National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

SCOPE OF ACCREDITATION

Laboratory Name	SCIENTIFIC SERVICES, TATA STEEL LIMITED, BISTUPUR, JAMSHEDPUR, EAST SINGHBHUM, JHARKHAND , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-8250	Page No. :	1 / 29
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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
Permanent Facility					
1	CHEMICAL- METALS & ALLOYS	Cast Iron	Al	ASTM E 1999: 2018	0.001 % to 1.5 %
2	CHEMICAL- METALS & ALLOYS	Cast Iron	Al	IS 15338 RA 2018: 2003	0.001 % to 1.5 %
3	CHEMICAL- METALS & ALLOYS	Cast Iron	C	ASTM E 1999: 2018	1.90 % to 5.0 %
4	CHEMICAL- METALS & ALLOYS	Cast Iron	C	IS 15338 RA 2018: 2003	1.90 % to 5.0 %
5	CHEMICAL- METALS & ALLOYS	Cast Iron	Cr	ASTM E 1999: 2018	0.003 % to 1.5 %
6	CHEMICAL- METALS & ALLOYS	Cast Iron	Cr	IS 15338 RA 2018: 2003	0.003 % to 1.5 %
7	CHEMICAL- METALS & ALLOYS	Cast Iron	Cr	ASTM E322: 2012	0.005 % to 2.0 %
8	CHEMICAL- METALS & ALLOYS	Cast Iron	Cr	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 2.0 %
9	CHEMICAL- METALS & ALLOYS	Cast Iron	Cu	ASTM E 1999: 2018	0.01 % to 0.50 %
10	CHEMICAL- METALS & ALLOYS	Cast Iron	Cu	IS 15338 RA 2018: 2003	0.01 % to 0.50 %
11	CHEMICAL- METALS & ALLOYS	Cast Iron	Cu	ASTM E 322: 2012	0.005 % to 1.0 %
12	CHEMICAL- METALS & ALLOYS	Cast Iron	Cu	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 1.0 %
13	CHEMICAL- METALS & ALLOYS	Cast Iron	Mn	ASTM E1999: 2018	0.03 % to 18.0 %

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
14	CHEMICAL- METALS & ALLOYS	Cast Iron	Mn	IS 15338 RA 2018: 2003	0.03 % to 18.0 %
15	CHEMICAL- METALS & ALLOYS	Cast Iron	Mn	ASTM E322: 2012	0.005 % to 2.0 %
16	CHEMICAL- METALS & ALLOYS	Cast Iron	Mn	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 2.0 %
17	CHEMICAL- METALS & ALLOYS	Cast Iron	Mo	ASTM E 1999: 2018	0.01 % to 1.2 %
18	CHEMICAL- METALS & ALLOYS	Cast Iron	Mo	IS 15338 RA 2018: 2003	0.01 % to 1.2 %
19	CHEMICAL- METALS & ALLOYS	Cast Iron	Mo	ASTM E322: 2012	0.005 % to 1.5 %
20	CHEMICAL- METALS & ALLOYS	Cast Iron	Mo	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 1.5 %
21	CHEMICAL- METALS & ALLOYS	Cast Iron	Ni	ASTM E 1999: 2018	0.02 % to 15 %
22	CHEMICAL- METALS & ALLOYS	Cast Iron	Ni	IS 15338 RA 2018: 2003	0.02 % to 15 %
23	CHEMICAL- METALS & ALLOYS	Cast Iron	Ni	ASTM E322: 2012	0.005 % to 2.5 %
24	CHEMICAL- METALS & ALLOYS	Cast Iron	Ni	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 2.5 %
25	CHEMICAL- METALS & ALLOYS	Cast Iron	P	ASTM E 1999: 2018	0.002 % to 0.50 %
26	CHEMICAL- METALS & ALLOYS	Cast Iron	P	IS 15338 RA 2018: 2003	0.002 % to 0.50 %

