTIF NH7-2	.	.	.	.	.	.	.	.	.	.	.
CTIF F05	.	.	.	.	.	.	.	.	.	.	.
CTIF NH9	.	.	.	.	.	.	.	.	.	.	.
CTIF NR Cu1	.	.	.	.	.	.	.	.	.	.	.
CTIF FL6	.	0.008	.	.	.	.	.	.	.	.	.
CTIF FL10	(0.022)	.	(0.012)	(0.004)	.	.	(0.018)	(0.002)	(0.032)	(0.001)	(0.029)
CTIF FFA 1	0.0109	.	.	.	.	0.0125	.	.	.	.	.
CTIF NR 8S	.	.	.	.	.	.	.	.	.	.	.
CTIF F017	.	.	.	.	.	.	.	.	.	.	.
CTIF FAL 1	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 3L	.	.	.	.	.	.	.	.	.	.	.
CTIF NH1	.	.	.	.	.	.	.	.	.	.	.
CTIF NH8	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 3S	.	.	.	.	.	.	.	.	.	.	.
CTIF FT1	.	.	.	.	.	.	.	.	.	.	.

Number	As	B	Bs	Bi	Ce	N	Nb	Pb	Sb	Te	Zn
CTIF NR 8L	.	.	.	.	.	.	.	.	.	.	.
CTIF NH4	.	.	.	.	.	.	.	.	.	.	.
CTIF F04	.	.	.	.	.	.	.	.	.	.	last of stock
CTIF FCR2	.	.	.	.	.	.	.	.	.	.	.
CTIF FL5	.	(0.002)	.	(0.0005)	.	.	.	.	.	.	.
CTIF FCR Ni3	.	.	.	.	.	.	.	.	.	.	.
CTIF NH6	.	.	.	.	.	.	.	.	.	.	.
CTIF F09	.	.	.	.	.	.	.	.	.	.	.
CTIF FL4	(0.05)	.	.	(0.003)	.	0.007	.	.	.	.	.
CTIF NR 1S	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 1L	.	.	.	.	.	.	.	.	.	.	.
CTIF NH2	.	.	.	.	.	.	.	.	.	.	.
CTIF NR Cu2	.	.	.	.	.	(0.0079)	.	.	.	.	.
CTIF NR 4S	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR4	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR1	.	.	.	.	.	.	.	.	.	.	.
CTIF F07	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 4L	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 2S	.	.	.	.	.	.	.	.	.	.	.
CTIF NH5	.	.	.	.	.	.	.	.	.	.	.
CTIF FL3	.	.	.	.	.	0.008	.	.	.	.	.
CTIF NR 4G	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 2G	.	.	.	.	.	.	0.27	.	.	.	.
CTIF FL2	.	.	.	(0.0135)	.	.	.	.	.	.	.
CTIF FL1	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR Ni2	.	.	.	.	.	.	.	.	.	.	.
CTIF NR Cu3	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 6S	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 5L	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 6L	.	.	.	.	.	.	.	.	.	.	.
CTIF NR 5S	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR6	.	.	.	.	.	.	.	.	.	.	.
CTIF FCR Nil	.	.	.	.	.	.	.	.	.	.	.

