

Laboratory Times Marine Services, No. 07. M.G.J. Nagar, P.K. Salai, Karaikal, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7829

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Validity 11.09.2018 to 10.09.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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### CHEMICAL TESTING

<b>I. ORES AND MINERALS</b>				
<b>1.</b>	<b>Iron Ore</b>	Total Moisture	IS 1493 (Part 1):1981	2.0% to 9.0%
		Iron	RA 2016	50.0% to 69.0%
		Silica		1.0 %to 12.0%
		Alumina		1.0% to 6.0%
		Phosphorous		0.010% to 0.12%
		Sulphur		0.005% to 0.015%
<b>2.</b>	<b>Barites</b>	Density	API SPEC 13 A 18 <sup>th</sup> Edition, Feb 2010	3.850 g/ml to 4.400 g/ml
		Water Soluble alkaline earth metals as Calcium		20 mg/kg to 250 mg/kg
		Residue greater than 75 microns	IS 1881 : 1984 RA 2015	0.3% to 4.0%
<b>II. SOLID FUELS</b>				
<b>1.</b>	<b>Coal</b>	Total Moisture	ISO 589 : 2008	4.0% to 38.0%
			ASTM D 3302/D3302M-17	
			IS 1350 (Part 1) : 1984 RA 2013 (Clause 6.3)	
		Moisture (Air Dry Basis)	IS 1350 (Part 1) : 1984 RA 2013 (Clause 6.3)	2.0% to 20.0 %
		Ash	ASTM D 3174- 12	5.0% to 40.0%
			IS 1350 (Part 1) : 1984 RA 2013	
		Volatile Matter (VM)	ASTM D 3175- 17	8.0 %to 50.0%
			IS 1350 (Part 1) : 1984 RA 2013	
	Fixed Carbon	ASTM D 3172- 13	By Calculation	
		IS 1350 (Part 1) : 1984 RA 2013		

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		Gross Calorific Value (GCV)	ASTM D 5865- 13 IS 1350 (Part 2) : 2017	2000 to 8000 kcal/kg
		Sulphur	IS 1350 (Part 3) : 1969 RA 2015	0.01% to 8.0%
2.	Coke	Total Moisture	IS 1350 (Part 1) : 1984 RA 2013 (Clause 6.3)	0.5 % to 6.80%
		Moisture (Air Dry Basis)	IS 1350 (Part 1) : 1984 RA 2013 (Clause 6.3)	0.1% to 2.0%
		Ash	ASTM D 3174- 12 IS 1350 (Part 1) : 1984 RA 2013	0.05% to 4.0%
		Volatile Matter (VM)	ASTM D 3175- 17 IS 1350 (Part 1) : 1984 RA 2013	1.0% to 12.0%
		Fixed Carbon	ASTM D 3172- 13 IS 1350 (Part 1) : 1984 RA 2013	By Calculation
		Gross Calorific Value (GCV)	ASTM D 5865- 13 IS 1350 (Part 2) : 2017	2000 to 8800 kcal/kg
		Sulphur	IS 1350 (Part 3) : 1969 RA 2015	0.5 % to 8.0%

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