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27	CHEMICAL- METALS & ALLOYS	Cast Iron	P	ASTM E322: 2012	0.005 % to 0.75 %
28	CHEMICAL- METALS & ALLOYS	Cast Iron	P	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 0.75 %
29	CHEMICAL- METALS & ALLOYS	Cast Iron	S	ASTM E 1999: 2018	0.002 % to 0.20 %
30	CHEMICAL- METALS & ALLOYS	Cast Iron	S	IS 15338 RA 2018: 2003	0.002 % to 0.20 %
31	CHEMICAL- METALS & ALLOYS	Cast Iron	S	ASTM E322: 2012	0.005 % to 0.15 %
32	CHEMICAL- METALS & ALLOYS	Cast Iron	S	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 0.15 %
33	CHEMICAL- METALS & ALLOYS	Cast Iron	Si	ASTM E1999: 2018	0.10 % to 5.0 %
34	CHEMICAL- METALS & ALLOYS	Cast Iron	Si	IS 15338 RA 2018: 2003	0.10 % to 5.0 %
35	CHEMICAL- METALS & ALLOYS	Cast Iron	Si	ASTM E 322: 2012	0.005 % to 3.5 %
36	CHEMICAL- METALS & ALLOYS	Cast Iron	Si	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 3.5 %
37	CHEMICAL- METALS & ALLOYS	Cast Iron	Ti	ASTM E 1999: 2018	0.003 % to 0.12 %
38	CHEMICAL- METALS & ALLOYS	Cast Iron	Ti	IS 15338 RA 2018: 2003	0.003 % to 0.12 %
39	CHEMICAL- METALS & ALLOYS	Cast Iron	Ti	ASTM E 322: 2012	0.005 % to 0.20 %

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40	CHEMICAL- METALS & ALLOYS	Cast Iron	Ti	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 0.20 %
41	CHEMICAL- METALS & ALLOYS	Cast Iron	V	ASTM E 1999: 2018	0.008 % to 3.0 %
42	CHEMICAL- METALS & ALLOYS	Cast Iron	V	IS 15338 RA 2018: 2003	0.008 % to 3.0 %
43	CHEMICAL- METALS & ALLOYS	Cast Iron	V	ASTM E322: 2012	0.005 % to 0.25 %
44	CHEMICAL- METALS & ALLOYS	Cast Iron	V	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 0.25 %
45	CHEMICAL- METALS & ALLOYS	Ferro Boron	B	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	10 % to 20 %
46	CHEMICAL- METALS & ALLOYS	Ferro Boron, Ferro Chrome, Ferro Manganese, Ferro Molybdenum, Ferro Niobium, Ferro Phosphorus, Ferro Silicon, Ferro Titanium, Ferro Vandium, Silicon Manganese	C	TATA STEEL METHOD SS/CHEM/003 Rev 04: 2018	0.010 % to 10 %
47	CHEMICAL- METALS & ALLOYS	Ferro Chrome	Cr	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	50 % to 75 %
48	CHEMICAL- METALS & ALLOYS	Ferro Chrome	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.10 %

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49	CHEMICAL- METALS & ALLOYS	Ferro Chrome	Si	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5.0 %
50	CHEMICAL- METALS & ALLOYS	Ferro Chrome	Ti	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.50 %
51	CHEMICAL- METALS & ALLOYS	Ferro Chrome, Ferro Manganese, Ferro Molybdenum, Ferro Niobium, Ferro Silicon, Ferro Titanium, Ferro Vandium, Silicon Manganese	S	TATA STEEL METHOD SS/CHEM/003 Rev No. 04: 2018	0.001 % to 0.50 %
52	CHEMICAL- METALS & ALLOYS	Ferro Manganese	Mn	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	60 % to 90 %
53	CHEMICAL- METALS & ALLOYS	Ferro Manganese	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.50 %
54	CHEMICAL- METALS & ALLOYS	Ferro Manganese	Si	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 4.0 %
55	CHEMICAL- METALS & ALLOYS	Ferro Manganese	Ti	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.50 %
56	CHEMICAL- METALS & ALLOYS	Ferro Molybdenum	Mo	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	40 % to 80 %
57	CHEMICAL- METALS & ALLOYS	Ferro Niobium	Nb	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	50 % to 75 %

