Laboratory	**CSIR-National Botanical Research Institute, Rana Pratap Marg, Lucknow, Uttar Pradesh**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Chemical Testing**	**Issue Date**	**18.10.2016**
Certificate Number	**T-1381**	**Valid Until**	**17.10.2018**
Last Amended on	**-**	**Page**	**1 of 5**

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	**DRUGS AND PHARMACEUTICAL**			
1.	**(Herbal Drugs/ Plant Extract/Herbal Products/Plant Based Pharmaceuticals**	Macroscopic & Microscopic Identification of Herbal Drugs	API, (Part 1), Vol. VI, 233-242, 2008	Qualitative
		Characterization & Estimation of Marker Chemicals	IP, Vol. I, 2.4.14, Page 125-130,2007 (HPLC Analysis)	0.001 to 100 µg
		Characterization And Estimation of Marker Chemicals	IP, Vol. I, 2.4.17, Page 132-134,2007(HPTLC Analysis)	0.02 to 20 µg
		Qualitative Analysis/ Finger Print Analysis for Marker Chemicals	NBRI –SOP-202 (05) Issue. 03 Issue Dated. 30.04.2014 (LC-MS/MS)	Qualitative
		Characterization And Estimation of Marker Chemicals	NBRI –SOP-202 (33) Issue. 03 Issue Dated. 30.04.2014 (GCMS)	1 to 1000 Mg / Liter
		Determination of Carbon Isotopic Mass Ratio of Plant Materials	NBRI –SOP-202 (35) Issue. 03 Issue Dated. 30.04.2014 (IRMS)	(-)5 to (-) 35 Per Mil
		Ash Value	API, (Part 1), Vol. VI, 242-243, 2008	0.001 to 20%
		Tannins	AOAC ,9,110, page 187 ,1984	0.001 to 20 %
		Extractive Value (Alcohol And Water Soluble Extractive Value)	API, (Part 1), Vol. VI, 243, 2008	0.1 to 40 % 0.1 to 50 %
II.	**COSMETICS & ESSENTIAL OILS**			
1.	**Vegetable Oils**	Oil Content	IS 3579: 1966 (RA 2000)	0.01 to 75 %

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	Vegetable Oils	Color Value	IS 548 (Part 1): 1964 (RA 2000)	Qualitative (R – 0.1 to 70, Y – 0.1 to 70, B – 0.1 to 40 ,W – 0.1 to 3)
		Oil Content	NBRI –SOP-202 (34) Issue. 03, Issue Dated 30.04.2014 (TD- NMR)	0.2 % to 45 %
		Specific Gravity	IS 548 (Part 1)1964	0.5 to 02
		Refractive Index	IS 548 (Part 1)1964	1.3 % to 1.7 %
		Acid Value/FFA Content	IS 548 (Part 1): 1964	0.01 % to 60 %
		Characterization And Estimation of Fatty Acid Composition	IS 548(Part 3): 1973 (RA 2006) (GLC)	1 to 100 %
		Characterization And Estimation of Fatty Acid Composition	NBRI –SOP-202 (33) Issue. 03, Issue Dated. 30.04.2014 (GCMS)	1 to 1000 Mg /Liter
2.	**Essential Oils, Aroma Chemicals, Indian Attars & Fragrances**	Oil Contents	NBRI-SOP-202 (17A) Issue. 03, Issue Dated 30.04.2014 (Hydro Distillation /Solvent Extraction)	0.01 to 20%
		Optical Rotation	IS 326 (Part 4): 2005	(±)80°
		Refractive Index	IS 326 (Part 5): 2006	1.3 to 1.7
		Specific Gravity	IS 326 (Part 3): 2006	0.5 to 2.0

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	Essential Oils, Aroma Chemicals, Indian Attars & Fragrances	Acid Value	IS 326 (Part 7): 2006	0.01 to 60
		Characterization & Estimation of Major Chemical Constituents of Oil	IS 326 (Part 19): 1998 (RA 2002)(GLC)	1 % to 100 %
		Characterization & Estimation of Aromatic Chemicals By	NBRI –SOP-202 (33) Issue. 03, Issue Dated. 30.04.2014 (GCMS)	1 Mg / Liter to 1000 Mg / Liter
III.	**POLLUTION & ENVIRONMENT**			
1.	**Soil**	pH	IS 2720 (Part 26): 1987 (RA 1997) APHA (21st Edition) 4500 H+B, 4-90	1 to 14
		Conductivity	IS 14767:2000. (RA 2006) APHA (21st Edition) 2510-B, 2-47 to 2-48	0.001 µs to3000 µs
		Sulphate-S	APHA (21st Edition) 4500-SO_4^{-2}: 1998, (Turbidometric method), 4-188, 2005	2 mg/g to 9 mg/g 10 mg/g to 40 mg/g
		Total Organic Carbon	IS 2720 (Part 22): 1972 (RA 2006)	0.03 to 3.5 %
		Available Nitrogen	IS 14684: 1999 (RA 2005)	0.005 % to 7.1 %
		Total Nitrogen	IS 14684: 1999 (RA 2005)	0.005 % to 7.1 %
		Available Phosphorous	APHA (21st Edition) 4500-P E: 2005, 4-153	1 mg/g to 100 mg/g

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	Soil	Total Phosphorous	IS 6361-1971 (RA 2003)	10 mg/g to 100 mg/g
		Available Potassium	APHA (21st Edition) 3500-K B: 2005, 3-88	1 mg/g to 100 mg/g
		Total Potassium	APHA (21st Edition) 3500-K B: 2005, 3-88	5 mg/g to 100 mg/g
		Heavy Metals (Cr, Cu, Cd, Mn, Mg, Fe, Ni, Zn, Pb, Se & As)	NBRI –SOP-202 (06 & 36) Issue. 03, Issue Dated. 14.04.2014 (AAS & HPLC-ICP-MS)	0.1 mg/g to 10 mg/g
2.	**Water**	pH	IS 3025 (Part 2)	1 to 14
		Conductivity	IS 3025 (Part 14)	0.01 to 100 µs
		Heavy Metals	APHA (21st Edition): 2012 (AAS And ICPMS)	
		Cr		0.03 to 10 mg/liter
		Cu		0.003 to 10 mg/liter
		Cd		0.002 to 5 mg/liter
		Mn		0.05 to 5 mg/liter
		Mg		0.5 to 100 mg/liter
		Fe		0.02 to 10 mg/liter
		Ni		0.01 to 5 mg/liter
		Zn		02 to 5.0 mg/liter
		Pb		0.01 to 1.0 mg/liter

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	Water	Se	APHA (21st Edition): 2012 (AAS And ICPMS)	0.01 mg/liter to 2 mg/liter
		As		0.005 mg/liter to 2 mg/liter
3.	**Plant and Plant Products**	**Heavy Metals**	NBRI –SOP-202 (06 & 36) Issue. 03, Issue Dated 14.04.2014 (AAS And ICPMS)	
		Cr		0.1 mg/kg to 10 mg/kg
		Cu		0.05 mg/kg to 15 mg/kg
		Cd		0.05 mg/kg to 5 mg/kg
		Mn		0.1 mg/kg to 10 mg/kg
		Mg		0.4 mg/kg to 100 mg/kg
		Fe		0.05 mg/kg to 20 mg/kg
		Ni		0.05 mg/kg to 5 mg/kg
		Zn		02 mg/kg to 10 mg/kg
		Pb		0.05 mg/kg to 1.0 mg/kg
		Se		0.05 mg/kg to 2 mg/kg
		As		0.05 mg/kg to 2 mg/kg

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