

Laboratory RCA Laboratories, CCA Building, Second Floor, Plot No. 272, Ward No. 12 B, Gandhidham, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7023

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Validity 22.07.2019 to 23.02.2020

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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

I.	FOOD & AGRICULTURALS PRODUCTS			
1.	Cereals Pulses & Products	Refractions (Food Grains) Other Food Grains Damaged Discolored Insect Damaged Fragments Broken Slightly Damaged or touched Chalky in case of rice Red grains Kernels with husk Shrivelled or Immature Varietal admixture Foreign matter	IS 4333(P-1) -1996 (RA 2012)	0 to 25 % m/m
		Refractions (Pulses) Seeds typical of the species and variety Seeds typical of species but of another variety Defective seeds Organic impurities Inorganic impurities	IS 10768 1984 (RA 2010)	0 to 95 % m/m
		Detection of Hectoliter Weight	IS 4333 (P-3) 2002 (RA 2012) ISO-7971-2 (1995)	55 kg/hl to 90 kg/hl
		Average Grain Length in rice	ES ISO 7301:2001 (RA 2012) (Identical with ISO 7301:1988)	2.50 mm to 10 mm

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		Moisture	IS 4333 (P-2) 2002 (RA 2012) ISO 712 1998. ISO 6540:2001(RA 2012) (Identical with ISO6540 : 1980) for maize	5 % to 18 % m/m
		Ash	GAFTA 130 11:0 2014	0.2 % to 3.0 % m/m
		Acid Insoluble Ash	GAFTA 130 12:0 2014	0.1 % to 1.0 % m/m
		Wet Gluten	GAFTA 130 26:2 2014	15 % to 35 % m/m
		Dry Gluten	IS 1155 1968 (RA 2010)	5 % to 15 % m/m
		Protein / Crude Protein	GAFTA 130 4:1 2014	7 % to 15 % m/m
		Alcoholic Acidity	IS 1009 1979 (RA 2010)	0 to 0.5 % m/m
		Crude Fiber	GAFTA 130 9:0 2014	0.1 % to 4.0 % m/m
		Starch	GAFTA 130 23:0 2014	25 % to 90 % m/m
		Ergot	IS 8184 1976 (RA 2015)	Qualitative
2.	ANIMAL FEEDS/ Deoiled cake (Soybean Meal / Ground Nut Ext. / Rapeseed Meal / Castor Seed Ext. / Fish Meal	Moisture	GAFTA 130 2:1 2014	5 % to 15 % m/m
		Protein	GAFTA 130 4:1 2014	8 % to 65 % m/m
		Oil	GAFTA 130 3:0 2014	0.5 % to 20 % m/m
		Crude Fiber	GAFTA 130 9:0 2014	3 % to 40 % m/m
		Ash	GAFTA 130 11:0 2014	1 % to 15 % m/m
		Acid Insoluble Ash/ Sand & Silica	GAFTA 130 12:0 2014	0.2 % to 10 % m/m
		Urease Activity	GAFTA 130 22:0 2014	0.1 mgN/g/min to 2.0 mgN/g/min at 30°C
		Phosphorus	GAFTA 130 8:0 2014	0.5 % to 1.5 % m/m
3.	Oil seeds & by-Products	Moisture	IS 3579 -1966 (RA 2015) AOCS Ab 2-49 Reapproved 2017 Ai to 2 - 75 Reapproved 2017 ISO 665 -2000	4 % to 12 % m/m
		Oil Content	IS 3579-1966 (RA 2015) FOSFA -2005	15 % to 65 % m/m
		FFA of Extracted Oil	IS 3579 -1966 (RA 2015)	0.2 % to 10 % m/m
		Foreign Matter	IS 3579 -1966 (RA 2015)	0 to 10 % m/m

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		Refraction	IS 3579 -1966 (RA 2015)	0 to 10 % m/m
		Admixture	IS 3579 -1966 (RA 2015)	0 to 10 % m/m
		Counts / Ounce	FOSFA (2001)	25 counts to 150 counts
4.	Oils, Fats & related products	Moisture & Volatile Matter	AOCS Ca 2c 25 Reapproved 2017 IS 548(P-1) 1964 (RA 2015)	0.01 % to 0.5 % m/m
		Free Fatty Acid (FFA)	AOCS Ca 5a 40 Revised 2017 IS 548(P-1) 1964 (RA 2015)	0.02 % to 10.0 % m/m
		Saponification Value	AOCS Cd 3-25 Reapproved (2017) IS 548(P-1) 1964 (RA 2015)	150 mgKOH/gm to 260 mgKOH/gm
		Unsaponifiable matter	IS 548 (P-1)1964 (RA 2015) AOCS Ca 6b-53 (Reapproved 2017)	0.3 % to 5 % m/m
		Iodine Value	IS 548 (P-1)1964 (RA 2015) AOCS Cd 1d-92 Reapproved 2017) ISO 3961(1996) IP 84 / 93	2 gm to 150 gm/100gm
		Refractive Index	AOCS Cc 7-25 Reapproved 2017) IS 548(P-1)(1964 (RA 2015)	1.300 to 1.700
		Specific Gravity /Density	IS 548 (P-1)1964 (RA 2015) AOCS Cc 10c-95 Reapproved 2017 ISO 6883 -2000	0.8000 to 1.0000 0.8000 gm/ml to 1.0000 gm/ml
		Color	IS 548(P-1) 1964 (RA 2015) AOCS Cc 13e-92 Reapproved 2017	0.1 R to 10 R 1Y to 50 Y