Number	As	B	Bs	Bi	Ce	N	Nb	Pb	Sb	Te	Zn
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ALLOY	ISO?	NUMBER	ALLOY	ISO?	NUMBER	ALLOY	ISO?	NUMBER
1.0812		ECRM 191-2D	15-5PH		BS 9622	310		CZ SL-3A
1.2344		ECRM 271-1D	15-5PH		ECRM 273-1D	310		IARM 4E
1.2367		HRT FE2012-H	15-5PH		IARM 22C	310		IARM 4F
1.4435, 1.4436		JK 27B	17-4PH		13X PH2	310		IARM 4G
1.4765		ECRM 299-1D	17-4PH		13X PH17400	310		SS 464/1
1.5415		HRT FE2012-N	17-4PH		BS 17-4PHA	3115		BS XCCT
1.6587		HRT FE2013-N	17-4PH		BS 17-4PHB	314		IMZ 165
1.7149 20MnCrS5		ECRM 187-2D	17-4PH		BS 17-4PHC	314		IMZ 166A
1.7160		ECRM 194-1D	17-4PH		SRM C2400	316	17025	BS 316C
1.8550		ECRM 129-3D	17-7PH		13X PH17700	316		IARM 5H
1.8519		HRT FE2010-N	17-7PH 25(preceded 17025)		BS 192	316		IARM 5i
1.8928		ECRM 194-2D	17-7PH 25(preceded 17025)		BS 192A	316		NILAB 500HAD
1005	17025	BS LC-6	17-7PH		IARM 152C	316		SRM 1155A
1005		BS 1005	17-7PH		IARM Fe177PH-18	316 H		CT 316
1005		ECRM 064-2D	182FM		BS 150	316 H		IARM 339A
1005		RM Fe 1/5	18Cr2Ni12Mn		CT ISO035A	316 L		13X 31603
1005		SRM 1765	201		BS 191	316 L	17025	BS 316D
1005		SRM 1766	201		SRM 1297	316 L	17025	BS 316E
1005		SS 111/1	20Cb3		BS 187A	316 L		CZ SL-2A
1006		BS XCCS-1	20Cb3		CT 20 Cb-3	316 L		IARM Fe316L-18
1008		ECRM 057-2D	20MoCr4		ECRM 197-1D	316 L		IARM 163E
1009		BS 1009	2101		IARM 292A	316 L		SS 466/2
1009		IMZ 71	21Cr6Ni9Mn		CT ISO129A	316 Ti		ECRM 284-2D
100C6		IRSID 1747	2205	17025	BS 2205	317 L		BS 317L
1010		IMZ 111	2205		IARM 212D	317 L	25(pre-17025)	BS 9941
1010		IRSID 1665	2205		IARM Fe2205-18	317 L	25(pre-17025)	BS 9942
1011		IMZ 73	2304		IARM 317A	317 L		IARM 153C
1016	17025	BS 1016	2507		IARM 301B	318	17025	BS 2205
1017		IMZ 112	253 MA	25(pre-17025)	BS 253	321		13X 32100
1017		IRSID 1664	253 MA		IARM 316A	321	17025	BS 85D
1018		12X 10180B	254 SMO		13X 31254	321		BS 321C
1018		12X 10180C	254 SMO		IARM 302B	321		BS 321D
1018	17025	BS 1018	254 SMO		NILAB 501HAD	321		IARM 6i
1018	17025	BS 2931B	255, Duplex		IARM 239B	321		IARM 6J
1018		ECRM 087-1D	255, Duplex		IARM 239C	321		SRM 1171
1018		IARM 28K	300M		12X 44220	321		SS 465/1
1020	17025	BS 1020	300M	17025	BS 300	321 - Ti		IMZ 152
1026	17025	BS 1026	300M		IARM 340A	32750		13X NSAL3
1026		IARM 359A	301		IARM 289A	330		IARM 7C
1030	17025	BS 1030	301		IRSID 1819	347		13X 34700
1030		IARM 209D	302		IARM 241D	347		BS 347A
1033		IRSID 1663	302 HQ		IARM 234C	347		BS 347B
1035	17025	BS 1035	303		13X 30300	347		IARM 8G
1035		IRSID 1645	303	17025	BS 303	347		IARM 8H
1035		IARM 360A	303		CT 303	347		IARM 8i
1039		IRSID 1637	303		CZ SP-1A	347 H		BS 87F
1040		12X 10400	303		IARM Fe303-18	348		SRM 1172
1040	17025	BS 3941	303 Se		IARM 253A	355	17025	BS 355
1040		IARM 210D	303 Se		IARM 253B	355		IARM 335A
1040		IRSID 1657	304		IARM 2H	35MV7		IRSID 1750
1042		IRSID 1656	304 H		13X NSB1	405		SRM 1295
1042		NM EN-8	304 H + Ca	17025	BS CA304-4	409 + Cr		NCS HS20743
1043		IRSID 1652	304 H		CT 304	410	25(pre-17025)	BS 0021
1045		BS 56E	304 H		IARM Fe304H-18	410, F6NM	25(pre-17025)	BS 0022
1045	17025	BS 56H	304 H		SS 468/1	410	17025	BS 410C
1045		IARM 200D	304 L	17025	BS 304	410		CT 410
1045		IPT 503	304 L	17025	BS 304A	410		IARM Fe410-18
1050		IARM 254A	304 L	17025	BS 304B	410 + Mo		ECRM 296-1D
1055		NM 3405.01	304 L		BS SS3951	410 + Mo		IMZ 161
1060		IARM 373A	304 L		IARM 162D	410 H		13X 41001
1069		ECRM 059-2D	304 L		IARM Fe304L-18	4130	17025	BS 4130
1078		ECRM 056-2D	304 L		ECRM 287-1D	4130		IARM 143F
1078		SRM 1224	304 L		ECRM 292-1D	4130		SRM 1225
1090		SS 602/2	304 L		IARM 162C	4130 H		IPT 501
1095		SRM 1227	304 L		SS 463/1	4140		12X 41400
1117 25(preceded 17025)		BS 3993	305		CT 305	4140	25(pre-17025)	BS 1962
1117		BS 65C	305		CT X52353	4140		IARM 30H
1117		IARM 29E	305		ECRM 297-1D	4140		IARM 30J
1118		IARM 307A	308		DSZU C017	4140 Bi		BS 4140A
1140 P		BS 52D	309		13X 30908	4140 Bi		BS 4140B
1141		BS 66B	309		BS 82D	41L40MOD	17025	BS 70B
1141		IARM 348A	309		BS 82E	41L40MOD		BS 70C
1144	17025	BS 1144	309		IARM 3E	4150 Bi & S		BS 4150MOD
1144	17025	BS 1144A	310		13X 31008	4150 S	17025	BS 4150MOD-A
1144		IARM 199C	310		BS 83G	4150 S	17025	BS 42
11L17	17025	BS 75F	310	25(pre-17025)	BS 9841	4150 S		BS 42A
11L17	17025	BS 75G	310	25(pre-17025)	BS 9842	416		BS 90F
1215	17025	BS 66L				416	17025	BS 416
1215		IARM 206B				416		CT 416
12L14	17025	BS 74C				416		IARM 10D
12L14		IARM 183C				416		SRM 1223
12Mn18Cr		BS 193				416 H		13X 41600
1345		BS XCCV				416 Se		BS 151
13-8PH		13X PH13800				418		IARM Fe418-18
13-8PH		BS 184A				41CAD7		IRSID 1749
13-8PH		CT X92834				41L40	17025	BS 70B
1429		ECRM 058-2D				41L50	17025	BS 72B
1513		IMZ 76				42		CT ISO138A
1526 MOD		SRM 1269				42		CT ISO139A
1541		IARM 349A				420		BS SS4951
1541		IPT 504				420		BS SS4952
1541		IRSID 1648				420		ECRM 272-1D
1544		IRSID 1644				420		IARM 154B
15-5PH		BS 185A				420		IARM 154C
15-5PH		BS 9621				420		SS 469

Please use the Adobe Acrobat "search" function to find the complete chemistry of these samples listed within this catalog.

