

C, S, O, N IN IRON AND STEEL, CHART 1 of 4

= class, 1 = CRM and 2 = RM analysis in mass % 34, 17025 = ISO

#	Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
1	18X D7	2.32	0.0111	0.072	0.0124	100 g powder last
1	JSS 202-2	1.443	.	.	.	150 g chips
1	JSS 202-1	1.386	.	.	.	150 g chips last
1	NH M02	1.34	0.007	.	.	150 g chips
1	NCS NS18016	1.19	0.0080	.	.	100 g chips
1	Y 31916	1.19	0.0080	.	.	100 g chips
2	KMS HCS-001	1.161	0.1318	.	.	100 g chips last
1	NCS NS18015	1.09	0.018	.	.	100 g chips
1	Y 31915	1.09	0.018	.	.	100 g chips
1	DSZU CA02	1.03	0.0021	.	0.0030	200 x 1.05 g balls
1	JSS 208-4	1.017	.	.	.	150 g chips
2	KMS HCS-002	1.013	0.123	.	.	100 g chips
2	TH 1071	1.01	0.0049	.	0.0040	100 g chips
1	JSS 208-3	0.998	.	.	.	150 g chips last
1	DSZU CX010a	0.993	0.0203	.	.	200 g chips
1	NCS NS18014	0.990	0.0041	.	.	100 g chips
1	Y 31914	0.990	0.0041	.	.	100 g chips
1	CZ 2008A	0.977	0.0091	.	0.0066	250 g chips
1	TH 1006-4	0.952	0.0111	.	0.0046	100 g chips
2	SAG 0703	0.924	0.0041	17025	0.0070	100 g chips
1	NCS NS18013	0.890	0.022	.	.	100 g chips
1	Y 31913	0.890	0.022	.	.	100 g chips
1	VS U13/4	0.888	0.0070	.	.	100 g chips
2	SAG 0704	0.818	0.0040	17025	0.0040	100 g chips
1	NCS NS13026	0.81	.	.	.	100 g chips
1	TH 1007-3	0.787	0.0137	.	0.0031	100 g chips last
1	TH 1027-2	0.726	0.0092	.	0.003	100 g chips
1	NCS NS13025	0.725	.	.	.	100 g chips
1	IPT 60A	0.715	0.012	.	.	100 g chips
2	SAG 0709	0.704	0.0064	17025	0.0030	100 g chips
1	NCS NS11010	0.703	0.010	.	.	50 g 0.5g balls last
1	502-894-0602	0.691	0.0101	.	34, 17025	100 g 1 g pins
1	CZ 2007A	0.684	0.0106	.	0.0128	250 g chips
1	NCS NS13008	0.644	0.068	.	.	100 g chips
1	NCS NS18012	0.610	0.0095	.	.	100 g chips
1	Y 31912	0.610	0.0095	.	.	100 g chips
1	ECRM 079-2	0.596	0.192	.	0.0074	100 g chips
2	DH E2128	0.593	0.0008	.	0.0036	50 g chips
1	NCS NS13024	0.59	.	.	.	100 g chips
1	SRM 2160	0.584	0.012	.	.	200 g 1 g pins
1	TH 1018-2	0.573	0.0019	.	0.0065	100 g chips
2	BS CSN 2-2	0.548	0.028	.	0.076	500 g 1 g pins
1	NCS NS18011	0.543	0.012	.	.	100 g chips
1	Y 31911	0.543	0.012	.	.	100 g chips
1	NCS NS28027	0.523	0.017	.	.	100 g chips
1	NCS NS93011	0.512	0.0095	.	.	100 g chips
1	IPT 59A	0.495	0.018	.	.	100 g chips
1	NCS NS13005	0.485	0.024	.	.	100 g chips
1	NCS NS13023	0.48	.	.	.	100 g chips
1	IARM 259A	0.479	0.0007	0.0014	0.0077	100 g chips
2	BS CSN 2-1	0.476	0.034	.	0.064	500 g 1 g pins
1	NCS NS28029	0.465	0.020	.	.	100 g chips
1	NCS NS28005	0.462	0.0096	.	.	100 g chips
1	CZ 2006A	0.461	0.0172	.	0.0066	250 g chips
1	NCS NS18010	0.455	0.019	.	.	100 g chips
1	Y 31910	0.455	0.019	.	.	100 g chips
2	DH E2184	0.4433	0.0152	.	.	50 g chips
2	SAG 0707	0.435	0.1965	17025	0.0064	100 g chips
1	NCS NS93006	0.428	0.032	.	.	100 g chips
1	ECRM 058-2C	0.424	0.1712	.	0.0107	100 g chips