Mamta Bharti
Convenor

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Program Manager

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		Insoluble Impurities	AOCS Ca 3a-46 Reapproved 2017 IS 548 (P-1)1964 (RA 2015)	0.005 % to 0.5 % m/m
		Acid Value	IS 548(P-1) 1964 (RA 2015) AOCS cd 3d-63 Reapproved 2017	0.04 mgKOH/gm to 20 mgKOH/gm
		Peroxide Value	AOCS Ja 8-87 Reapproved 2017 IS 548(P-1)1964 (RA 2015)	0.5 meq/kg to 15 meq/kg
		Lecithin (as P & Phosphate)	AOCS Ca 12-55 Revised 2017	20 mg/kg to 250 mg/kg
		Cloud Point	AOCS Cc 6-25 Reapproved 2017	5° C to 25° C
		Melting Point / Slip Melting Point	IS 548(P-1) 1964 (RA 2015) AOCS Cc 3-25 Reapproved 2017	15° C to 45° C
		Determination of carotene in vegetable oil	BS: 684 Sec 2.20: 1977	300 mg/kg to 1500 mg/kg
		Chlorophyll	AOCS Cc 13i-96 Reapproved 2017	1 mg/kg to 22 mg/kg
		Viscosity @25°C	AOCS Ja 10 -87 Reapproved 2017	100 centipoises to 10000 centipoises
		Colour Gardner	AOCS Td-1a-64 Reapproved 2017	1 G to 18 G
		Purity Tests BAUDOQUIN HALPHEN HEXABROMIDE ARGEMONE OIL HYDROCYANIC ACID MINERAL OIL BELLIER TURBIDITY CASTOR OIL	IS-548 (Part II)1976 (RA 2010)	Qualitative

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5.	Raw Sugar	Polarization	ICUMSA GS 1/2/3/9-1 (2011)	95.0° Z to 99.9° Z
		Moisture	ICUMSA GS2/1/3/9-15 (2007) (Amended)	0.04 % to 0.5 % m/m
		Sulphated Ash	ICUMSA GS1-10 (Amended) (1998)	0.04 % to 0.5 % m/m
		Color	ICUMSA GS1/3 – 7 (2011) ICUMSA GS 9/1/2/3 – 8 (2011)	300 IU to 5000 IU 300 IU to 5000 IU
		Reducing Sugar	ICUMSA GS1/3/7-3 (2005)/ ICUMSA GS 1-5 (2009)	0.2 % to 1.0 % m/m
		Starch	ICUMSA GS 1-16 (2013)	50 mg/kg to 200 mg/kg
6.	Refined Sugar	Polarization	ICUMSA GS 2/3-1 (2011) IS 15279 (2003) (RA 2008)	95.0° Z to 99.9° Z
		Moisture	ICUMSA GS 2/1/3/9-15 (2007)	0.01 % to 0.1 % (m/m)
		ICUMSA Colour	1. ICUMSA GS 2/3-9 (2005) 2. GS 2/3-10 (2011) 3. GS 9/1/2/3-8(2011)	5 IU to 300 IU 5 IU to 300 IU 5 IU to 300 IU
		Sulphite by Colorimetry	ICUMSA GS 2/1/7/9-33 (2011)	1 mg/kg to 100 mg/kg
		Insoluble Matter	ICUMSA GS 2/3/9-19 (2007)	0.005 % to 0.1 % m/m
		Reducing Sugar	ICUMSA GS 2/3/9-5 (2011) ICUMSA GS 2/9-6 (2011)	0.005 % to 0.05 % m/m
		Sulphated Ash	IS 15279 (2003) (RA 2013)	0.01 % to 0.1% m/m
II.	SOLID FUELS			
1.	Coal	Total Moisture	A)IS:1350(P-1)1984 (RA 2013), cl 6.3.2 B)ISO:589:2008(E)11-01,	2 % to 60 % m/m

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			CI 4.1.2 Amendment 01	
		Proximate analysis		
		Inherent Moisture	SOP/RCAL/KDL/020 Issue .No. 01, Issue date: 01.04.2015	2 % to 20 % m/m
		Ash	IS:1350(P-1)1984 (RA 2013)	5 % to 60 % m/m
		volatile Matter	IS:1350(P-1)1984 (RA 2013)	15 % to 55 % m/m
		Fixed Carbon	IS:1350(P-1)1984 (RA 2013)	25 % to 75 % m/m By Difference
		Gross Calorific Value	IS:1350(P-II)1970 (RA 2015)	3000 kcal/kg to 8000 kcal/kg
			ASTM D 5865-13	3000 kcal/kg to 8000 kcal/kg
		Sulphur	IS:1350(P-III)-1969 (RA 2010)	0.1 % to 2 % m/m
		Fusibility (Ash Fusion Temperature) in oxidizing atmosphere	ASTM D 1857/D1857M-17a	700° C to 1350° C
			Initial Deformation Temperature	
			Softening Temperature	1000° C to 1400° C
			Hemi spherical Temperature	1000° C to 1450° C
			Fluid Temperature	1000° C to 1500° C

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