ALLOY	ISO?	NUMBER	ALLOY	ISO?	NUMBER	ALLOY	ISO?	NUMBER
420 F		BS 152	Aermet 100		CT ISO045A	High Perm		CT ISO136A
420 F S		IARM 352A	Aermet 100		IARM 242A	High Perm 49		CT ISO141A
422		13X 42200	AL6XN	17025	BS 189A	HSLA 100		SRM 1271
422	17025	BS 422	AL6XN		IARM 157D	HY 130		SRM 1226
422		IARM 205D	C-.5Mo		BS 3952	HY 80		SRM 1286
430	17025	BS 430	C-.5Mo		IARM 229B	Hy-Tuff		IARM 342A
430		IARM 11D	C-250		IARM 308A	Invar		14X 93603
430		NCS HS20742	C-350		IARM 309A	Invar-36 + Se		BS 186A
430 F		BS 153	CA6NM		HRT FE2009-H	Invar-36 + Se		IARM 24B
430 F		BS 154	CA6NM		IARM 327A	Invar 42		14X 94100
430 F S		IARM 355A	CD3MN		ECRM 298-1D	ISO 898-1		SS 457/2
431	17025	BS 431	CD4MCU		BS CD4MCU	KOVAR	17025	BS 160A
431		BS 92B	CD4MCU		BS CD4MCU-A	KOVAR		IARM 98B
431		IARM 12C	CD6MN		VS LG58	L-2, 6150		BS 43A
431		HRT FE2010-H	CF-3		IRSID 1820	L-6	17025	BS 39B
431		SRM 1219	CLA1		IARM 164A	L-6		IARM 43B
4320		BS 3961	CLA11		IARM 180A	LDX2101		13X 32101
4330 MOD		BS 4330V	CLA5		IARM 168A	LF-2		BS 2931B
4330 MOD		IARM 330B	CLA9		IARM 172A	LF-2	17025	BS LF2B
4340	17025	BS 4340	CPM15V	17025	BS PM15	LF-2		SS 601/2
4340	17025	BS 4340A	Custom 450	25(pre-17025)	BS 9811	LF-3		BS LF3
4340		IARM 31G	Custom 450	25(pre-17025)	BS 9812	M-1		CT M1
440 C		13X 44004	Custom 450		CT 450	M-1		IARM 304A
440 C	17025	BS 93F	Custom 450		IARM 15B	M-10		CT M10
440 C		IARM 13D	Custom 455		BS SS1961	M-10		IARM 324A
440 F		BS 155	Custom 455		BS SS1962	M-152		13X 64152
440 F Se		BS 156	Custom 455		CT 455	M-152		IARM 291A
440 F Se		IARM 353A	Custom 455		IARM 16C	M-2		CT M2
446		BS 94C	Custom 465		CT ISO123A	M-2		IARM 44C
450		IARM 15C	Custom 630		CT 630	M-2		SRM 1157
455		13X 45500	D-2		BS 37G	M-35		IARM 320A
446		IARM 14C	D-2		CT D2	M-4		IARM 251A
4615		BS 3962	D-2		IARM 41D	M-42		SS 487/1
4620		BS 4620	D-3, D-4		ECRM 288-1D	M-47	17025	BS M-47
4620		BS 51F	D-6	17025	BS D-6	M-50	17025	BS M-50
4620		IARM 33D	D6-AC		IARM 299A	M-50		IARM 306B
465		13X 46500	Duplex		13X NSA9	M-7		CT M7
465		IARM 354A	Duplex	17025	BS 2205	Maraging 250		CT 250
4820	17025	BS 4820A	Duplex		IMZ 163A	Maraging 300		CT 300
4820		IARM 155F	Duplex		IMZ 164	MaragingA538C	25(pre17025)	BS 161A
5160		IMZ 116	E52100		BS 2952	Mold Steel	17025	BS PP20
6150		BS 4941	E52100		BS 53G	NIT 135M		IARM 305B
6150		IARM 34C	E52100		IARM 49D	Nitriding 135G		BS 68B
6418		BS 6418	E52100		IARM 49E	Nitriding 135G	17025	BS 68E
6418		BS 69B	E52100 Bi		BS 53MOD	Nitronic 40		13X NSC6
6526		BS 9-4-30	Elect./ Magnetic		SRM 1159	Nitronic 40		BS 190
709		CT X67975	Electrolytic		SRM 1265a	Nitronic 40		IARM 19C
800	17025	BS 800	F-11		BS 45A	Nitronic 50		BS 180A
8620		BS 8620A (XRF)	F-11	17025	BS 45B	Nitronic 50	17025	BS 180B
8620	17025	BS 8620E	F-11		IARM 35L	Nitronic 50		IARM 17D
8620		BS 8620F	F-2		CT X27081	Nitronic 50		IARM FeN50-18
8620		IPT 502	F-22	17025	BS 46B	Nitronic 60		13X 21800
86L20	25(preceeded 17025)	BS 73B	F-22	25(preceeded 17025)	BS 1982	Nitronic 60		BS 181A
86L20		BS 73C	F-22		IARM 36C	Nitronic 60	17025	BS 181B
86L20		IARM 182B	F-22		SRM 1270	Nitronic 60		IARM 18D
8630		BS 8630	F-22 + Cr		HRT FE2009-N	NMS 100		IARM 214A
8740	17025	BS 67C	F-5		BS 47A	NMS 140		IARM 295A
8740		IARM 252C	F-5		BS 47B	NMS J38		IARM 294A
8740		IARM 252D	F-5		IARM 37C	O-1	17025	BS 35D
8740		IARM 252E	F-51	17025	BS 2205	O-1		CT O1
8740		IARM 252F	F-9	17025	BS 48B	O-6	17025	BS 41
904L		13X NSA12	F-91	17025	BS 9905A	O-6	25(preceeded 17025)	BS 41A
904L		ECRM 295-1D	Ferallium 255	17025	BS 179B	O-6		IARM 45A
9310		BS 58C	Ferallium 255	17025	BS 179C	O-6		IARM 45B
9310		BS 58E	F6NM	25(preceded 17025)	BS 0022	P-6, HY100		BS 1972
9325	17025	BS 9325A	Greek Ascoloy		BS 183A	P-20		BS 55G
9-4-30		IARM 341A	Greek Ascoloy		IARM 20B	PP-20	17025	BS PP20
A-10		BS A-10	Greek Ascoloy		IARM 20C	Permendur 2V		IARM 326A
A-11		BS 10V	H-10		BS 49	RA330		BS 86F
A-11	17025	BS A-11	H-11		ECRM 276-2D	Railroad Steel		BS 54H
A-106 Gr B		SRM 1228	H-11		IARM 255A	S-1		BS 33D
A-193 B16		BS 4942	H-11		IARM 255B	S-1		BS 33E
A-193 B16	17025	BS 4942A	H-11		IMZ 173	S-1		IARM 46B
A-2		BS 36D	H-13	17025	BS H-13	S-5		BS 38C
A-2		CT A2	H-13		CT H13	S-5		IARM 47B
A-2		IARM 39B	H-13		IARM 42C	S-7		IARM 259A
A-2		IARM 39C	H-13		IMZ 174	S-7		SRM 1772
A-20		BS 187C	H-19	17025	BS H-19	S42027		13X 42027A
A-242		IPT 500	HC 250+V		SRM C1290	SA213-T22		IMZ 159
A-242 Mod		SRM C1285	High Perm		CT ISO124A	SA213-T22		IMZ 160
A-286		BS 188A				SA213-T22		IMZ 169
A-286	17025	BS 188B				SAE G2500		BS 20E
A-286		IARM 26D				STA 361		IARM 268B
A-286		SRM 1230				T-1		14X HS1
A-36	17025	BS 2931B				T-1	17025	BS 30D
A-36		IARM 213C				T-1		IARM 48C
A-36		IARM 213D				T-1		IARM FeT1-18
A-36		SRM 1767				T-4		IARM 281A
A-485-1		BS A485-1				T-15	17025	BS TS15
A-6		BS 40B				VMI2		IMZ 196
A-6		IARM 40B				W-5		14X 72305
A-6		IARM 40C				Z30C13		IRSID 1825
A706-60		IARM 380A				Zeron 100, Duplex		13X NSA8
A706-60		IARM 380B				Zeron 100, Duplex		IARM 319A
A706-80		IARM 381A				Zeron 100, Duplex		IARM FeZ100-18

Please use the Adobe Acrobat "search" function to find the complete chemistry of these samples listed within this catalog.