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58	CHEMICAL- METALS & ALLOYS	Ferro Niobium	P	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.01 % to 1.0 %
59	CHEMICAL- METALS & ALLOYS	Ferro Phosphorus	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	15 % to 30 %
60	CHEMICAL- METALS & ALLOYS	Ferro Silicon	Al	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.01 % to 2.0 %
61	CHEMICAL- METALS & ALLOYS	Ferro Silicon	Si	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	60 % to 80 %
62	CHEMICAL- METALS & ALLOYS	Ferro Silicon	Ti	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.01 % to 0.15 %
63	CHEMICAL- METALS & ALLOYS	Ferro Titanium	Si	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 2.0 %
64	CHEMICAL- METALS & ALLOYS	Ferro Titanium	Ti	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	30 % to 75 %
65	CHEMICAL- METALS & ALLOYS	Ferro Vanadium	P	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.01 % to 1.0 %
66	CHEMICAL- METALS & ALLOYS	Ferro Vanadium	V	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	35 % to 85 %
67	CHEMICAL- METALS & ALLOYS	Iron	C	IS 228 (Part 20) RA 2014: 2003	2.0 % to 5.0 %

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68	CHEMICAL- METALS & ALLOYS	Iron	S	IS 228 (Part 20) RA 2014: 2003	0.001 % to 0.35 %
69	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Al	IS 8811 RA 2018: 1998	0.001 % to 0.15 %
70	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Al	ASTM E415: 2017	0.001 % to 0.15 %
71	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	As	IS 8811 RA 2018: 1998	0.001 % to 0.20 %
72	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	As	ASTM E415: 2017	0.001 % to 0.20 %
73	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	B	IS 8811 RA 2018: 1998	0.0001 % to 0.007 %
74	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	B	ASTM E415: 2017	0.0001 % to 0.007 %
75	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	C	IS 8811 (RA 2018): 1998	0.002 % to 1.5 %
76	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	C	ASTM E415: 2017	0.002 % to 1.5 %
77	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ca	IS 8811 RA 2018: 1998	0.0002 % to 0.01 %
78	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ca	ASTM E 415: 2017	0.0002 % to 0.01 %
79	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Co	IS 8811 RA 2018: 1998	0.001 % to 0.20 %
80	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Co	ASTM E 415: 2017	0.001 % to 0.20 %
81	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Cr	IS 8811 RA 2018: 1998	0.001 % to 2.0 %

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
82	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Cr	ASTM E415: 2017	0.001 % to 2.0 %
83	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Cu	IS 8811 RA 2018: 1998	0.001 % to 0.50 %
84	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Cu	ASTM E415: 2017	0.001 % to 0.50 %
85	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Mn	IS 8811 (RA 2018): 1998	0.005 % to 2.0 %
86	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Mn	ASTM E415: 2017	0.005 % to 2.0 %
87	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Mo	IS 8811 RA 2018: 1998	0.001 % to 2.0 %
88	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Mo	ASTM E415: 2017	0.001 % to 2.0 %
89	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	N	IS 228 (Part 23) RA 2014: 2003	0.001 % to 0.05 %
90	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Nb	IS 8811 RA 2018: 1998	0.001 % to 0.076 %
91	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Nb	ASTM E415: 2017	0.001 % to 0.076 %
92	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ni	IS 8811 RA 2018: 1998	0.001 % to 2.0 %
93	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ni	ASTM E 415: 2017	0.001 % to 2.0 %
94	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	P	IS 8811(RA 2018): 1998	0.001 % to 0.10 %
95	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	P	ASTM E415: 2017	0.001 % to 0.10 %

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
96	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Pb	IS 8811 RA 2018: 1998	0.0002 % to 0.15 %
97	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Pb	ASTM E 415: 2017	0.0002 % to 0.15 %
98	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	S	IS 8811 (RA 2018): 1998	0.0005 % to 0.10 %
99	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	S	ASTM E415: 2017	0.0005 % to 0.10 %
100	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Sb	IS 8811 RA 2018: 1998	0.0003 % to 0.20 %
101	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Sb	ASTM E 415: 2017	0.0003 % to 0.20 %
102	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Si	IS 8811 (RA 2018): 1998	0.01 % to 2.0 %
103	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Si	ASTM E415: 2017	0.01 % to 2.0 %
104	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Sn	IS 8811 RA 2018: 1998	0.001 % to 0.40 %
105	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Sn	ASTM E 415: 2017	0.001 % to 0.40 %
106	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ti	IS 8811 RA 2018: 1998	0.001 % to 0.25 %
107	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Ti	ASTM E415: 2017	0.001 % to 0.25 %
108	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	V	IS 8811 RA 2018: 1998	0.001 % to 0.50 %
109	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	V	ASTM E415: 2017	0.001 % to 0.50 %