Number Carbon Sulfur Oxygen Nitrogen Units

C, S, O, N IN IRON AND STEEL, CHART 2 of 4

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#	Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
1	NCS NS28004	0.416	0.022	.	.	100 g chips
1	NCS NS18009	0.415	0.020	.	.	100 g chips
1	Y 31909	0.415	0.020	.	.	100 g chips
2	DH E2333	0.3876	0.0585	.	.	50 g chips
1	TH 1013-2	0.384	0.0344	.	0.0142	100 g chips
1	NCS NS18008	0.376	0.028	.	.	100 g chips
1	Y 31908	0.376	0.028	.	.	100 g chips
1	NCS NS93012	0.375	0.046	.	.	100 g chips
1	NCS NS13022	0.37	.	.	.	100 g chips
1	CZ 2005A	0.358	0.0250	.	0.0081	250 g chips, last
1	NCS NS93005	0.357	0.018	.	.	100 g chips
2	SAG 0706	0.347	0.0245	17025	0.0098	100 g chips
1	NCS NS28025a	0.330	0.024	.	.	100 g chips
1	NCS NS11003	0.322	0.020	.	.	150 g chips
1	IPT 58A	0.316	0.021	.	.	120 g chips
1	NCS NS18007	0.312	0.026	.	.	100 g chips
1	Y 31907	0.312	0.026	.	.	100 g chips
1	NCS NS93009	0.310	0.031	.	.	100 g chips
1	JSS 252-3	0.302	0.0415	.	.	150 g chips
1	NCS NS93004	0.293	0.040	.	.	100 g chips
1	NCS NS18006	0.282	0.033	.	.	100 g chips
1	Y 31906	0.282	0.033	.	.	100 g chips
2	SAG 0708	0.257	0.0014	17025	.	100 g chips
1	NCS NS11011	0.235	0.039	.	.	100 g chips
1	NCS NS93008c	0.233	0.030	.	.	100 g chips
1	VS U19/2	0.233	0.030	.	.	100 g chips
1	NCS NS13021	0.21	.	.	.	100 g chips
1	VS U12/6	0.209	0.0200	.	.	100 g chips, last
1	NCS NS18005	0.204	0.022	.	.	100 g chips
1	Y 31905	0.204	0.022	.	.	100 g chips
1	VS 6-2	0.195	0.0250	.	.	100 g chips
1	NCS NS93014	0.190	0.030	.	.	100 g chips
2	DH E2161	0.1843	0.0043	.	0.0186	50 g chips
2	SAG 0705	0.184	0.0020	17025	0.0580	100 g chips
1	VS U15/6	0.182	0.0218	.	.	100 g chips
1	JK 21	0.1741	0.011	.	0.008	150 g chips
2	DH E21-372	0.1720	0.0011	.	0.0120	50 g chips
2	DH E21-371	0.1712	0.0011	.	0.0119	50 g chips
1	NCS NS18004	0.171	0.0102	.	.	100 g chips
1	Y 31904	0.171	0.0102	.	.	100 g chips
1	ECRM 077-3	0.1650	0.0162	.	0.00860	100 g chips
2	DH E2172	0.1611	0.0147	.	.	50 g chips
1	NCS NS28021	0.160	0.028	.	.	100 g chips
2	DH E2122	0.1599	0.0016	.	0.0078	50 g chips
2	SAG 0710	0.155	0.0209	17025	.	100 g chips
2	DH E2201	0.1492	0.0048	.	.	50 g chips
2	DH E21-201	0.1470	0.0109	.	.	50 g chips
1	NCS NS93013b	0.146	0.014	.	.	100 g chips
1	NCS NS11007	0.146	0.013	.	.	50 g chips
2	DH E2106	0.1406	0.0277	.	0.0063	50 g chips
2	DH E2334	0.135	0.0010	.	0.0147	50 g chips last of stock
2	DH E2175	0.1290	0.0181	.	.	50 g chips
1	VS U11/5	0.119	0.027	.	.	100 g chips
2	DH E2127	0.1087	0.00072	.	0.0103	50 g chips
1	VS U17/4	0.106	0.137	.	.	100 g chips
1	ECRM 286-1	0.100	0.280	.	0.043	100 g chips
1	NCS NS13020	0.10	.	.	.	100 g chips
1	NCS NS11006	0.097	0.021	.	.	50 g 0.5g balls last of stock
2	DH E2111	0.0953	0.0066	.	.	50 g chips last of stock
1	VS 6-1	0.094	0.0205	.	.	100 g chips
1	TH 1041	0.0925	0.0100	.	.	100 g chips
1	NH M01	0.090	0.057	.	.	150 g chips

Number Carbon Sulfur Oxygen Nitrogen Units

C, S, O, N IN IRON AND STEEL, CHART 3 of 4

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#	Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
1	VS S41/5	0.085	0.0069	.	0.142	100 g chips
1	TH 1038	0.0823	0.247	.	.	100 g chips
1	NCS NS18003	0.082	0.035	.	.	100 g chips
1	Y 31903	0.082	0.035	.	.	100 g chips
2	DH E23-201	0.0800	0.0027	.	0.0120	50 g chips
2	DH E2317	0.0795	0.0014	.	.	50 g chips
2	DH E2318	0.0793	.	.	.	50 g chips
1	TH 1036-2	0.0791	0.321	.	0.0034	100 g chips
1	CZ 2004A	0.079	0.0464	.	0.0038	250 g chips, last
1	TH 1042-3	0.079	0.0231	.	0.0091	100 g chips
1	DSZU CX020	0.0703	0.0286	.	.	200 g chips
2	BS CSN A	0.068	0.305	.	0.0081	100 g chips
1	CZ 2026A	0.068	0.255	.	.	250 g chips
1	ECRM 294-1C	0.0657	0.00031	.	0.566	100 g chips
2	DH E2326	0.0637	0.0013	.	.	50 g chips
2	DH E23-221	0.0622	0.0007	.	0.0031	50 g chips
2	DH E2322	0.0609	0.0009	.	.	50 g chips
2	DH E21-961	0.0609	0.0006	.	0.0034	50 g chips
1	JSS 245-6	0.0566	.	.	.	150 g chips
2	DH E2135	0.0502	0.0083	.	0.0019	50 g chips
1	TH 1040-3	0.0500	0.0041	.	0.0017	100 g chips
2	DH E22041	0.0469	0.0277	.	0.0035	50 g chips
1	JSS 201-15	0.0439	.	.	.	150 g chips
1	JSS 201-16	0.0413	.	.	.	150 g chips
1	NCS NS11026a	0.041	0.0025	.	.	100 g chips
1	CZ 2003A	0.0402	0.0316	.	0.0046	250 g chips
2	DH E2165	0.0399	0.0195	.	0.0059	50 g chips
1	TH 1070	0.0392	0.0217	.	0.004	100 g chips
2	DH E2162	0.0369	0.0007	.	0.0032	50 g chips
1	TH 1039-2	0.0352	0.0222	.	0.0027	100 g chips
1	ECRM 273-1C	0.0336	0.0004	.	0.0444	100 g chips
1	VS U10/5	0.032	0.0124	.	.	100 g powder
1	NCS NS18002	0.031	0.0084	.	.	100 g chips
1	Y 31902	0.031	0.0084	.	.	100 g chips
2	DH E2179	0.0232	.	.	.	50 g chips
1	NCS NS11040	0.019	0.0116	.	.	100 g chips
1	IARM 214A	0.018	0.002	0.0026	0.27	100 g chips
1	JSS 204-2	0.0178	.	.	.	150 g chips
1	ECRM 295-1C	0.0166	0.0004	.	0.0615	100 g chips
1	SRM 2159	0.016	0.0023	.	.	200 g 1 g pins
1	TH 1069	0.0148	0.0129	.	0.0043	100 g chips
1	ECRM 298-1C	0.0146	0.0006	.	0.263	100 g chips
1	TH 1017-2	0.0146	0.0004	.	0.0031	100 g chips
1	JK 36	0.0125	0.0126	.	0.0337	150 g chips
1	502-918-1427-5	0.0120	0.0267	.	34, 17025	200 g 1 g rings
1	502-918-1427	0.0114	0.0266	.	34, 17025	200 g 1 g rings
2	KMS HOCs-001	0.0112	0.0049	0.0314	.	100 g 1 g pins
2	KMS HNCS-001	0.01017	0.00377	.	0.0436	100 g 1 g pins
1	JSS 1203-5	0.00876	.	.	.	150 g chips
1	NCS NS11017a	0.0079	0.0016	.	.	100 g chips
1	SRM 166c	0.00781	.	.	.	100 g chips
1	NCS NS11013a	0.0068	0.0060	.	.	100 g chips
1	NCS NS11024	0.0066	0.023	.	.	100 g chips

