

**CRM C, S, O, N IN IRON BASE MATERIALS**

Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
ECRM 078-1	1.050	0.0066	.	0.0094	100 g chips
BS CE 027 *	1.00	0.0035	.	.	150 g (RM) chips * Clearance Sale Item
CZ 2008A	0.977	0.0091	.	0.0066	250 g chips
TH 1006-4	0.952	0.0111	.	0.0046	100 g chips
JSS 611-10	0.874	0.00064	.	0.0252	150 g chips
TH 1038	0.823	0.247	.	.	100 g chips
TH 1007-3	0.787	0.0137	.	0.0031	100 g chips
TH 1027-2	0.726	0.0092	.	0.003	100 g chips
IPT 60A	0.715	0.012	.	.	100 g chips
CZ 2007A	0.684	0.0106	.	0.0128	250 g chips
ECRM 079-2	0.596	0.192	.	0.0074	100 g chips
TH 1018-2	0.573	0.0019	.	0.0065	100 g chips
IPT 59A	0.495	0.018	.	.	100 g chips
IARM 259A	0.479	0.0007	0.0014	0.0077	100 g chips
TH 1002-3	0.4757	0.0526	.	0.0088	100 g chips
CZ 2006A	0.461	0.0172	.	0.0066	250 g chips
IARM 199B	0.45	0.29	(0.0048)	0.0059	100 g chips
ECRM 058-2C	0.424	0.1712	.	0.0107	100 g chips
TH 1013-2	0.384	0.0344	.	0.0142	100 g chips
CZ 2005A	0.358	0.0250	.	0.0081	250 g chips
IARM 154B	0.35	0.0004	0.0016	0.020	100 g chips
IPT 58A	0.316	0.021	.	.	120 g chips
IARM 242A	0.24	0.0004	0.0006	0.0003	100 g chips
IARM 205B	0.220	0.001	0.0016	0.049	100 g chips
TH 1010-2	0.145	0.0136	.	0.0034	100 g chips
IARM 10C	0.128	0.29	0.008	0.015	100 g chips
BAM 039-2	0.107	0.310	.	0.0113	100 g chips
ECRM 286-1	0.100	0.280	.	0.043	100 g chips
IARM 100B	0.100	0.0006	0.0016	0.132	100 g chips
TH 1041	0.0925	0.0100	.	.	100 g chips
TH 1036	0.0830	0.327	.	.	100 g chips
TH 1036-2	0.0791	0.321	.	0.0034	100 g chips
CZ 2004A	0.079	0.0464	.	0.0038	250 g chips
TH 1042-2	0.0778	0.0227	.	0.0087	100 g chips
IARM 1C	0.068	0.378	0.0049	0.0344	100 g chips
IARM 206A	0.068	0.26	(0.019)	0.0119	100 g chips
TH 1031	0.0674	0.403	.	.	100 g chips
ECRM 294-1C	0.0657	0.00031	.	0.566	100 g chips
IARM 8C	0.060	0.027	0.0054	0.054	100 g chips
TH 1040	0.0504	0.0051	.	0.0011	100 g chips

For more choices, please visit the Iron Chips Catalog.

Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
TH 1040-3	0.0500	0.0041	.	0.0017	100 g chips
IARM 6D	0.048	0.0007	0.0010	0.0095	100 g chips
CZ 2003A	0.0402	0.0316	.	0.0046	250 g chips
NCS NS21011	0.038	0.0021	.	.	100 g chips
TH 1039-2	0.0352	0.0222	.	0.0027	100 g chips
ECRM 273-1C	0.0336	0.0004	.	0.0444	100 g chips
IARM 17B	0.032	0.003	0.0042	0.33	100 g chips
HRT 530-192	0.0234	0.0032	.	0.1743	100 g (RM) chips
TH 1019-4	0.0200	0.0133	.	0.0046	100 g chips
IARM 214A	0.018	0.002	0.0026	0.27	100 g chips
ECRM 295-1C	0.0166	0.0004	.	0.0615	100 g chips
CT ES0088A	0.0151	0.00045	.	.	200 g pins
IARM 162A	0.015	0.024	0.0039	0.077	100 g chips
TH 1069	0.0148	0.0129	.	0.0043	100 g chips
ECRM 298-1C	0.0146	0.0006	.	0.263	100 g chips
TH 1017-2	0.0146	0.0004	.	0.0031	100 g chips
JK 36	0.0125	0.0126	.	0.0337	150 g chips
NCS NS28035	0.012	0.0069	.	.	100 g chips
JSS 1203-3	0.0097	.	.	.	150 g chips
NCS NS20040	0.0085	0.0051	.	.	100 g chips
NCS NS11013	0.0066	0.0056	.	.	150 g chips
IARM 99B	0.005	0.0005	0.0015	0.0011	100 g chips
JSS 1202-2	0.0039	.	.	.	150 g chips
SRM 131g	0.00353	0.0004255	.	.	150 g chips
IARM 27D	0.003	0.0008	0.006	0.0003	100 g chips
TH 1012-5	0.0026	0.0044	.	0.0025	100 g chips
JSS 1207-1	0.00245	.	.	.	150 g chips
TH 1045-3	0.0024	0.0043	.	0.0047	100 g chips
TH 1045D	0.0023	0.0043	.	0.0046	40 mm Ø x 40 mm disc
NCS NS11014	0.0019	0.005	.	.	100 g chips
TH 1043-3	0.0019	0.0008	.	0.0017	100 g chips
NCS NS11012	0.0016	0.0063	.	.	100 g chips
NCS NS28034	0.0016	0.0058	.	.	100 g chips
IARM 27C	0.0012	0.0021	0.045	0.0005	100 g chips
JSS 1205-1	0.00105	.	.	.	150 g chips
NCS NS28033	0.00065	0.00045	.	.	100 g chips
JSS 1201-3	0.00047	.	.	.	150 g chips
DH SE26-10	0.00038	<0.0004	0.0120	0.00026	50 g (RM) chips

Number	Carbon	Sulfur	Oxygen	Nitrogen	Units
--------	--------	--------	--------	----------	-------

## RM C, S, N IN STEEL

Number	C	S	N	Size	Form
BS CSN 3	0.892	0.0035	0.0047	500 g	1 g rods
DH E2113	0.5876	0.0007	0.0035	50 g	chips
DH E2182	0.559	0.0234	.	50 g	chips
BS CSN 2-2	0.548	0.028	0.076	500 g	1 g rods
BS CSN 2-1	0.476	0.034	0.064	500 g	1 g rods
DH E2184	0.4433	0.0152	.	50 g	chips
DH E2202	0.4017	0.0457	.	50 g	chips
DH E2137	0.1714	0.0013	0.0121	50 g	chips
DH E2172	0.1611	0.0147	.	50 g	chips
DH E2122	0.1599	0.0016	0.0078	50 g	chips
DH E2201	0.1492	0.0048	.	50 g	chips
DH E2106	0.1406	0.0277	0.0063	50 g	chips
DH E2324	0.1318	0.0009	0.0145	50 g	chips
DH E2121	0.109	0.00068	0.01	50 g	chips
DH E2116	0.0961	0.0102	0.0086	50 g	chips
DH E2317	0.0795	0.0014	.	50 g	chips
DH E2318	0.0793	.	.	50 g	chips
DH E2320	0.0777	0.0028	.	50 g	chips
BS CSN A	0.068	0.305	0.0081	100 g	chips
DH E2326	0.0637	0.0013	.	50 g	chips
DH E2322	0.0609	0.0009	.	50 g	chips
DH E2135	0.0502	0.0083	0.0019	50 g	chips
DH E2204	0.0449	0.0279	0.0037	50 g	chips
DH E2162	0.0369	0.0007	0.0032	50 g	chips
BS CSN 4	0.011	0.0008	0.026	500 g	1 g rods
DH E2156	0.00483	0.01515	.	50 g	chips
DH E2154	.	0.0472	.	50 g	chips
DH E2126	.	.	0.0153	50 g	chips