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110	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	W	IS 8811 RA 2018: 1998	0.001 % to 0.20 %
111	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	W	ASTM E415: 2017	0.001 % to 0.20 %
112	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Zr	IS 8811 RA 2018: 1998	0.0001 % to 0.15 %
113	CHEMICAL- METALS & ALLOYS	Plain Carbon and Low Alloy Steel	Zr	ASTM E 415: 2017	0.0001 % to 0.15 %
114	CHEMICAL- METALS & ALLOYS	Silico Manganese	Mn	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	50 % to 70 %
115	CHEMICAL- METALS & ALLOYS	Silico Manganese	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.50 %
116	CHEMICAL- METALS & ALLOYS	Silico Manganese	Si	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	12 % to 25 %
117	CHEMICAL- METALS & ALLOYS	Silico Manganese	Ti	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.50 %
118	CHEMICAL- METALS & ALLOYS	Stainless Steel	As	IS 9879 RA 2015: 1998	0.01 % to 0.25 %
119	CHEMICAL- METALS & ALLOYS	Stainless Steel	As	ASTM E 1086: 2014	0.01 % to 0.25 %
120	CHEMICAL- METALS & ALLOYS	Stainless Steel	C	IS 9879 RA 2015: 1998	0.005 % to 0.30 %
121	CHEMICAL- METALS & ALLOYS	Stainless Steel	C	ASTM E1086: 2014	0.005 % to 0.30 %

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122	CHEMICAL- METALS & ALLOYS	Stainless Steel	Co	IS 9879 RA 2015: 1998	0.05 % to 0.10 %
123	CHEMICAL- METALS & ALLOYS	Stainless Steel	Co	ASTM E 1086: 2014	0.05 % to 0.10 %
124	CHEMICAL- METALS & ALLOYS	Stainless Steel	Cr	IS 9879 RA 2015: 1998	5.00 % to 23.00 %
125	CHEMICAL- METALS & ALLOYS	Stainless Steel	Cr	ASTM E 1086: 2014	5.00 % to 23.00 %
126	CHEMICAL- METALS & ALLOYS	Stainless Steel	Cu	IS 9879 RA 2015: 1998	0.01 % to 0.50 %
127	CHEMICAL- METALS & ALLOYS	Stainless Steel	Cu	ASTM E 1086: 2014	0.01 % to 0.50 %
128	CHEMICAL- METALS & ALLOYS	Stainless Steel	Mn	IS 9879 RA 2015: 1998	0.01 % to 5.0 %
129	CHEMICAL- METALS & ALLOYS	Stainless Steel	Mn	ASTM E1086: 2014	0.01 % to 5.0 %
130	CHEMICAL- METALS & ALLOYS	Stainless Steel	Mo	IS 9879 RA 2015: 1998	0.01 % to 3.0 %
131	CHEMICAL- METALS & ALLOYS	Stainless Steel	Mo	ASTM E 1086: 2014	0.01 % to 3.0 %
132	CHEMICAL- METALS & ALLOYS	Stainless Steel	Nb	IS 9879 RA 2015: 1998	0.010 % to 1.0 %
133	CHEMICAL- METALS & ALLOYS	Stainless Steel	Nb	ASTM E 1086: 2014	0.010 % to 1.0 %
134	CHEMICAL- METALS & ALLOYS	Stainless Steel	Ni	IS 9879 RA 2015: 1998	2.00 % to 15.00 %
135	CHEMICAL- METALS & ALLOYS	Stainless Steel	Ni	ASTM E 1086: 2014	2.00 % to 15.00 %