## CARBON STEEL SPECIFICATIONS

Number	C	Mn	P	S
1005	<0.06	<0.35	<0.03	<0.05
1006	<0.08	0.25-0.40	<0.03	<0.05
1008	<0.10	0.30-0.50	<0.03	<0.05
1009	<0.15	<0.60	<0.03	<0.05
1010	0.08-0.13	0.30-0.60	<0.03	<0.05
1011	0.09-0.14	0.60-0.90	<0.03	<0.05
1012	0.10-0.15	0.30-0.60	<0.03	<0.05
1013	0.11-0.16	0.50-0.80	<0.03	<0.05
1015	0.13-0.18	0.30-0.60	<0.03	<0.05
1016	0.13-0.18	0.60-0.90	<0.03	<0.05
1017	0.15-0.20	0.30-0.60	<0.03	<0.05
1018	0.15-0.20	0.60-0.90	<0.03	<0.05
1019	0.15-0.20	0.70-1.00	<0.03	<0.05
1020	0.18-0.23	0.30-0.60	<0.03	<0.05
1021	0.18-0.23	0.60-0.90	<0.03	<0.05
1022	0.18-0.23	0.70-1.00	<0.03	<0.05
1023	0.20-0.25	0.30-0.60	<0.03	<0.05
1025	0.22-0.28	0.30-0.60	<0.03	<0.05
1026	0.22-0.28	0.60-0.90	<0.03	<0.05
1029	0.25-0.31	0.60-0.90	<0.03	<0.05
1030	0.28-0.34	0.60-0.90	<0.03	<0.05
1033	0.29-0.36	0.70-1.00	<0.03	<0.05
1034	0.32-0.38	0.50-0.80	<0.03	<0.05
1035	0.32-0.38	0.60-0.90	<0.03	<0.05
1037	0.32-0.38	0.70-1.00	<0.03	<0.05
1038	0.35-0.42	0.60-0.90	<0.03	<0.05
1039	0.37-0.44	0.70-1.00	<0.03	<0.05
1040	0.37-0.44	0.60-0.90	<0.03	<0.05
1042	0.40-0.47	0.60-0.90	<0.03	<0.05
1043	0.40-0.47	0.70-1.00	<0.03	<0.05
1044	0.43-0.50	0.30-0.60	<0.03	<0.05
1045	0.43-0.50	0.60-0.90	<0.03	<0.05
1046	0.43-0.50	0.70-1.00	<0.03	<0.05
1049	0.46-0.53	0.60-0.90	<0.03	<0.05
1050	0.48-0.55	0.60-0.90	<0.03	<0.05
1053	0.48-0.55	0.70-1.00	<0.03	<0.05
1055	0.50-0.60	0.60-0.90	<0.03	<0.05
1059	0.55-0.65	0.50-0.80	<0.03	<0.05
1060	0.55-0.65	0.60-0.90	<0.03	<0.05
1064	0.60-0.70	0.50-0.80	<0.03	<0.05
1065	0.60-0.70	0.60-0.90	<0.03	<0.05
1069	0.65-0.75	0.40-0.70	<0.03	<0.05
1070	0.65-0.75	0.60-0.90	<0.03	<0.05
1074	0.70-0.80	0.50-0.80	<0.03	<0.05
1078	0.72-0.85	0.30-0.60	<0.03	<0.05
1080	0.75-0.88	0.60-0.90	<0.03	<0.05
1084	0.83-0.93	0.60-0.90	<0.03	<0.05
1085	0.80-0.94	0.70-1.00	<0.03	<0.05
1086	0.80-0.93	0.30-0.50	<0.03	<0.05
1090	0.85-0.98	0.60-0.90	<0.03	<0.05
1095	0.90-1.03	0.30-0.50	<0.03	<0.05
Number	C	Mn	P	S

## CARBON STEEL SPECIFICATIONS

Number	C	Mn	P	S	Si
1513	0.10-0.16	1.10-1.40	<0.03	<0.05	.
1522	0.18-0.24	1.10-1.40	<0.04	<0.05	.
1524	0.19-0.25	1.35-1.65	<0.04	<0.05	.
1526	0.22-0.29	1.10-1.40	<0.04	<0.05	.
1527	0.22-0.29	1.20-1.50	<0.04	<0.05	.
1533	0.30-0.37	1.10-1.40	<0.04	<0.05	.
1534	0.30-0.37	1.20-1.50	<0.04	<0.05	.
1541	0.36-0.44	1.35-1.65	<0.04	<0.05	.
1544	0.40-0.47	0.80-1.10	<0.04	<0.05	.
1545	0.43-0.50	0.80-1.10	<0.04	<0.05	.
1546	0.44-0.52	1.00-1.30	<0.04	<0.05	.
1548	0.44-0.52	1.10-1.40	<0.04	<0.05	.
1552	0.47-0.55	1.20-1.50	<0.04	<0.05	.
1553	0.48-0.55	0.80-1.10	<0.04	<0.05	.
1566	0.60-0.70	0.85-1.15	<0.04	<0.05	.
1570	0.65-0.75	0.80-1.10	<0.04	<0.05	.
1580	0.75-0.88	0.80-1.10	<0.04	<0.05	.
1590	0.85-0.98	0.80-1.10	<0.04	<0.05	.
LF2	<0.30	0.60-1.35	<0.035	<0.04	0.15-0.30

Number	C	Mn	P	S	Si
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## RESULFURIZED STEEL SPECIFICATIONS