## CRM OXYGEN AND NITROGEN IN STEEL

Number	Oxygen	Nitrogen	Size	Form
BAM 029-1	0.0312	0.0083	100 g	3 rods, 8 mm Ø x 80 mm
CMSI 3031	0.0214	.	13 g	0.64 g balls
JK 35	0.0198	.	1 rod	10 mm Ø x 500 mm
NCS NS22007	0.0133	0.0118	50 g	1 g balls
NCS NS22010	0.0115	0.0025	50 g	1 g balls
BAM 028-1	0.0113	0.0029	100 g	3 rods, 8 mm Ø x 80 mm
BCS 318B *	0.0103	.	100 g	1 rod, 12.7 mm Ø x 127 mm
BCS 318A *	0.0096	.	100 g	2 rods, 6.35 mm Ø x 95 mm
NCS NS22009	0.0088	0.0032	50 g	1 g balls
BAM 027-1	0.0084	0.0157	100 g	3 rods, 8 mm Ø x 80 mm
NCS NS22005	0.0074	0.0351	50 g	1 g balls
HRT 500-644	0.0069	0.0064	100 g (RM)	1 g pins, RM
JK 34	0.0068	.	1 rod	8 mm Ø x 500 mm each
CMSI 3033 *	0.0064	0.0184	20 g	1 g balls
NCS NS22006	0.0048	0.0454	50 g	1 g balls
JK 32	0.0028	.	1 rod	10 mm Ø x 500 mm each
BAM 026-2	0.0025	0.0042	100 g	3 rods, 8 mm Ø x 80 mm
NCS NS20035	0.00229	0.01012	65 g	5.5 mm Ø x 300 mm stick
JK 31	0.0015	.	1 rod	8 mm Ø x 500 mm each
ECRM 099-1	0.0008	0.0078	100 g	1 g balls, Gold Plated
NCS NS14001	.	0.0081	100 g	chips
NCS NS14003	.	0.0048	100 g	chips
NCS NS14002	.	0.0040	100 g	chips

\* Clearance Sale Item

## CRM HYDROGEN IN STEEL

Number	H	C	S	O	N	Size	Form
CMSI 3012-3	0.00065	.	.	.	.	40 g	2 g balls
GBW 02607-2A	0.00047	.	.	.	.	40 g	2 g balls
CMSI 3013	0.00045	.	.	.	.	20 g	1 g balls
BS HON-T	0.00027	0.050	0.0040	0.0044	0.0365	100 g	1 g pins
CMSI 3016-1	0.00024	.	.	.	.	40 g	2 g balls
JSS GS 1D	0.00016	.	.	0.00354	(0.0200)	8 rods	5 mm Ø x 230 mm

## CRM GASES IN TOOL STEEL POWDER

Number	certified analysis				informational analysis				
	C	S	N	O	Cr	Mo	Si	V	W
18X D7	2.32	0.0111	0.0124	0.072	12	1	.	4	.
18X HCX	1.555	0.0103	0.0111	0.141	22	3	1	2	3
18X M3/2	0.994	0.0166	0.0269	0.105	4	6	.	3	6
18X M3/2-D	0.992	0.0178	0.042	0.41	4	6	.	3	6
18X H13	0.344	0.0080	0.0115	0.063	5	1	1	1	.

## CRM STEEL BALLS - CLEARANCE SALE ITEMS

Number	analysis listed in mg/kg					250 balls
	Size/mm	Weight	g/ball	Carbon	Sulfur	
SKF C-S 500-1	3.97	0.2545	±0.0001	1.01	0.0212	
SKF C-S 600-1	5.00	0.5086	±0.0002	0.995	0.0212	

These CRMs are fully protected against oxidation and contamination by gold plating. The weight is taken before gold plating.

