Laboratory	**Material Testing Group (MTG), A Unit of Defence Bioengineering and Electromedical Laboratory (DEBEL), (DRDO, Ministry of Defence), C.V. Raman Nagar, Bangalore, Karnataka**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Chemical Testing**	**Issue Date**	**31.10.2014**
Certificate Number	**T-1712**	**Valid Until**	**30.10.2016**
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	**AIR, GASES & ATMOSPHERE**			
1.	**Gaseous Pollutants excluding vehicular**	CO Gas Analysis	DEBEL/SOP/I/01/01 (based on Method of Air Sampling and Analysis) by Gas Analyser	(50 to 200000) ppb
		NOx-NH_3 Gas Analysis	DEBEL/SOP/I/02/01 (based onMethod of Air Sampling and Analysis) by Gas Analyser	(1.0 to 50000) ppb
		SOx-H_2S Gas Analysis	DEBEL/SOP/I/03/01 (based on Method of Air Sampling and Analysis) by Gas Analyser	(1to 10000) ppb
		Sulphur Dioxide Gas Analysis	IS 5182 (Part II): 2006 2nd Rev.	(25 to 1050) µg/m^3
		Nitrogen Dioxide Gas Analysis	IS 5182 (Part VI): 2006 1st Rev.	(420 to 750) µg/m^3
		Hydrogen Sulphide Gas Analysis	IS 5182 (Part VII) 1973 (RA: 2009)	(6 to 600) µg/ m^3

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Program Manager

Anuja Anand

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Gaseous Pollutants excluding vehicular	Volatile Organic Compounds (VOC) (a) Methanol (b) Acetone (c) Benzene (d) Toluene (e) Xylene (f) Methyl ethyl ketone (g) Ethyl acetate	DEBEL/SOP/I/7/01 by GC-FID	(0.001 to 500) ppm
		Ammonia Gas Analysis	DEBEL/SOP/I/08/02 (based Method of Air Sampling and Analysis) by Spectrophotometer	(0.7 to 21) $\mu g/m^3$
II.	**RUBBER & SYNTHETIC RUBBER**			
1.	**Vulcanized Rubber Compound**	Ash Content	ASTM D-297-93 (RA: 2006), Sec – 35	0.1% to 50 %
	Analysis of Vulcanized Rubber Compound	Determination of free Sulfur Content	ASTM D-297-93 (RA: 2006), Sec – 29	0.1 % to 25 %
		Determination of carbon Black	ASTM D-297-93 (RA: 2006), Sec – 38	0 to 60 %
		Determination of Percentage of Acetone Extract	ASTM D-297-93 (RA: 2006), Sec – 19	1 % to 10 %

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Vulcanized Rubber Compound	Determination of Percentage of Chloroform Extract	ASTM D-297-2006, Sec. 20	1 % to 8 %
	Analysis of Vulcanized Rubber Compound	Determination of Percentage of Total Extract	ASTM D-297-2006, Sec. 21	1% to 15 %
		Determination of Percentage of Alcoholic potash Extract	ASTM D-297-2006, Sec. 22	1 % to 5 %
		Determination of Percentage of Waxy Hydrocarbons Extract	ASTM D-297-2006, Sec. 24	0.1 % to 5 %
		Volume Change due to Effect of Water Insoluble and Mixed Liquids	ASTM D-471-2006, Sec. 8	-10 % to +200%
		Vapor Transmission of Volatile Liquids	ASTM D-814-9, 2005	(10 to 40) mg/s.m^2
		Flammability	ISO 8030: 1998 (E) Second edition 1995-12-15	(50 to 400) sec
		Resistance to penetration by water	ISO 1420: 2001 (E) Third edition 2001-07-15	Qualitative

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
III.	**COAL, COKE & OTHER SOLID FUELS**			
1.	**Charcoal Activated Carbon**	Moisture	IS 877:1989 (RA 2006), Sec - 4	1% w/w to 10 % w/w
		Ash content	IS 877:1989 (RA 2006), Sec 5	1% w/w to 10 % w/w
		Soluble in water	IS 877:1989 (RA 2006), Sec- 7	1% w/w to 15% w/w
		Soluble in acid	IS 877:1989 (RA 2006), Sec- 8	1% w/w to 18 % w/w
		pH	IS 877:1989 (RA 2006), Sec- 9	2 to 10
		Decolourisation	IS 877:1989 (RA 2006), Sec-11	1 mg/g to 300 mg/g
		Adsorption Capacity	IS 877:1989 (RA 2006), Sec-14	30 % to 70 %
		Chloride	IS 877:1989 (RA 2006), Sec- 16	1 % w/w to 14 % w/w
		Sulphate	IS 877:1989 (RA 2006), Sec-17	1% w/w to 10% w/w
		Cyanogens Compound	IS 877:1989 (RA 2006), Sec- 18	Qualitative
		Iodine Number	IS 2752: 1995 (RA 2006)	800 mg/g to1500 mg/g
		Surface area	IS 2752:1995 (RA 2006)	0.1 m^2/g to 1500 m^2/g

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N. Venkateswaran
Program Manager

Anuja Anand