Number Carbon Sulfur Oxygen Nitrogen Units

C, S, O, N IN IRON AND STEEL, CHART 4 of 4

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#	Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
1	501-950-1000	0.0062	0.0046	.	34, 17025	100 g chips
1	NCS NS11039	0.0051	0.0058	.	.	100 g chips
2	DH E2156	0.00483	0.01515	.	.	50 g chips
1	NCS NS11041	0.0040	0.0053	.	.	100 g chips
2	DH E2163	0.0036	0.0026	.	.	50 g chips
1	NCS NS11015a	0.0030	0.0019	.	.	100 g chips last of stock
2	TH 1045-4	0.0025	0.0041	.	0.0048	100 g chips
1	TH 1045-3	0.0024	0.0043	.	0.0047	100 g chips last of stock
1	VS U14/5	0.0023	0.0057	.	.	100 g chips
1	TH 1045D	0.0023	0.0043	.	0.0046	40 mm Ø x 40 mm disc
1	JSS 1207-2	0.00229	.	.	.	150 g chips
1	CZ 2025A	0.0020	0.0018	.	.	200 g chips
2	KMS LCSN-001	0.00169	0.00135	.	0.00045	100 g chips
1	NCS NS11012	0.0016	0.0063	.	.	100 g chips
1	SRM 131H	(0.00078)	0.00074	.	.	100 g chips
2	KMS LCSON-001d	0.0007	0.0005	0.0011	0.0006	100 g 1 g pins
1	JSS 1201-4	0.00066	.	.	.	150 g chips
2	DH SE26-10	0.00038	<0.0004	0.0120	0.00026	50 g chips last of stock
1	TH 1043-4	<0.0005	<0.0004	.	<0.0002	40 mm Ø x 40 mm disc
1	NCS NS13032	.	0.096	.	.	100 g chips
2	DH E2154	.	0.0472	.	.	50 g chips
1	NCS NS13029	.	0.037	.	.	100 g chips
1	JSS 241-12	.	0.0206	.	.	150 g chips
1	NCS NS13028	.	0.017	.	.	100 g chips
1	NCS NS13027	.	0.0105	.	.	100 g chips
1	JSS 240-14	.	0.0042	.	.	150 g chips
1	JSS 244-11	.	0.00201	.	.	150 g chips
1	SRM 2168	.	0.00107	.	.	150 g chips
#	Number	Carbon	Sulfur	Oxygen	Nitrogen	Units

Number Carbon Sulfur Oxygen Nitrogen Units

OXYGEN AND NITROGEN IN IRON AND STEEL

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#	Number	O	N	Size	Form
2	NS15-1	0.1249	.	50 g	0.5 g pins
2	JSM M403-2	0.1119	0.00066	100 g	1 g pins
2	SMO-14-3	0.1032	.	50 g	0.5 g pins, last of stock
2	SS-10-13	0.05230	0.00172	50 g	0.5 g pins
1	JSS 389-1	0.052	.	8 rods	5 mm Ø x 230 mm
1	BAM 029-1	0.0312	0.0083	100 g	3 rods, 8 mm Ø x 80 mm
1	Y TSN012	0.0221	0.0020	25 g	0.5 g balls
1	DSZU CA05	0.0202	0.0044	100 g	rods, ~2.8 mm Ø x ~80 mm rods
1	VS 7-9	0.020	0.0043	100 g	rods, ~2.5 mm Ø x ~220 mm
1	JK 35	0.0198	.	1 rod	10 mm Ø x 500 mm
2	SS-3-54	0.01791	0.00608	100 g	1 g pins
2	JSM M402-4	0.01799	0.01313	100 g	1 g pins
1	JSS 387-1	0.0179	.	8 rods	5 mm Ø x 230 mm, last of stock
2	SS-3-52	0.01782	0.00611	100 g	1 g pins, last of stock
1	NCS NS20050	0.0166	0.0026	50 g	1 g balls
1	Y TSN005	0.0160	0.0017	50 g	1 g balls
1	DSZU CA08	0.0152	0.0034	50 g	0.5 g pins
1	JSS 386-1	0.0142	.	8 rods	5 mm Ø x 230 mm
1	Y TSN006	0.0130	0.0038	50 g	1 g balls
1	VS 7-8	0.0121	0.0072	100 g	rods, ~3 mm Ø x 200 mm
1	DSZU CA06	0.0120	0.0072	100 g	rods, ~2.8 mm Ø x ~80 mm rods
1	NCS NS11050	0.0120	0.0019	50 g	1 g balls
1	Y TSN002	0.0117	0.0023	50 g	1 g balls
1	BAM 028-1	0.0113	0.0029	100 g	3 rods, ~3 mm Ø x ~80 mm
1	VS 7-14/1	0.011	0.0101	100 g	rods, ~4 mm Ø x ~10 mm rods
1	Y 41129	0.0108	0.0027	50 g	1 g balls
1	58A MS51004	0.0108	0.0027	50 g	1 g balls
1	NCS NS11056	0.0107	0.142	50 g	1 g balls
1	BCS 318B *	0.0103	.	100 g	1 rod, 12.7 mm Ø x 127 mm
2	SS-2-101	0.01007	0.00198	100 g	1 g pins
2	SS-2-98	0.01004	0.00195	100 g	1 g pins last of stock
1	VS 7-14	0.0100	0.0101	100 g	rods, ~4 mm Ø x ~10 mm rods
1	BCS 318A *	0.0096	.	100 g	2 rods, 6.35 mm Ø x 95 mm
1	NCS NS21006	0.00943	0.0264	50 g	1 g balls last
1	BAM 027-1	0.0084	0.0157	100 g	3 rods, 8 mm Ø x 80 mm
1	58A MS51012	0.0079	0.0149	50 g	1 g balls
1	Y TSN007	0.0078	0.0023	50 g	1 g balls
1	JK 34	0.0068	.	1 rod	8 mm Ø x 500 mm each
1	NCS NS11037	0.0066	0.109	50 g	0.5 g pins
1	NCS NS11052	0.0062	0.00075	50 g	1 g balls
1	NCS NS20049	0.0058	0.0040	50 g	1 g balls
1	DSZU CA07	0.0055	0.0292	100 g	rods, ~1.7 mm Ø x ~80 mm rods
1	VS 7-7	0.0055	0.0292	50 g	~1.5 mm Ø x ~115 mm rods
1	Y TSN009	0.0043	0.0380	25 g	0.5 g balls
1	58A SD51075	0.0043	0.0100	50 g	1 g balls
1	NCS NS11022	0.0038	0.0820	25 g	0.5 g pins last
1	Y 31901	0.0038	0.0063	25 g	0.5 g pins
1	502-198-0673	0.0038	.	100 g	1 g pins 34, 17025
1	58A SD51074	0.0037	0.0253	50 g	0.5 g balls
1	502-257-0717	0.0035	0.0785	100 g	1 g pins 34, 17025
1	502-257-0659	0.0032	0.0660	100 g	1 g pins 34, 17025
1	BAM 026-1	0.0031	0.0053	100 g	3 rods, 8 mm Ø x 80 mm
1	Y 41130	0.0029	0.0037	50 g	1 g balls
1	NCS NS41007	0.0029	0.0037	20 g	1 g balls
1	Y TSN004	0.0029	0.0036	50 g	1 g balls
1	JK 32	0.0028	.	1 rod	10 mm Ø x 500 mm each
1	BAM 026-2	0.0025	0.0042	100 g	3 rods, 8 mm Ø x 80 mm
1	SRM 1754	0.0024	0.0081	1 rod	0.95 cm x 0.95 cm x 10.2 cm
1	NCS NS11054	0.0023	0.0096	50 g	1 g balls