## CRM CAST IRON CHIPS

Number	C	S	N	Mn	P	Si	As	Ti	Units
TH 1049-2	4.823	0.0022	.	.	.	.	.	.	100 g
JSS 102-8	4.71	0.0353	0.0030	0.326	0.103	0.257	.	0.0255	150 g
VS CH11/2	4.50	0.030	.	.	.	.	.	.	100 g
NCS HC18007	4.17	0.0233	.	0.348	0.078	1.03	0.017	.	100 g
NCS HC18017	4.14	0.046	.	0.567	0.153	0.751	0.065	.	100 g
NCS HC18008	4.13	0.023	.	0.348	0.078	1.02	0.016	.	100 g
GBW 01113C	4.11	0.054	.	.	.	.	.	.	150 g
NCS HC28055	4.04	0.0095	.	0.128	0.055	1.40	.	.	100 g
NCS HC18018	4.02	0.036	.	0.856	0.056	1.73	0.027	.	100 g
NCS HC93001	4.01	0.069	.	1.15	0.097	1.49	.	.	100 g
NCS HC18015	4.01	0.046	.	0.908	0.136	1.09	0.039	.	100 g
NCS HC18004	4.00	0.023	.	0.26	0.11	0.796	0.095	.	100 g
NCS NS56003	3.87	0.044	.	.	.	.	.	.	150 g
ECRM 485-3	3.5	0.15	0.008	.	.	.	.	.	100 g
CTIF FB 10 *	3.459	0.173	.	.	.	.	.	.	100 g
TH 1050	3.424	0.143	.	.	.	.	.	.	100 g
ECRM 492-1	3.258	0.0854	0.0048	.	.	.	.	.	100 g
CTIF FB 11/2	3.15	0.0842	.	.	.	.	.	.	100 g
BS CE 204 *	3.10	0.040	.	.	.	.	.	.	150 g
BS CE 216 *	.	0.043	.	.	.	.	.	.	150 g
BS CE 219 *	.	0.038	.	.	.	.	.	.	150 g
BS CE 217 *	.	0.029	.	.	.	.	.	.	150 g

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

# = class, where 1 = CRM and 2 = RM analysis listed in mg/kg unless otherwise noted

#	Number	Material	Sulfur	Oxygen	Nitrogen	Hydrogen	Carbon	Size & Form
2	US 1004	Al-6Mg Aluminum Alloy	.	.	.	0.23	.	rod, 12 mm Ø x 250 mm
2	US 1003	Al-1Mg Aluminum Alloy	.	.	.	0.23	.	rod, 12 mm Ø x 250 mm
2	US 1001	Al-6Cu Aluminum Alloy	.	.	.	0.18	.	rod, 12 mm Ø x 250 mm
2	US 1002	Al-6Cu Aluminum Alloy	.	.	.	0.16	.	rod, 12 mm Ø x 250 mm
1	IMN Cu 90-1	Copper	83.7	.	.	.	.	250 g chips
1	IMN Cu 50-1	Copper	49.6	.	.	.	.	250 g chips
1	IMN Cu S-20	Copper	23.1	.	.	.	.	250 g chips
1	IMN Cu S-10	Copper	7.5	.	.	.	.	250 g chips
1	IMN Cu 600/1	Copper	.	581	.	.	.	150 g of rod 5 mm Ø x 11.5 mm
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	IMN Cu 300	Copper	.	258	.	.	.	150 g of rod 5 mm Ø x 11.5 mm
2	BAM 379/2	Copper	.	212	.	.	.	disc, 40 mm Ø x 30 mm
1	IMN Cu 100/5	Copper	.	163.7	.	.	.	200 g of rod 20 mm Ø x 11.5 mm
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	IMN Cu 100	Copper	.	123	.	.	.	150 g of rod 5 mm Ø x 11.5 mm
2	BAM 379/1	Copper	.	38	.	.	.	disc, 40 mm Ø x 30 mm
1	NCS NS41003	Copper	.	8.5	.	.	.	rod, 23 g
1	NCS NS41004	Copper	.	4.6	.	.	.	rod, 23 g
1	IMN Cu 10/1	Copper	.	3.5	.	.	.	150 g of rod 5 mm Ø x 11.5 mm
1	BCR 054R	Copper	.	0.47	.	.	.	rod, 7 mm Ø x 50 mm
1	BCR 055	Lead	.	1.0	.	.	.	disc, 30 mm Ø x 9 mm
1	BCR 099	Nickel	.	8.4	1.1	.	.	25 2 g cubes
1	IMN Ni-1	Nickel	31	.	.	.	1260	100 g chips
1	IMN Ni-2	Nickel	149	.	.	.	128	100 g chips
1	IMN Ag150N	Silver	.	.	155.4	.	.	Cubes 100 g of 5.5 mm Ø x 5 mm
1	IMN Ag2N	Silver	.	.	2.3	.	.	195 g of rod 3.9 mm Ø x 100 m
1	IMN Ag10/1	Silver	.	11	.	.	.	2 rods, 6 mm Ø x 100 mm
1	BCR 102	Tungsten Carbide	.	185	.	.	.	2 to 3 grams in sealed bottles
1	NCS NS51001	Tungsten Carbide	.	.	.	.	6.10%	100 g powder