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136	CHEMICAL- METALS & ALLOYS	Stainless Steel	P	IS 9879 RA 2015: 1998	0.003 % to 0.15 %
137	CHEMICAL- METALS & ALLOYS	Stainless Steel	P	ASTM E1086: 2014	0.003 % to 0.15 %
138	CHEMICAL- METALS & ALLOYS	Stainless steel	Pb	IS 9879 RA 2015: 1998	0.004 % to 0.50 %
139	CHEMICAL- METALS & ALLOYS	Stainless Steel	Pb	ASTM E 1086: 2014	0.004 % to 0.50 %
140	CHEMICAL- METALS & ALLOYS	Stainless Steel	S	IS 9879 RA 2015: 1998	0.002 % to 0.10 %
141	CHEMICAL- METALS & ALLOYS	Stainless Steel	S	ASTM E1086: 2014	0.002 % to 0.10 %
142	CHEMICAL- METALS & ALLOYS	Stainless Steel	Si	IS 9879 RA 2015: 1998	0.01 % to 2.0 %
143	CHEMICAL- METALS & ALLOYS	Stainless Steel	Si	ASTM E 1086: 2014	0.01 % to 2.0 %
144	CHEMICAL- METALS & ALLOYS	Steel	C	IS 228 (Part 20) RA 2014: 2003	0.005 % to 2.0 %
145	CHEMICAL- METALS & ALLOYS	Steel	C	TATA STEEL Method SS/CHEM/003 Rev 04: 2018	0.001 % to 2.0 %
146	CHEMICAL- METALS & ALLOYS	Steel	N	IS 228 (Part 24) RA 2014: 2003	0.001 % to 0.03 %
147	CHEMICAL- METALS & ALLOYS	Steel	O	IS 228 (Part 18) RA2018: 1998	0.0005 % to 0.03 %
148	CHEMICAL- METALS & ALLOYS	Steel	S	IS 228 (Part 20) RA 2014: 2003	0.001 % to 0.35 %

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149	CHEMICAL- METALS & ALLOYS	Steel	S	TATA STEEL Method SS/CHEM/003 Rev 04: 2018	0.0005 % to 0.35 %
150	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 25 %
151	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 15 %
152	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	1.0 % to 25 %
153	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 25 %
154	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 4 %
155	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	Cr2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	1.0 % to 60 %
156	CHEMICAL- ORES & MINERALS	Chrome Ore and High Chrome Refractories	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.25 % to 20 %
157	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 20 %
158	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 2.0 %

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159	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 3.0 %
160	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.02 % to 1.0 %
161	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 0.25 %
162	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 40 %
163	CHEMICAL- ORES & MINERALS	Coal and Coke Ash	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 1.0 %
164	CHEMICAL- ORES & MINERALS	Dunite	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5.0 %
165	CHEMICAL- ORES & MINERALS	Dunite	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 10 %
166	CHEMICAL- ORES & MINERALS	Dunite	Cr2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 2 %
167	CHEMICAL- ORES & MINERALS	Dunite	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	3.0 % to 20 %
168	CHEMICAL- ORES & MINERALS	Dunite	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	20 % to 55 %

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
169	CHEMICAL- ORES & MINERALS	Dunite	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	20 % to 60 %
170	CHEMICAL- ORES & MINERALS	High Alumina Refractories	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 93.0 %
171	CHEMICAL- ORES & MINERALS	High Alumina Refractories	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
172	CHEMICAL- ORES & MINERALS	High Alumina Refractories	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
173	CHEMICAL- ORES & MINERALS	High Alumina Refractories	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 97 %
174	CHEMICAL- ORES & MINERALS	High Alumina Refractories	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 97 %
175	CHEMICAL- ORES & MINERALS	High Alumina Refractories	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 97 %
176	CHEMICAL- ORES & MINERALS	High Alumina Refractories	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 4 %
177	CHEMICAL- ORES & MINERALS	High MgO Refractories	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 93 %
178	CHEMICAL- ORES & MINERALS	High MgO Refractories	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %

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179	CHEMICAL- ORES & MINERALS	High MgO Refractories	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
180	CHEMICAL- ORES & MINERALS	High MgO Refractories	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 97 %
181	CHEMICAL- ORES & MINERALS	High MgO Refractories	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 97 %
182	CHEMICAL- ORES & MINERALS	High Silica Refractories	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 93 %
183	CHEMICAL- ORES & MINERALS	High Silica Refractories	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
184	CHEMICAL- ORES & MINERALS	High Silica Refractories	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
185	CHEMICAL- ORES & MINERALS	High Silica Refractories	MnO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 5 %
186	CHEMICAL- ORES & MINERALS	High Silica Refractories	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 97 %
187	CHEMICAL- ORES & MINERALS	High Silica Refractories	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 4 %
188	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	Al2O3	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.5 % to 40.0 %