Number O N Size Form

OXYGEN AND NITROGEN IN IRON AND STEEL

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#	Number	O	N	Size	Form
1	NCS NS20035b	0.0022	0.0061	50 g	1 g balls
1	NCS NS11053	0.0022	0.0032	50 g	1 g balls
1	Y TSN003	0.0021	0.0035	50 g	1 g balls
1	Y TSN008	0.0020	0.0557	25 g	0.5 g balls
1	NCS NS20048a	0.0017	0.0070	50 g	1 g balls
2	SS-4-98	0.00169	0.01446	100 g	1 g pins last
1	JK 31	0.0015	.	1 rod	8 mm Ø x 500 mm each
1	NCS NS11051	0.0012	0.0045	50 g	1 g balls
1	NCS NS21002b	0.00115	0.0055	50 g	1 g balls
2	SS-4-102	0.00114	0.01329	100 g	1 g pins last
2	SS-4-99	0.00114	0.01306	100 g	1 g pins last
2	SS-4-106	0.00112	0.01321	100 g	1 g pins
1	Y TSN010	0.0011	0.0055	50 g	1 g balls
1	VS 7-6	0.0009	0.0067	100 g	~3 mm Ø x ~200 mm rods
1	DSZU CA04	0.00088	0.0067	100 g	rods, ~2.8 mm Ø x ~80 mm rods
1	Y 41340a	0.00087	0.0084	50 g	1 g balls
1	NCS NS41005a	0.00087	0.0084	20g/50g	1 g balls last
2	JSM M401-17	0.00074	0.00516	50 g	0.5 g pins
1	Y TSN011	0.00064	0.0091	50 g	1 g balls
1	NCS NS11055	0.00058	0.0028	50 g	1 g balls
1	Y TSN013	0.00049	0.0042	50 g	1 g balls
1	SRM 1094	0.0004	.	1 rod	0.6 mm Ø x 8.2 cm
1	DSZU CA01a	0.00035	0.0029	45 g	0.9 g pins
1	JSAC 0111	0.00023	.	32 mm Ø x 30 mm disc	
1	JK 49D	.	1.89	47 mm Ø x 15 mm disc	
1	JSS 370-1	.	0.417	150 g	chips
1	VS 7-22	.	0.398	100 g	chips
1	JSS 371-2	.	0.199	150 g	chips
1	VS 7-5/3	.	0.0241	100 g	chips
2	DH E2126	.	0.0153	50 g	chips last of stock
1	VS 7-11	.	0.0152	100 g	chips
1	NCS NS13012	.	0.012	150 g	chips
1	NCS NS13011	.	0.0099	150 g	chips
1	NCS NS13010	.	0.0096	150 g	chips
1	VS 7-3/2	.	0.0093	100 g	chips
1	NCS NS14001	.	0.0081	100 g	chips
1	NCS NS13009	.	0.0078	150 g	chips
1	NCS NS13037	.	0.0067	150 g	chips
2	TH 1016	.	0.0067	100 g	chips
1	NCS NS13036	.	0.0064	150 g	chips
1	NCS NS14003	.	0.0048	100 g	chips
1	JSS 367-9	.	0.0044	150 g	chips
1	NCS NS13034	.	0.0044	150 g	chips
1	NCS NS13033	.	0.0043	150 g	chips
1	NCS NS14002	.	0.0040	100 g	chips
1	VS 7-2/2	.	0.0039	100 g	chips
1	VS 7-10	.	0.0038	100 g	chips
1	JSS 366-9	.	0.00065	150 g	chips

Number O N Size Form

HYDROGEN IN IRON AND STEEL

analysis listed in mass % except * which is mg/kg (ppm)