Number	C	Mn	P	S
1108	0.08-0.13	0.50-0.80	<0.04	0.08-0.13
1109	0.08-0.13	0.60-0.90	<0.04	0.08-0.13
1110	0.08-0.13	0.30-0.60	<0.04	0.08-0.13
1116	0.14-0.20	1.10-1.40	<0.04	0.16-0.23
1117	0.14-0.20	1.00-1.30	<0.04	0.08-0.13
1118	0.14-0.20	1.30-1.60	<0.04	0.08-0.13
1119	0.14-0.20	1.00-1.30	<0.04	0.24-0.33
1123	0.20-0.27	1.20-1.50	<0.04	0.06-0.09
1132	0.27-0.34	1.35-1.65	<0.04	0.09-0.13
1137	0.32-0.39	1.35-1.65	<0.03	0.08-0.13
1139	0.35-0.43	1.35-1.65	<0.04	0.13-0.20
1140	0.37-0.44	0.70-1.00	<0.03	0.08-0.13
1141	0.37-0.45	1.35-1.65	<0.03	0.08-0.13
1144	0.40-0.48	1.35-1.65	<0.03	0.24-0.33
1145	0.41-0.49	0.70-1.00	<0.04	0.08-0.13
1146	0.42-0.49	0.70-1.00	<0.04	0.08-0.13
1151	0.48-0.55	0.70-1.00	<0.04	0.08-0.13
1152	0.48-0.55	0.70-1.00	<0.04	0.06-0.09
1211	<0.13	0.60-0.90	0.07-0.12	0.10-0.15
1212	<0.13	0.70-1.00	0.07-0.12	0.16-0.23
1213	<0.13	0.70-1.00	0.07-0.12	0.24-0.33
1215	<0.09	0.75-1.05	0.04-0.09	0.26-0.35

Number	C	Mn	P	S
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These are specifications,  
not samples for sale.

## LOW ALLOY STEEL SPECIFICATIONS

Number	C	Mn	P	S	Si	Ni	Cr	Mo	Pb	Other
1330	0.28-0.33	1.60-1.90	<0.035	<0.04	0.15-0.35	.	.	.	.	.
1335	0.33-0.38	1.60-1.90	<0.035	<0.04	0.15-0.35	.	.	.	.	.
1340	0.38-0.43	1.60-1.90	<0.035	<0.04	0.15-0.35	.	.	.	.	.
1345	0.43-0.48	1.60-1.90	<0.035	<0.04	0.15-0.35	.	.	.	.	.
3140	0.38-0.43	0.70-0.90	<0.04	<0.04	0.15-0.35	1.10-1.40	0.55-0.75	.	.	.
4023	0.20-0.25	0.70-0.90	<0.035	<0.04	0.15-0.35	.	.	0.20-0.30	.	.
4027	0.25-0.30	0.70-0.90	<0.035	<0.04	0.15-0.35	.	.	0.20-0.30	.	.
4028	0.25-0.30	0.70-0.90	<0.035	0.035-0.050	0.15-0.35	.	.	0.20-0.30	.	.
4037	0.35-0.40	0.70-0.90	<0.035	<0.04	0.15-0.35	.	.	0.20-0.30	.	.
4047	0.45-0.50	0.70-0.90	<0.035	<0.04	0.15-0.35	.	.	0.20-0.30	.	.
4118	0.18-0.23	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.40-0.60	0.08-0.15	.	.
4120	0.18-0.23	0.80-1.20	<0.035	<0.04	0.15-0.35	.	0.40-0.60	0.15-0.25	.	.
4121	0.18-0.23	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.45-0.65	0.15-0.25	.	.
4130	0.28-0.33	0.40-0.60	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4135	0.33-0.38	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4137	0.35-0.40	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4140	0.38-0.43	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
41L40	0.38-0.43	0.75-1.00	<0.035	0.02-0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	0.15-0.35	.
4142	0.40-0.45	0.45-0.65	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4145	0.43-0.48	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4147	0.45-0.50	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
4150	0.48-0.53	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	.	.
41L50	0.48-0.53	0.75-1.00	<0.035	0.02-0.04	0.15-0.35	.	0.80-1.10	0.15-0.25	0.15-0.35	.
4320	0.17-0.22	0.45-0.65	<0.035	<0.04	0.15-0.35	1.65-2.00	0.40-0.60	0.20-0.30	.	.
4340	0.38-0.43	0.60-0.80	<0.035	<0.04	0.15-0.35	1.65-2.00	0.70-0.90	0.20-0.30	.	.
4615	0.13-0.18	0.45-0.65	<0.035	<0.04	0.15-0.35	1.65-2.00	.	0.20-0.30	.	.
4617	0.15-0.20	0.45-0.65	<0.035	<0.04	0.15-0.35	1.65-2.00	.	0.20-0.30	.	.
4620	0.17-0.22	0.45-0.65	<0.035	<0.04	0.15-0.35	1.65-2.00	.	0.20-0.30	.	.
4715	0.13-0.18	0.70-0.90	<0.035	<0.04	0.15-0.35	0.70-1.00	0.45-0.65	0.45-0.65	.	.
4720	0.17-0.22	0.50-0.70	<0.035	<0.04	0.15-0.35	0.90-1.20	0.35-0.55	0.15-0.25	.	.
4815	0.13-0.18	0.40-0.60	<0.035	<0.04	0.15-0.35	3.25-3.75	.	0.20-0.30	.	.
4820	0.18-0.23	0.50-0.70	<0.035	<0.04	0.15-0.35	3.25-3.75	.	0.20-0.30	.	.
50B46	0.44-0.49	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.20-0.35	.	.	B: 0.0005-0.003
5120	0.17-0.22	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	.	.
51L20	0.17-0.22	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	0.15-0.35	.
5130	0.28-0.33	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.80-1.10	.	.	.
5132	0.30-0.35	0.60-0.80	<0.035	<0.04	0.15-0.35	.	0.75-1.00	.	.	.
5140	0.38-0.43	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	.	.
5150	0.48-0.53	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	.	.
5160	0.56-0.64	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	.	.
51B60	0.56-0.64	0.75-1.00	<0.035	<0.04	0.15-0.35	.	0.70-0.90	.	.	B: >0.0005
6150	0.48-0.53	0.70-0.90	<0.035	<0.04	0.15-0.35	.	0.80-1.10	.	.	V: >0.15
8615	0.13-0.18	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8617	0.15-0.20	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8620	0.18-0.23	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
86L20	0.18-0.21	0.70-0.90	<0.035	0.02-0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	0.15-0.35	.
8622	0.20-0.25	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8630	0.28-0.33	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8637	0.35-0.40	0.75-1.00	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8640	0.38-0.43	0.75-1.00	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8645	0.43-0.48	0.75-1.00	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.15-0.25	.	.
8720	0.18-0.23	0.70-0.90	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.20-0.30	.	.
8740	0.38-0.43	0.75-1.00	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.20-0.30	.	.
8822	0.20-0.25	0.75-1.00	<0.035	<0.04	0.15-0.35	0.40-0.70	0.40-0.60	0.30-0.40	.	.
9259	0.56-0.64	0.75-1.00	<0.035	<0.04	0.70-1.10	.	0.45-0.65	.	.	.
9260	0.56-0.64	0.75-1.00	<0.035	<0.04	1.80-2.20	.	.	.	.	.
E4340	0.38-0.43	0.65-0.85	<0.025	<0.025	0.15-0.35	1.65-2.00	0.70-0.90	0.20-0.30	.	.
E51100	0.98-1.10	0.25-0.45	<0.025	<0.025	0.15-0.35	.	0.90-1.15	.	.	.
E52100	0.98-1.10	0.25-0.45	<0.025	<0.025	0.15-0.35	.	1.30-1.60	.	.	.
E9310	0.08-0.13	0.45-0.65	<0.025	<0.025	0.15-0.35	3.00-3.50	1.00-1.40	0.08-0.15	.	.
F-11	0.10-0.20	0.30-0.80	<0.04	<0.04	0.50-1.00	.	1.00-1.50	0.44-0.65	.	.
F-22	<0.15	0.30-0.60	<0.03	<0.03	<0.50	.	2.00-2.50	0.90-1.10	.	.
F-5	<0.15	0.30-0.60	<0.03	<0.03	<0.50	.	4.00-6.00	0.45-0.65	.	.
F-9	<0.15	0.30-0.60	<0.03	<0.03	0.50-1.0	.	8.00-10.00	0.90-1.10	.	.
F-91	0.08-0.12	0.30-0.60	<0.02	<0.01	0.20-0.50	<0.40	8.00-9.50	0.85-1.05	.	Al: <0.04      N: 0.03-0.07
F-91	continued									Nb: 0.06-0.10      V: 0.18-0.25
LF2	<0.30	0.60-1.35	<0.035	<0.04	0.15-0.30	.	.	.	.	.
LF3	<0.20	<0.90	<0.035	<0.04	0.20-0.35	3.25-3.75	.	.	.	.
Number	C	Mn	P	S	Si	Ni	Cr	Mo	Pb	Other