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189	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	CaO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	22.0 % to 60.0 %
190	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.5 % to 60 %
191	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	Cr2O3	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.05 % to 1.0 %
192	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 60 %
193	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	Fe(T)	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.1 % to 60.0 %
194	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	K2O	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.002 % to 2.0 %
195	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	MgO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.50 % to 20.0 %
196	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 25 %
197	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	MnO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.02 % to 10.0 %
198	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	MnO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.02 % to 10 %

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199	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	P2O5	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	1.0 % to 6.0 %
200	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	S	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.1 % to 1.0 %
201	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	SiO2	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	1.0 % to 40.0 %
202	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.5 % to 50 %
203	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	TiO2	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.05 % to 6.0 %
204	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 60.0 %
205	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.5 % to 40 %
206	CHEMICAL- ORES & MINERALS	Iron and Steel Making Slags	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 6 %
207	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	Al2O3	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.05 % to 15.0 %
208	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	CaO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.5 % to 25.0 %

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209	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	Cr2O3	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 0.50 %
210	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	Fe(T)	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	30.0 % to 70.0 %
211	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	K2O	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.005 % to 1.0 %
212	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	MgO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.50 % to 20.0 %
213	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	MnO	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.10 % to 10.0 %
214	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	P2O5	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.05 % to 1.0 %
215	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	S	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.01 % to 3.0 %
216	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	SiO2	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.5 % to 20.0 %
217	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter and Pellet	TiO2	TATA STEEL Method SS/CHEM/002 Rev 05: 2018	0.05 % to 1.0 %
218	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %

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219	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 25 %
220	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	Cr2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 2 %
221	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	25 % to 75 %
222	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 10 %
223	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	MnO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5 %
224	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5.0 %
225	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 25 %
226	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet and Process Solid Materials	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.05 % to 4.0 %
227	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	Fe (Met)	IS/ISO 5416 RA 2013: 2006	0.10 % to 90.0 %
228	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	Fe (Met)	TATA STEEL Method SS/CHEM/011 Rev 05: 2018	0.10 % to 90.0 %

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229	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	Fe (T)	TATA STEEL Method SS/CHEM/012 Rev 05: 2018	0.10 % to 90 %
230	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	Fe (T)	ASTM E 246 RA 2015 Method B: 2010	0.10 % to 90 %
231	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	FeO	TATA STEEL Method SS/CHEM/010 Rev 07: 2018	0.10 % to 20.0 %
232	CHEMICAL- ORES & MINERALS	Iron Ore, Sinter, Pellet, Process Solid Materials	FeO	ASTM D 3872 RA 2011: 2005	0.10 % to 20.0 %
233	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 10 %
234	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
235	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 52 %
236	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	MnO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5.0 %
237	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	TiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 4.0 %
238	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 56 %

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239	CHEMICAL- ORES & MINERALS	Limestone, Dolomite and Allied Materials	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 15 %
240	CHEMICAL- ORES & MINERALS	Mn Ore	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 25 %
241	CHEMICAL- ORES & MINERALS	Mn Ore	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 5 %
242	CHEMICAL- ORES & MINERALS	Mn Ore	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 45 %
243	CHEMICAL- ORES & MINERALS	Mn Ore	Mn	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	5 % to 60 %
244	CHEMICAL- ORES & MINERALS	Mn Ore	P	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5 %
245	CHEMICAL- ORES & MINERALS	Mn Ore	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.25 % to 20 %
246	CHEMICAL- ORES & MINERALS	Olivine	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 5.0 %
247	CHEMICAL- ORES & MINERALS	Olivine	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.10 % to 10 %
248	CHEMICAL- ORES & MINERALS	Olivine	Cr2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 2 %