#	Number	H*	C	S	O	N	Size	Form	Comments
2	SS-5-33	7.3	.	.	.	.	100 g	10 g rods	4 mm Ø x 100 mm each
1	58A HP51012	7.2	.	.	.	.	50 g	1 g balls	
1	DSZU CA013	6.8	.	.	0.0018	0.0102	50 g	1 g pins	
1	<u>502-855-0718</u>	6.7	0.0460	0.0126	0.0121	0.0673	100 g	1 g pins	<u>34, 17025</u>
1	CMSI 3012-3	6.5	.	.	.	.	40 g	2 g balls	
1	<u>502-060-0737</u>	6.17	.	.	.	.	125 g	5 g pins	<u>34, 17025</u>
1	NCS NS20001a	6.00	.	.	.	.	20 g	1 g balls	
1	JSS GS-7a	6.0	.	.	.	.	8 steel rods	5 mm Ø x 230 mm ~ 280 g	
1	<u>502-702-1000</u>	(6)	0.342	0.0100	1.10	0.0079	100 g	powder	<u>34, 17025</u>
1	<u>502-855-0718-1</u>	(5.7)	0.0454	0.0123	0.0109	0.0661	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51011	5.8	.	.	0.0033	0.0305	50 g	1 g balls	
1	DSZU CA012	5.4	.	.	0.0058	0.0322	50 g	1 g pins	
1	Y TSH001	4.6	.	.	.	.	50 g	1 g balls	
1	<u>502-903-0673</u>	4.4	.	.	0.0040	0.0509	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51010	4.1	.	.	.	.	50 g	1 g balls	
1	NCS NS20042	3.55	.	.	.	.	20 g	1 g balls	
1	<u>502-913-0720</u>	3.5	0.066	0.0049	0.0066	0.0557	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51009	2.9	.	.	.	.	50 g	1 g balls	
1	<u>502-928-0627</u>	2.5	0.0271	0.0206	0.0043	0.0766	100 g	1 g pins	<u>34, 17025</u>
1	<u>502-904-0599</u>	(2.4)	0.052	0.0026	0.0034	0.0512	100 g	1 g pins	<u>34, 17025</u>
1	<u>502-935-0719</u>	2.2	0.062	0.0011	0.0028	0.0712	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51008	2.2	.	.	.	.	50 g	1 g balls	
1	58A NK51085	2.0	.	.	0.0025	0.058	50 g	1 g balls	
1	JSS GS9-1	2.0	.	.	.	.	8 steel rods	5 mm Ø x 230 mm ~ 280 g	
1	58A HP51007	1.8	.	.	.	.	50 g	1 g balls	
1	58A HP51006	1.6	.	.	0.0038	0.0330	50 g	1 g balls	
1	<u>502-904-0566</u>	(1.5)	0.056	0.0179	0.0039	0.0923	100 g	1 g pins	<u>34, 17025</u>
1	<u>502-893-0695</u>	(1.4)	0.807	0.0135	0.0039	0.0021	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51005	1.3	.	.	.	.	50 g	1 g balls	
1	NCS NS20025b	1.1	.	.	.	.	20 g	1 g balls	
1	DSZU CA011	1.1	.	.	(0.002)	0.0074	50 g	1 g pins	
1	<u>502-916-0662-1</u>	(1.1)	0.384	0.0078	0.0037	0.0068	100 g	1 g pins	<u>34, 17025</u>
1	<u>BS HON-U</u>	1.0	0.050	0.0018	0.0023	0.0254	100 g	1 g balls	<u>34, 17025</u>
1	BAM CRM H1	0.97	.	.	.	.	100 g	1 g pins	
1	58A HP51004	0.9	.	.	.	.	50 g	1 g balls	
2	JSM M481-1	0.9	.	.	.	.	100 g	1 g balls	
1	<u>502-916-0662</u>	(0.9)	0.383	0.0078	0.0032	0.0068	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51003	0.8	.	.	.	.	50 g	1 g balls	
1	<u>502-868-0609</u>	(0.7)	0.0540	0.0163	0.0090	0.0072	100 g	1 g pins	<u>34, 17025</u>
1	58A HP51002	0.5	.	.	.	.	50 g	1 g balls	
1	NCS NS11043	0.5	.	.	0.0041	0.0381	50 g	1 g balls	
1	<u>502-712-1038</u>	(0.4)	0.0012	0.0006	0.0011	0.0006	100 g	1 g pins	<u>34, 17025</u>
1	<u>502-704-1001</u>	(0.4)	0.0007	0.0001	0.0216	0.0002	100 g	chips	<u>34, 17025</u>