These are specifications,  
not samples for sale.

## TOOL STEEL SPECIFICATIONS

\* notes optional chemistry

Number	C	Mn	P	S	Si	Ni	Cr	Co	Mo	V	W	Other
A-2	0.95-1.05	<1.00	<0.03	<0.03	<0.50	.	4.75-5.50	.	0.90-1.40	0.15-0.50	.	.
A-4	0.95-1.05	1.80-2.20	<0.03	<0.03	<0.50	.	0.90-2.20	.	0.90-1.40	.	.	.
A-6	0.65-0.75	1.80-2.50	<0.03	<0.03	<0.50	.	0.90-1.20	.	0.90-1.40	.	.	.
A-7	2.00-2.85	<0.80	<0.03	<0.03	<0.50	.	5.00-5.75	.	0.90-1.40	3.90-5.15	0.50-1.50	.
A-8	0.50-0.60	<0.50	<0.03	<0.03	0.75-1.10	.	4.75-5.50	.	1.15-1.65	.	1.00-1.50	.
A-9	0.45-0.55	<0.50	<0.03	<0.03	0.95-1.15	1.25-1.75	4.75-5.50	.	1.30-1.80	0.80-1.40	.	.
A-10	1.25-1.50	1.60-2.10	<0.03	<0.03	1.00-1.50	1.55-2.05	.	.	1.25-1.75	.	.	.
A-11	2.45	0.50	.	.	0.90	.	5.25	.	1.30	9.75	.	.
D-2	1.40-1.60	<0.60	<0.03	<0.03	<0.60	.	11.00-13.00	<1.00	0.70-1.20	<1.10	.	.
D-3	2.00-2.35	<0.60	<0.03	<0.03	<0.60	.	11.00-13.50	.	.	<1.00	<1.00	.
D-4	2.05-2.40	<0.60	<0.03	<0.03	<0.60	.	11.00-13.00	.	0.70-1.20	<1.00	.	.
D-5	1.40-1.60	<0.60	<0.03	<0.03	<0.60	.	11.00-13.00	2.50-3.50	0.70-1.20	<1.00	.	.
D-7	2.15-2.50	<0.60	<0.03	<0.03	<0.60	.	11.50-13.50	.	0.70-1.20	3.80-4.40	.	.
H-10	0.35-0.45	0.25-0.70	<0.03	<0.03	0.80-1.20	.	3.00-3.75	.	2.00-3.00	0.25-0.75	.	.
H-11	0.33-0.43	0.20-0.50	<0.03	<0.03	0.80-1.20	.	4.75-5.50	.	1.10-1.60	0.30-0.60	.	.
H-12	0.30-0.40	0.20-0.50	<0.03	<0.03	0.80-1.20	.	4.75-5.50	.	1.25-1.75	<0.50	1.00-1.70	.
H-13	0.32-0.45	0.20-0.50	<0.03	<0.03	0.80-1.20	.	4.75-5.50	.	1.10-1.75	0.80-1.20	.	.
H-14	0.35-0.45	0.20-0.50	<0.03	<0.03	0.80-1.20	.	4.75-5.50	.	.	.	4.00-5.25	.
H-19	0.32-0.45	0.20-0.50	<0.03	<0.03	0.80-1.20	.	4.00-4.75	4.00-4.50	0.30-0.55	1.75-2.20	3.75-4.50	4.00-5.25
H-21	0.26-0.36	0.15-0.40	<0.03	<0.03	0.15-0.50	.	3.00-3.75	.	.	0.30-0.60	8.50-10.00	.
H-22	0.30-0.40	0.15-0.40	<0.03	<0.03	0.15-0.40	.	1.75-3.75	.	.	0.25-0.50	10.00-11.75	.
H-23	0.25-0.35	0.15-0.40	<0.03	<0.03	0.15-0.60	.	11.00-12.75	.	.	0.75-1.25	11.00-12.75	.
H-24	0.42-0.53	0.15-0.40	<0.03	<0.03	0.15-0.40	.	2.50-3.50	.	.	0.40-0.60	14.00-16.00	.
H-26	0.45-0.55	0.15-0.40	<0.03	<0.03	0.15-0.40	.	3.75-4.50	.	.	0.75-1.25	17.25-19.00	.
H-42	0.55-0.70	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	.	4.50-5.50	1.75-2.20	5.50-6.75	.
L-2	0.45-1.00	0.10-0.90	<0.03	<0.03	<0.50	.	0.70-1.20	.	<0.25	0.10-0.30	.	.
L-6	0.65-0.75	0.25-0.80	<0.03	<0.03	<0.50	1.25-2.00	0.60-1.20	.	<0.50	.	.	.
M-1	0.78-0.88	0.15-0.40	<0.03	<0.03	0.20-0.50	.	3.50-4.00	.	8.20-9.20	1.00-1.35	1.40-2.10	.
M-2	0.78-1.05	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	.	4.50-5.50	1.75-2.20	5.50-6.75	.
M-3.1	1.00-1.10	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	.	4.75-6.50	2.25-2.75	5.00-6.75	.
M-3.2	1.15-1.25	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	.	4.75-6.50	2.75-3.25	5.00-6.75	.
M-4	1.25-1.40	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.75	.	4.25-5.50	3.75-4.50	5.25-6.50	.
M-6	0.75-0.85	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	11.00-13.00	4.50-5.50	1.30-1.70	3.75-4.75	.
M-7	0.97-1.05	0.15-0.40	<0.03	<0.03	0.20-0.55	.	3.50-4.00	.	8.20-9.20	1.75-2.25	1.40-2.10	.