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249	CHEMICAL- ORES & MINERALS	Olivine	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	3.0 % to 20 %
250	CHEMICAL- ORES & MINERALS	Olivine	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	20 % to 55 %
251	CHEMICAL- ORES & MINERALS	Olivine	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	20 % to 60 %
252	CHEMICAL- ORES & MINERALS	Pyroxenite	Al2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 10 %
253	CHEMICAL- ORES & MINERALS	Pyroxenite	CaO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.2 % to 15 %
254	CHEMICAL- ORES & MINERALS	Pyroxenite	Cr2O3	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.1 % to 4 %
255	CHEMICAL- ORES & MINERALS	Pyroxenite	Fe (T)	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	0.01 % to 10 %
256	CHEMICAL- ORES & MINERALS	Pyroxenite	MgO	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	25 % to 40 %
257	CHEMICAL- ORES & MINERALS	Pyroxenite	SiO2	TATA STEEL Method SS/CHEM/005 Rev 04: 2018	25 % to 60 %
258	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	IS 1350 (Part 1) RA 2013: 1984	0.3 % to 70 %

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259	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	ASTM D 7582: 2015	0.3 % to 70 %
260	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	TATA STEEL Method SS/CHEM/007 Rev 06: 2018	0.3 % to 70 %
261	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	IS 1350 (Part 1) RA 2013: 1984	0.3 % to 70 %
262	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	TATA STEEL Method SS/CHEM/007 Rev 06: 2018	0.3 % to 70 %
263	CHEMICAL- SOLID FUELS	Coal and Coke	Ash	ASTM D 7582: 2015	0.3 % to 70 %
264	CHEMICAL- SOLID FUELS	Coal and Coke	VM	ASTM D 7582 : 2015	0.2 % to 50 %
265	CHEMICAL- SOLID FUELS	Coal and Coke	VM	TATA STEEL Method SS/CHEM/007 Rev 06: 2018	0.2 % to 50 %
266	CHEMICAL- SOLID FUELS	Coal and Coke	VM	IS 1350 (Part 1) RA 2013: 1984	0.2 % to 50 %
267	CHEMICAL- SOLID FUELS	Coke	Coke Reactivity Index (CRI)	IS 4023 RA 2013: 1991	10 % to 50 %
268	CHEMICAL- SOLID FUELS	Coke	Coke Strength after Reaction (CSR)	IS 4023 RA 2013: 1991	25 % to 90 %
269	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Cast Iron, Steel	Rockwell Hardness	ASTM E18 E1: 2017	20 HRBW to 100 HRBW

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270	MECHANICAL-MECHANICAL PROPERTIES OF METALS	High Strength Deformed Bars (TMT)	Bend	IS 1599 (RA 2017): 2012	Qualitative((Mandrel Dia.: 24,30,36,48,60,100,112,128,140 &160mm))
271	MECHANICAL-MECHANICAL PROPERTIES OF METALS	High Strength Deformed Bars (TMT)	Re-bend	IS 1786 (RA 2013): 2008	Qualitative((Mandrel Dia.: 32,40,72,96,120,150,168,192,216 &240 mm))
272	MECHANICAL-MECHANICAL PROPERTIES OF METALS	High Strength Deformed Steel Bar	Tensile Test (YS)	IS 1608 (Part 1): 2018	100 MPa to 800 MPa
273	MECHANICAL-MECHANICAL PROPERTIES OF METALS	High Strength Deformed steel Bars	Tensile Test(UTS)	IS 1608 Part 1: 2018	100 Mpa to 1000 Mpa
274	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Fines	Blaine Number	TATA STEEL Method SS/CRMT/034 Rev 02: 2018	1500 cm2/g to 6000 cm2/g
275	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Fines	Particle Size Analysis	ISO 13320: 2009	0.1 micron to 1000 micron
276	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Pellet	Cold Crushing Strength Test	IS 8625 RA 2014: 1986	25 Kg to 1000 Kg

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
277	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Pellet	Porosity	ASTM D 4404: 2018	10 % to 50 %
278	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Pellet	Swelling Index (SI)	IS 8624 RA 2017: 1995	5 % to 30 %
279	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Sinter	Reducibility Index (RI)	TATA STEEL Method SS/CRMT/011 Rev 03: 2018	40 % to 90 %
280	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Iron Ore Sinter	Reduction Degradation Index (RDI)	TATA STEEL Method SS/CRMT/010 Rev 03: 2018	10 % to 50 %
281	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel	Charpy Impact V-Notch	IS 1757 Part-1 : 2014	30 J to 300 J
282	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Brinell Hardness	IS 1500 (Part 1): 2013	150 HBW 10/3000 to 650 HBW 10/3000
283	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Brinell Hardness	ASTM E10 : 2017	150 HBW 10/3000 to 650 HBW 10/3000