#	Number	H*	C	S	O	N	Size	Form	Comments
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CAST IRON CHIPS AND POWDER

= class, where 1 = CRM and 2 = RM

#	Number	C%	S%	N%	Units	Comment
1	NH M03	5.63	0.008	.	150 g chips	
1	<u>502-920-1002</u>	4.88	0.013	.	150 g powder	<u>34, 17025</u>
1	<u>502-920-1003</u>	4.82	0.019	.	150 g powder	<u>34, 17025</u>
1	ECRM 490-1	4.813	0.0040	0.0030	100 g chips	
2	DH E2512	4.738	0.103	.	50 g chips	last
1	CZ 2024A	4.512	0.0264	.	100 g chips	
2	DH E2502	4.230	0.0498	.	50 g chips	
1	GBW 01113C	4.11	0.054	.	150 g chips	last
1	NCS HC28055	4.04	0.0095	.	100 g chips	
1	CZ 2023A	4.029	0.0886	.	100 g chips	
1	NCS HC93001	4.01	0.069	.	100 g chips	
1	NCS HC18015	4.01	0.046	.	100 g chips	
1	<u>502-919-1004</u>	3.94	0.111	.	150 g chips	<u>34, 17025</u>
1	CZ 2022A	3.826	0.0768	.	100 g chips	
1	VS Ch11/4	3.61	0.0204	.	100 g powder	
1	NCS NS16002	3.60	0.0186	.	100 g chips	
1	VS Ch10/4	3.59	0.085	.	100 g powder	
1	CTIF FB20-2	3.557	0.0614	.	100 g chips	
1	CTIF FB20-1	3.552	0.059	.	100 g chips	
1	CZ 2020A	3.532	0.0417	.	100 g chgps	
1	ECRM 485-3	3.514	0.1488	0.0081	100 g chips	
2	TH 1023-3	3.45	0.0048	.	100 g chips	
2	HRT 530-033	3.33	0.011	.	150 g powder	
2	HRT 530-033A	3.33	0.011	.	1 kg powder	
1	VS Ch8/4	3.3	0.01	.	100 g powder	
1	CZ 2019A	3.270	0.0116	.	100 g chips	
1	ECRM 492-1	3.258	0.0854	0.0048	100 g chips	
1	<u>502-899-1033</u>	3.19	0.045	.	100 g powder	<u>34, 17025</u>
1	CZ 2018A	3.173	0.0142	.	100 g chips	
1	VS Ch22	3.16	0.106	.	100 g powder	
1	CTIF FB 13	2.959	0.0973	.	100 g chips	
1	VS Ch9/6	2.94	0.095	.	100 g powder	
1	SRM 334	2.83	0.043	.	150 g chips	
1	NCS NS13001	2.51	0.020	.	100 g chips	
1	CZ 2017A	2.463	0.0755	.	100 g chips	
1	<u>501-105-1007</u>	2.33	0.011	last	250 g powder	<u>34, 17025</u>
1	<u>502-698-1008</u>	2.16	0.013	.	150 g powder	<u>34, 17025</u>
1	CTIF FB20	2.114	0.128	.	100 g chips	
1	CZ 2016A	2.053	0.0048	.	100 g chips	
1	NCS NS16001	2.02	0.0014	.	100 g chips	
1	CZ 2015A	1.996	0.0157	.	100 g chips	
1	BS CE 216 *	.	0.043	.	150 g chips	
1	BS CE 219 *	.	0.038	.	150 g chips	
1	BS CE 217 *	.	0.029	.	150 g chips	

#	Number	C%	S%	N%	Units	Comment
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CRM ALUMINUM IN STEEL

analysis listed in mass % chips 150 g

Number	Al	B	P	Si
JSS 330-4	0.0063	.	.	.

S, O, N, H, C IN NON-FERROUS METALS

= class, where 1 = CRM and 2 = RM analysis listed in mg/kg 17025 = ISO Accreditation

#	Number	Material	Carbon	Sulfur	Oxygen	Nitrogen	Hydrogen	Size & Form
1	AA Alu-H2	Aluminum	.	.	.	.	0.068	10 rods, 0.5" Ø x ~24"
1	IMN Cu 90-1	Copper	.	83.7	.	.	.	250 g chips
1	IMN Cu 50-1	Copper	.	49.6	.	.	.	250 g chips last
1	IMN Cu S-20	Copper	.	23.1	.	.	.	150 g chips
1	SRM 885	Copper	Ag:(5)	18	310	Pb:2	.	200 g of 1 g pins Trace As, Bi, Fe, Ni, Sb, Sn, and Zn
1	502-937-0750	Copper	.	11.6	.	.	.	100 g of 1 g pins 17025
1	IMN Cu S-10	Copper	.	7.5	.	.	.	150 g chips
1	IMN Cu 600/1	Copper	.	.	581	.	.	220 g of rods 6 mm Ø x 105 mm
1	NCS NS11035	Copper	.	.	479	.	.	25 g of 1 g pins
1	BCR 058	Copper	.	.	390	.	.	rod, 7 mm Ø x 50 mm
2	BAM 379/3	Copper	.	.	378	.	.	disc, 40 mm Ø x 30 mm
1	NCS NS11038	Copper	.	.	376	.	.	25 g of 1 g pins
1	502-945-0762-1	Copper	.	.	336	.	.	100 g of 1 g pins 17025
1	502-945-0762	Copper	.	.	332	.	.	100 g of 1 g pins 17025
1	IMN Cu 300	Copper	.	.	258	.	.	150 g of rod 5 mm Ø x 100 mm
2	BAM 379/2	Copper	.	.	212	.	.	disc, 40 mm Ø x 30 mm
1	NCS NS11036	Copper	.	.	208	.	.	25 g of 1 g pins
1	IMN Cu 100/5	Copper	.	.	163.7	.	.	200 g of rod 20 mm Ø x 100 mm
1	DSZU CA023	Copper	.	.	158	(2.1)	.	50 g of 0.5 g pins
1	BCR 022A	Copper	.	.	138	.	.	disc, 26 mm Ø x 9 mm
1	BCR 022B	Copper	.	.	138	.	.	rod, 9 mm Ø x 50 mm
1	NCS NS11033	Copper	.	.	135	.	.	25 g of 1 g pins
1	IMN Cu 100	Copper	.	.	123	.	.	150 g of rod 5 mm Ø x 100 mm
2	BAM 379/1	Copper	.	.	38	.	.	disc, 40 mm Ø x 30 mm
1	NCS NS11032	Copper	.	.	18	.	.	25 g of 1 g pins
1	NCS NS11031	Copper	.	.	10	.	.	25 g of 1 g pins
1	DSZU CA021	Copper	.	.	7.4	(1.9)	.	50 g of 1 g pins
1	IMN Cu 10/1	Copper	.	.	3.8	.	.	150 g of rod 6 mm Ø x 110 mm
1	501-953-0648	Copper	.	.	3.2	.	.	100 g of 1 g pins 17025
1	NCS NS11030	Copper	.	.	2.8	.	.	rod, 6 mm Ø x 110 mm
1	IMN Cu 10	Copper	.	.	2.1	.	.	150 g of rod 5 mm Ø x 100 mm
1	BCR 054R	Copper	.	.	0.47	.	.	rod, 7 mm Ø x 50 mm
1	IMN Ni-2	Nickel	128	149	.	.	.	100 g chips
1	502-924-1028	Nickel	5.9	0.6	.	.	.	100 g chips 17025
1	SRM 861	Nickel	.	0.561	.	.	.	50 g chips
2	502-411-0699	Nickel	.	.	2.4	.	.	100 g of 1 g pins
1	IMN Ag10/1	Silver	.	.	11	.	.	2 rods, 6 mm Ø x 100 mm
1	BCR 275	Zircaloy-4	113	.	1670	39.0	.	10 pcs 13 mm Ø x 1 mm each
1	BCR 276	Zircaloy-4	108	.	1540	41	.	100 pcs 4.5 mm Ø x 2 mm each
1	502-890-0747	Zirconium	145	.	141	20	9.1	20 g of 0.1 g pins 17025