M-10	0.84-1.05	0.10-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	.	7.75-8.50	1.80-2.20	.	.
M-30	0.75-0.85	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.50-4.25	4.50-5.50	7.75-9.00	1.00-1.40	1.30-2.30	.
M-33	0.85-0.92	0.15-0.40	<0.03	<0.03	0.25-0.55	.	3.50-4.00	7.75-8.75	9.00-10.00	1.00-1.35	1.30-2.10	.
M-34	0.85-0.92	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.50-4.00	7.75-8.75	7.75-9.20	1.90-2.30	1.40-2.10	.
M-36	0.80-0.90	0.15-0.40	<0.03	<0.03	0.20-0.45	.	3.75-4.50	7.75-8.75	4.50-5.50	1.75-2.25	5.50-6.50	.
M-41	1.05-1.15	0.20-0.60	<0.03	<0.03	0.15-0.50	.	3.75-4.50	4.75-5.75	3.25-4.25	1.75-2.25	6.25-7.00	.
M-42	1.05-1.15	0.15-0.40	<0.03	<0.03	0.15-0.65	.	3.50-4.25	7.75-8.75	9.00-10.00	0.95-1.35	1.15-1.85	.
M-46	1.22-1.30	0.20-0.40	<0.03	<0.03	0.40-0.65	.	3.70-4.20	7.80-8.80	8.00-8.50	3.00-3.30	1.90-2.20	.
M-48	1.50	.	.	.	.	.	3.75	9.00	5.25	3.10	10.0	.
M-52	0.90	.	.	.	.	.	4.00	.	4.00	2.00	1.25	.
M-61	1.60	.	.	.	.	.	4.00	.	6.50	5.00	12.0	.
M-62	1.30	.	.	.	.	.	3.75	.	10.5	2.00	6.25	.
O-1	0.85-1.00	1.00-1.40	<0.03	<0.03	<0.50	.	0.40-0.60	.	.	<0.30	0.40-0.60	.
O-2	0.85-0.95	1.40-1.80	<0.03	<0.03	<0.50	.	<0.35	.	<0.30	<0.30	.	.
O-6	1.25-1.55	0.30-1.10	<0.03	<0.03	0.55-1.50	.	<0.30	.	0.20-0.30	.	.	.
O-7	1.10-1.30	<1.00	<0.03	<0.03	<0.60	.	0.35-0.85	.	<0.30	<0.40	1.00-2.00	.
P-20	0.28-0.40	0.60-1.00	<0.03	<0.03	0.20-0.80	.	1.40-2.00	.	0.30-0.55	.	.	.
P-21	0.18-0.22	0.20-0.40	<0.03	<0.03	0.20-0.40	4.00-4.25	0.20-0.30	.	.	0.15-0.25	.	Al: 1.05-1.25
P-6	0.05-0.15	0.35-0.70	<0.03	<0.03	0.10-0.40	3.25-3.75	1.25-1.75	.	.	.	.	.
S-1	0.40-0.55	0.10-0.40	<0.03	<0.03	0.15-1.20	.	1.00-1.80	.	<0.50	0.15-0.30	1.50-3.00	.
S-2	0.40-0.55	0.30-0.50	<0.03	<0.03	0.90-1.20	.	0.90-1.20	.	0.30-0.60	<0.50	.	.
S-4	0.50-0.65	0.60-0.95	<0.03	<0.03	1.75-2.25	.	<0.35	.	.	<0.35	.	.
S-5	0.50-0.65	0.60-1.00	<0.03	<0.03	1.75-2.25	.	<0.35	.	0.20-1.35	<0.35	.	.
S-6	0.40-0.50	1.20-1.50	<0.03	<0.03	2.00-2.50	.	1.20-1.50	.	0.30-0.50	0.20-0.40	.	.
S-7	0.45-0.55	0.20-0.80	<0.03	<0.03	0.20-1.00	.	3.00-3.50	.	1.30-1.80	0.20-0.30*	.	.
T-1	0.65-0.80	0.10-0.40	<0.03	<0.03	0.20-0.40	.	3.75-4.50	.	.	0.90-1.30	17.25-18.25	.
T-15	1.50-1.60	0.15-0.40	<0.03	<0.03	0.15-0.40	.	3.75-5.00	4.75-5.25	<1.00	4.50-5.25	11.75-13.00	.
T-4	0.70-0.80	0.10-0.40	<0.03	<0.03	0.20-0.40	.	3.75-4.50	4.25-5.75	0.40-1.00	0.80-1.20	17.50-19.00	.
T-5	0.75-0.85	0.20-0.40	<0.03	<0.03	0.20-0.40	.	3.75-5.00	7.00-9.50	0.50-1.25	1.80-2.40	17.50-19.00	.
T-6	0.75-0.85	0.20-0.40	<0.03	<0.03	0.20-0.40	.	4.00-4.75	11.00-13.00	0.40-1.00	1.50-2.10	18.50-21.00	.
T-8	0.75-0.85	0.20-0.40	<0.03	<0.03	0.20-0.40	.	3.75-4.50	4.25-5.75	0.40-1.00	1.80-2.40	13.25-14.75	.
W-1	0.70-1.50	0.10-0.40	<0.025	<0.025	0.10-0.40	<0.20	<0.15	.	<0.10	<0.10	<0.15	Cu: <0.20
W-2	0.85-1.50	0.10-0.40	<0.03	<0.03	0.10-0.40	<0.20	<0.15	.	<0.10	0.15-0.35	<0.15	Cu: <0.20
W-5	1.05-1.15	0.10-0.40	<0.03	<0.03	0.10-0.40	<0.20	0.40-0.60	.	<0.10	<0.10	<0.15	Cu: <0.20

Number	C	Mn	P	S	Si	Ni	Cr	Co	Mo	V	W	Other
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These are specifications,  
not samples for sale.