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
284	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Rockwell Hardness	IS 1586 (Part 1): 2018	20 HRC to 70 HRC
285	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Rockwell Hardness	IS 1586 (Part 1): 2018	20 HRBW to 100 HRBW
286	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Rockwell Hardness	ASTM E18 E1: 2017	20 HRC to 70 HRC
287	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	ASTM E92: 2017	105 HV5 to 600 HV5
288	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	ASTM E92: 2017	200 HV30 to 600 HV30
289	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	IS 1501 (Part 1): 2013	105 HV5 to 600 HV5
290	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	IS 1501 (Part 1): 2013	200 HV30 to 600 HV30

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
291	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	ASTM E92: 2017	105 HV10 to 300 HV10
292	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel, Cast Iron	Vickers Hardness	IS 1501 (Part 1): 2013	105 HV10 to 300 HV10
293	MECHANICAL-METALLOGRAPHY TEST	Steel	Decarburization Depth	ASTM E 1077 (Cl. 7.2 & Cl. 7.3): 2014	Qualitative(0.02 mm – 1.0 mmMagnification – 100X)
294	MECHANICAL-METALLOGRAPHY TEST	Steel	Grain Size by Comparison Method	IS 4748 (RA 2017): 2009	Qualitative(ASTM 1 – 8Magnification – 100X)
295	MECHANICAL-METALLOGRAPHY TEST	Steel	Grain Size by Comparison Method	ASTM E112 : 2013	Qualitative(ASTM 1 – 8Magnification – 100X)
296	MECHANICAL-METALLOGRAPHY TEST	Steel	Grain Size by Planimetric Method	IS 4748 (RA 2017): 2009	Qualitative(ASTM 1-14Magnification – 100X)
297	MECHANICAL-METALLOGRAPHY TEST	Steel	Grain Size by Planimetric Method	ASTM E112 : 2013	Qualitative(ASTM 1-14Magnification – 100X)
298	MECHANICAL-METALLOGRAPHY TEST	Steel	Inclusion Rating by Comparison Method	IS 4163 (RA 2017): 2004	Qualitative(Severity levels 0 to 5.0 for inclusion types A, B, C and D (thin & thick series 100X))

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S.No	Discipline / Group	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing/ Limits of Detection
299	MECHANICAL-METALLOGRAPHY TEST	Steel	Inclusion Rating by Comparison Method	ASTM E45 Method A: 2018	Qualitative(Severity levels 0 to 5.0 for inclusion types A, B, C and D (thin & thick series 100X))
300	MECHANICAL-METALLOGRAPHY TEST	Steel, Cast Iron	Decarburization Depth	IS 6396 (Cl. 6) :2000 RA: 2018	Qualitative(0.02 mm – 1.0 mm Magnification – 100X)
301	MECHANICAL-METALLOGRAPHY TEST	Steel, Cast Iron, Other Alloys	Metallographic Examination by Microscopic Method	ASM (Vol#9): 2004	Qualitative(50X – 2000X)
302	MECHANICAL-METALLOGRAPHY TEST	Steel, Cast Iron, Other Alloys	Metallographic Examination by Scanning Electron Microscopic Method and Qualitative Analysis by Energy Dispersive Spectrometry	ASM Vol#9: 2004	Qualitative(10X – 100000X)
303	MECHANICAL-METALLOGRAPHY TEST	Steel, Cast Iron, Other Alloys	Metallographic Examination by Scanning Electron Microscopic Method and Qualitative Analysis by Energy Dispersive Spectrometry	ASTM E1508 12A: 2012	Qualitative(10X – 100000X)
304	MECHANICAL-METALLOGRAPHY TEST	Steel/ Cast Iron	Macro Etch Test by Visual Examination	ASTM E381 : 2017	Qualitative(Up to 10 X)