#	Number	Material	Sulfur	Oxygen	Nitrogen	Hydrogen	Carbon	Size & Form
---	--------	----------	--------	--------	----------	----------	--------	-------------

**CRM TITANIUM** \* Provisional Analysis

Number	H	C	N	O	S	Units
IARM 271A	0.013	0.026	0.012	0.16	(0.002)	65 g chips
IARM 262A	0.0072	0.012	0.008	0.094	(0.002)	65 g chips
IARM 269A	0.0059	0.015	0.0039	0.104	(0.002)	65 g chips
IARM 312A	0.0049	0.004	0.0023	0.066	(0.001)	65 g chips
IARM 297A	0.0045	0.014	0.008	0.109	(0.001)	65 g chips
IARM 314A	0.004	0.008	0.0034	0.155	.	65 g chips
IARM 286A	0.0039	0.010	0.010	0.089	(0.001)	65 g chips
IARM 175C	0.0038	0.014	0.0081	0.150	.	65 g chips
IARM 285A	0.0038	0.007	0.0043	0.076	(0.0004)	65 g chips
IARM 176B	0.0036	0.010	0.0051	0.109	.	65 g chips
IARM 178B	0.0028	0.030	0.008	0.157	(0.001)	65 g chips
IARM 174C	0.0027	0.0057	0.004	0.34	(0.0005)	65 g chips
IARM 261A	0.0023	0.007	0.007	0.10	(0.001)	65 g chips
IARM 311A	0.0021	0.009	0.012	0.083	.	65 g chips
IARM 300A *	0.0019	0.006	0.004	0.16	.	65 g chips
IARM 174B	0.0018	0.007	0.013	0.335	.	65 g chips
IARM 315A	0.0016	0.011	0.0052	0.099	.	65 g chips
IARM 280A	0.0015	0.005	0.0014	0.19	(0.001)	65 g chips
IARM 177C	0.0014	0.005	0.0022	0.107	.	65 g chips
BCR 318	0.00122	.	.	.	.	100 discs, 7 mm Ø x 1 mm
IARM 303A	0.0011	0.011	0.0069	0.134	.	65 g chips
NCS NS51001	.	6.10	.	.	.	100 g powder
GBW 02601	.	.	0.0170	.	.	35 g chips
BCR 024B	.	.	0.0117	0.0608	.	25 0.4 g cubes
BCR 024C	.	.	0.0117	0.0608	.	25 0.2 g cubes
BCR 059B	.	.	.	0.1750	.	25 0.2 g cubes
BCR 059A	.	.	.	0.0750	.	disc, 26 mm Ø x 9 mm
BCR 102	.	.	.	0.0185	.	2 to 3 grams

For more choices, please visit the Other Chips & Powders Catalog.

**CRM FERROMANGANESE** 400 g units

Number	Material	C	S
CKD 240	75% Mn, 15% Fe Carbide	3.86	0.0013

**CRM IRON ORE**

Number	N	O	Units
JK 47	0.0067	1.09	35 g

**RM PURITY NICKEL POWDER**

certified analysis listed in mg/kg 100 g units

Number	Al	C	Cr	Cu	Fe	Mn	Mo	P	Pb	S	Si
BS HPN-1	70	268	22	2	202	2	3	5	0.2	4	6

continued informational values

Number	Ag	As	B	Ba	Be	Bi	Ca	Cd	Co	Ga	H	In	Mg	N	Na	O	Sb	Se	Sn	Te	Ti	Tl	V	Zn
BS HPN-1	<0.1	<0.5	<2	<1	<1	<0.2	3	<0.1	<2	<0.5	(70)	<0.2	1	17	4	1400	<0.1	<0.2	<1	<0.2	<1	<0.1	<1	<1