## STAINLESS AND HIGH ALLOY STEEL SPECIFICATIONS

\* notes optional chemistry

Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	N	Nb	Other
13-8PH	<0.05	<0.20	<0.01	<0.008	<0.10	.	7.50-8.50	12.25-13.25	2.00-2.50	<0.01	.	Al: 0.90-1.35
15-5PH	<0.07	<1.00	<0.04	<0.03	<1.00	2.50-4.50	3.50-5.50	14.00-15.50	.	.	0.15-0.45	
17-4PH	<0.07	<1.00	<0.04	<0.03	<1.00	3.00-5.00	3.00-5.00	15.00-17.50	.	.	0.15-0.45	
201	<0.15	5.5-7.5	<0.060	<0.03	<1.00	.	3.50-5.50	16.00-18.00	.	<0.25	.	
202	<0.15	7.5-10.0	<0.060	<0.03	<1.00	.	4.00-6.00	17.00-19.00	.	<0.25	.	
301	<0.15	<2.00	<0.045	<0.03	<1.00	.	6.00-8.00	16.00-18.00	.	.	.	
302	<0.15	<2.00	<0.045	<0.03	<1.00	.	8.00-10.00	17.00-19.00	.	.	.	
302B	<0.15	<2.00	<0.045	<0.03	2.00-3.00	.	8.00-10.00	17.00-19.00	.	.	.	
303	<0.15	<2.00	<0.20	>0.15	<1.00	.	8.00-10.00	17.00-19.00	<0.60*	.	.	Zr: <0.60*
304	<0.08	<2.00	<0.045	<0.03	<1.00	.	8.00-10.50	18.00-20.00	.	.	.	
304L	<0.03	<2.00	<0.045	<0.03	<1.00	.	8.00-12.00	18.00-20.00	.	.	.	
305	<0.12	<2.00	<0.045	<0.03	<1.00	.	10.00-13.00	17.00-19.00	.	.	.	
308	<0.08	<2.00	<0.045	<0.03	<1.00	.	10.00-12.00	19.00-21.00	.	.	.	
309	<0.20	<2.00	<0.045	<0.03	<1.00	.	12.00-15.00	22.00-24.00	.	.	.	
310	<0.25	<2.00	<0.045	<0.03	<1.50	.	19.00-22.00	24.00-26.00	.	.	.	
314	<0.25	<2.00	<0.045	<0.03	1.50-3.00	.	19.00-22.00	23.00-26.00	.	.	.	
316	<0.08	<2.00	<0.045	<0.03	<1.00	.	10.00-14.00	16.00-18.00	2.00-3.00	.	.	
316	<0.08	<2.00	<0.045	<0.03	<1.00	.	10.00-14.00	16.00-18.00	2.00-3.00	.	.	
316L	<0.03	<2.00	<0.045	<0.03	<1.00	.	10.00-14.00	16.00-18.00	2.00-3.00	.	.	
321	<0.08	<2.00	<0.045	<0.03	<1.00	.	9.00-12.00	17.00-19.00	.	.	.	Ti: >5xC
347	<0.08	<2.00	<0.045	<0.03	<1.00	.	9.00-13.00	17.00-19.00	.	.	>10xC	
348	<0.08	<2.00	<0.045	<0.03	<1.00	.	9.00-13.00	17.00-19.00	.	.	>10xC	Ta: <0.10
384	<0.08	<2.00	<0.045	<0.03	<1.00	.	17.00-19.00	15.00-17.00	.	.	.	
385	<0.08	<2.00	<0.045	<0.03	<1.00	.	14.00-16.00	11.50-13.50	.	.	.	
403	<0.15	<1.00	<0.04	<0.03	<0.50	.	.	11.50-13.00	.	.	.	
405	<0.08	<1.00	<0.04	<0.03	<1.00	.	.	11.50-14.50	.	.	.	Al: 0.10-0.30
409	<0.08	<1.00	<0.04	<0.01	<1.00	.	<0.50	10.50-11.75	.	.	.	Ti: 6\mtC-0.75
410	<0.15	<1.00	<0.04	<0.03	<1.00	.	.	11.50-13.50	.	.	.	
414	<0.15	<1.00	<0.04	<0.03	<1.00	.	1.25-2.50	11.50-13.50	.	.	.	
416	<0.15	<1.25	<0.06	>0.15	<1.00	.	.	12.00-14.00	<0.60*	.	.	Zr: <0.60*
420	>0.15	<1.00	<0.04	<0.03	<1.00	.	.	12.00-14.00	.	.	.	
422	0.20-0.25	<1.00	<0.04	<0.03	<0.75	<0.50	0.50-1.00	11.00-12.50	0.75-1.25	.	.	V: 0.15-0.30
422	continued											W: 0.75-1.25
430	<0.12	<1.00	<0.04	<0.03	<1.00	.	.	16.00-18.00	.	.	.	
430F	<0.12	<1.25	<0.06	>0.15	<1.00	.	.	16.00-18.00	<0.60*	.	.	Zr: <0.60*
431	<0.20	<1.00	<0.04	<0.03	<1.00	.	1.25-2.50	15.00-17.00	.	.	.	
440A	0.60-0.75	<1.00	<0.04	<0.03	<1.00	.	.	16.00-18.00	<0.75	.	.	
440B	0.75-0.95	<1.00	<0.04	<0.03	<1.00	.	.	16.00-18.00	<0.75	.	.	
440C	0.95-1.20	<1.00	<0.04	<0.03	<1.00	.	.	16.00-18.00	<0.75	.	.	
450	<0.05	<1.00	<0.03	<0.03	<1.00	1.25-1.75	5.00-7.00	14.00-16.00	0.50-1.00	.	8\mtC	
455	<0.05	<0.50	<0.04	<0.03	<0.50	1.50-2.50	7.50-9.50	11.00-12.50	<0.50	.	0.10-0.50	Ti: 0.80-1.40
501	>0.10	<1.00	<0.04	<0.03	<1.00	.	.	4.00-6.00	0.40-0.65	.	.	
502	<0.10	<1.00	<0.04	<0.03	<1.00	.	.	4.00-6.00	0.40-0.65	.	.	
Duplex	<0.05	<3.00	<0.035	<0.03	<1.50	<2.50*	4.00-7.00	18.00-25.00	0.20-5.50	<0.40	.	

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