#	Number	Material	Carbon	Sulfur	Oxygen	Nitrogen	Hydrogen	Size & Form
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CRM COPPER PINS analysis listed in mg/kg 50g of 0.31g pins

Number	Ag	As	Bi	Cd	Co	Cr	Fe	Mn	Ni	Pb	S	Sb	Se	Sn	Te	Zn
IMN 001	27.1	3.13	1.39	(0.11)	2.09	3.53	13.9	5.16	3.64	4.02	5.99	2.4	1.34	3.39	1.23	4.57

RM PURITY NICKEL POWDER

certified analysis listed in mg/kg, no uncertainties

informational values

100 g units

Number	Al	C	Cr	Cu	Fe	Mn	Mo	O	P	Pb	S	Si	Ag	As	B	Ba	Be	Bi	Ca	Cd	Co	Ga	H	In	Mg	N	Na	Sb	Se	Sn	Te	Ti	Tl	V	Zn
BS HPN-1	70	268	22	2	202	2	3	1850	5	0.2	4	6	<0.1	<0.5	<2	<1	<1	<0.2	3	<0.1	<2	<0.5	99	<0.2	1	27	4	<0.1	<0.2	<1	<0.2	<1	<0.1	<1	<1

CRM TITANIUM

analysis listed in mass %

Number	H	C	N	O	S	Units
SRM 2454	0.0211	.	.	.	.	10 g chips
IARM 344A	(0.015)	0.011	0.005	0.107	(0.001)	65 g chips
SRM 2453a	0.01268	.	.	.	.	10 g of 0.1 g pins
SRM 2453	0.0114	.	.	.	.	10 g chips last
502-891-0748	0.0101	0.011	0.010	0.117	.	20 g of 0.1 g pins 17025, 34
502-891-0748-1	0.0099	0.011	0.010	0.116	.	20 g of 0.1 g pins 17025, 34
NCS NS57011a	0.0085	.	.	.	.	10 g rods
SRM 2452	0.00559	.	.	.	.	10 g chips
IARM 337A	0.005	0.008	0.0017	0.104	(0.001)	65 g chips
IARM 345A	0.0040	0.010	0.0025	0.120	(0.001)	65 g chips
DSZU CA017	0.0039	.	0.0061	0.151	.	10 g of 0.1 g pins
502-921-0596	(0.00317)	0.007	0.007	0.066	.	20 g of 0.1 g pins 17025, 34
IARM 336B	0.0029	0.006	0.0016	0.101	(0.002)	65 g chips
502-867-0739-2	(0.0029)	0.023	0.012	0.140	.	20 g of 0.1 g pins 17025, 34
502-888-0746-37	0.0027	0.049	0.006	0.354	.	20 g of 0.1 g pins 17025, 34
502-867-0739-3	(0.00247)	0.022	0.0126	0.144	.	20 g of 0.1 g pins 17025, 34
502-888-0746-5	0.0024	0.050	0.006	0.353	.	20 g of 0.1 g pins 17025, 34
IARM 261A	0.0023	0.007	0.007	0.10	(0.001)	65 g chips last
DSZU CA016	0.0023	.	0.0070	0.058	.	10 g of 0.1 g pins
IARM 336A	0.0022	0.005	0.0015	0.102	(0.002)	65 g chips
IARM 311A	0.0021	0.009	0.012	0.083	.	65 g chips
IARM 300A	0.0018	0.007	0.0033	0.162	0.0008	65 g chips
IARM 178D	0.0016	0.028	0.017	0.17	(0.001)	65 g chips
IARM 280A	0.0015	0.005	0.0014	0.19	(0.001)	65 g chips
DSZU CA018	0.0015	.	0.0130	0.058	.	10 g of 0.1 g pins
BCR 318	0.00122	.	.	.	.	100 discs, 7 mm Ø x 1 mm
IARM 261C	0.001	0.011	0.005	0.085	(0.001)	65 g chips
IARM 261B	(0.001)	0.011	0.004	0.083	(0.0004)	65 g chips
IARM 261E	(0.0005)	0.012	0.006	0.084	(0.001)	65 g chips
IARM 261D	(0.0005)	0.011	0.0051	0.083	(0.001)	65 g chips
NCS NS57104	.	.	0.040	0.309	.	10 g of 0.1 g pins
58A BT53004	.	.	0.04	0.309	.	10 g of 0.1 g pins
BCR 059B	.	.	0.0172	0.1750	.	25 units of 0.2 g cubes
BCR 059A	.	.	0.0172	0.1750	.	disc, 26 mm Ø x 9 mm
NCS NS57103	.	.	0.017	0.121	.	10 g of 0.1 g pins
58A HCS3003	.	.	0.014	0.124	.	~10 g rods 3 pcs 1.5 x 100 mm
NCS NS57012	.	.	0.013	.	.	3 rods 1.5 mm Ø x 100 mm total 10 g
BCR 024B	.	.	0.0117	0.0608	.	25 0.4 g cubes
BCR 024C	.	.	0.0117	0.0608	.	25 0.2 g cubes
NCS NS57101	.	.	0.011	0.045	.	10 g of 0.1 g pins
NCS NS57102	.	.	0.007	0.073	.	10 g of 0.1 g pins
BELOW ITEMS ARE SET ONLY, AS GROUPED						
NCS NS20043-4	0.00295	.	0.0089	0.16	.	Rod 100 x 3 x 2 mm last of stock
NCS NS20043-1	0.0018	.	0.014	0.18	.	Rod 100 x 3 x 2 mm
NCS NS20043-2	0.0014	.	0.018	0.31	.	Rod 100 x 3 x 2 mm
NCS NS20043-3	0.0010	.	0.0093	0.13	.	Rod 100 x 3 x 2 mm

Number	H	C	N	O	S	Units
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INORGANIC MATERIALS

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg (ppm)

#	Number	Material and Units	C	S	O	N	Hg*	Heat
1	502-930-1000	Tungsten Carbide powder 100g	6.26	.	.	.	.	17025
1	502-905-1000	Synthetic Carbon 50g powder	5.00	.	.	.	.	17025
1	502-813-1004	Fly Ash 20g	1.07	1.32	.	.	0.58	17025
1	502-696-1000	Synthetic Carbon 50g powder	1.00	.	.	.	.	17025
1	502-632-1012	Synthetic Carbon 50g powder	0.13	.	.	.	.	17025
1	502-699-1000	Zinc Sulfide 50g powder	.	32.8	.	.	.	17025
2	502-139-1009	Silicon Dioxide powder 10g	.	.	53.2	.	.	17025
2	502-138-1003	Iron III Oxide powder 10g	.	.	30.2	.	.	17025
1	502-141-1031	Tungsten Oxide powder 10g	.	.	20.7	.	.	17025
1	BCR 102	Tungsten Carbide 2 to 3 grams	.	.	0.0185	.	.	.
1	502-908-1000	Zirconium Dioxide 10g powder	.	.	0.00258	.	.	17025
1	COCO BA001	Benzoic Acid 100g of 1g tablets	.	.	.	.	26,450 J	and 11,371 BTU
2	BCS 190v	Benzoic Acid 100g of 1g tablets	.	.	.	.	.	26,443.2 J
2	BCS 190t	Benzoic Acid 100g crystals	.	.	.	.	.	26,439.7 J
2	BCS 190t tabs	Benzoic Acid 20g of 0.2g tablets	.	.	.	.	.	26,439.7 J
1	SRM 39J	Benzoic Acid 30g powder	.	.	.	.	.	26,434 J
1	502-892-1000	Benzoic Acid 70g of 1g tablets	.	.	.	17025	.	11,368 BTU
2	621-606-245-1032	Benzoic Acid 50g of 0.6g tablets	.	.	.	.	.	11,371 BTU

UNDERLINED = ISO 17025 Accreditation

LECO COAL and COKE - see our INDUSTRIAL MATERIALS CATALOG

<http://www.brammerstandard.com/pdf/industrial.pdf>

CRM REFRACTORY SET

available in set/6 only

Number	S	Units
JRRM 1101	0.106	40 g
JRRM 1102	0.293	40 g
JRRM 1103	1.02	40 g
JRRM 1104	1.48	40 g
JRRM 1105	2.89	40 g
JRRM 1106	4.93	40 g

ORGANIC COMBUSTION SAMPLES

RM unless otherwise noted, 501-/502- CRM are 17025

analysis listed in mass %

Part Number	Material and Units	C	S	O	N	H
502-634-1000	GRAPHITE 50g	100.0	.	.	.	.
502-897-1001	BBOT 25g (CRM)	72.48	7.47	.	6.48	6.15
502-695-1000	ACETANILIDE 10g (CRM)	71.01	.	.	10.36	6.75
502-184-1004	BENZOIC ACID 10g	68.85	.	26.20	.	4.95
502-642-1016	PHENYLALANINE 50g (CRM)	65.38	.	.	8.45	6.73
502-688-1000	NICOTONIC ACID 25g (CRM)	58.51	.	.	11.36	4.10
502-209-1045	SULFAMETHAZINE 5g (CRM)	51.71	11.52	.	20.07	5.07
502-298-1045	SULFAMETHAZINE 25g (CRM)	51.71	11.52	.	20.07	5.07
502-055-1036	ORCHARD LEAVES 20g (CRM)	49.55	0.126	.	1.77	6.07
502-205	CAFFEINE 5g	49.48	.	16.48	28.85	5.19
502-907-1000	RICE FLOUR 50g (CRM)	44.70	0.121	.	1.56	.
502-896-1000	EDTA 50g (CRM)	41.03	.	.	9.56	5.52
502-896-250-1000	EDTA 250g (CRM)	41.03	.	.	9.56	5.52
502-082-1018	TOBACCO LEAVES 20g (CRM)	47.27	0.46	.	2.48	.
502-276-1003	OAT MEAL 50g	45.85	0.253	.	2.77	6.67
502-692-1000	WHEAT FLOUR 50g (CRM)	45.34	0.193	.	2.66	6.41
502-273-1026	ALFALFA 50g (CRM)	45.05	0.38	.	3.62	.
501-441	SUCROSE 50g	42.10	.	51.42	.	6.48
502-911-1000	GLYCINE 50g (CRM)	31.95	.	.	18.69	6.68
502-691-1000	CYSTINE 25g (CRM)	29.97	26.62	.	11.62	5.04
502-814-1002	SOIL 25g	22.6	0.323	.	1.93	.
502-902-1000	CALCIUM CARBONATE 50g (CRM)	12.01	.	.	.	.
502-694-1000	SOIL 65g (CRM)	10.80	0.124	.	0.86	.
502-697-1000	SOIL 65g (CRM)	3.82	0.045	.	0.323	.
JSM M454-1	GRAIN 150g	3.73	0.0298	.	.	.
JSM M453-1	GRAIN 150g	3.20	0.0136	.	.	.
JSM M452-1	GRAIN 150g	2.78	0.0110	.	.	.
502-319-1018	ORE TAILINGS 25g (CRM)	2.19	0.66	.	.	last
502-693-1000	ORE TAILINGS 25g (CRM)	2.07	2.27	.	.	.
JSM M451-1	GRAIN 150g	0.93	0.0096	.	.	.
502-635-1000	ORE TAILINGS 25g	0.55	45.0	.	.	.
502-934-1000	SYNTHETIC CARBON 50g (CRM)	0.54	.	.	.	.
JK 47A	IRON ORE 35g (CRM)	0.370	(0.009)	0.69	0.0062	.
502-909-1000	ORE TAILINGS 25g (CRM)	0.19	0.68	.	.	.
502-906-1000	BARLEY FLOUR 50g (CRM)	.	.	.	2.01	.
501-563-150-1016	CORN FLOUR 50g (CRM)	.	.	.	1.06	.

Part Number	Material and Units	C	S	O	N	H
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CRM CALCIUM OXALATE 17025 50 g units

Part Number	Temp	% Loss	Temp	% Loss	Temp	% Loss
<u>502-926-1000</u>	200° C	12.3 H ₂ O	450° C	19.2 CO	850° C	30.1 CO ₂