

Laboratory	TLR India (A Division of Peterson SBS Offshore Logistics India Private Limited), C-113, TTC Industrial Area, Pawane, MIDC, Navi Mumbai, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	11.09.2015
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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. FOODS AND AGRICULTURAL PRODUCTS				
1.	Animals Feed and Feed Stuff (Soyabean Meal)	Moisture content	GAFTA 130: 2003 Method - 2:1 IS 7874 (Part 1): 1975 (RA 2009)	(0.5 g to 15 g)/100 g (0.5 g to 15 g)/100 g
		Crude Ash	GAFTA 130: 2003 Method - 11:0	(0.5 g to 10 g)/100 g
		Total Ash	IS 7874 (Part 1): 1975 (RA 2009)	(0.5 g to 10 g)/100 g
		Acid insoluble Ash	IS 7874 (Part 1): 1975 (RA 2009) GAFTA 130: 2003 Method 12:0	(0.1 g to 2 g)/100 g (0.1 g to 2 g)/100 g
		Crude Fat	GAFTA 130: 2003 Method - 3:0 IS 7874 (Part 1): 1975 (RA 2009)	(0.1 g to 10 g)/100 g (0.1 g to 10 g)/100 g
		Crude Fibre	GAFTA 130: 2003 Method- 9:0 IS 7874 (Part 1): 1975 (RA 2009)	(0.5 g to 5 g)/100 g (0.5 g to 5 g)/100 g
		Calcium	GAFTA 130: 2003 Method- 16:1	(0.1 g to 10 g)/100 g
		Magnesium	GAFTA 130: 2003 Method- 18:1	(0.1 g to 10 g)/100 g
		Crude Protein	GAFTA 130: 2003 Method- 4:1 IS 7874 (Part 1) 1975 (RA 2009)	(2 g to 55 g)/100 g (2 g to 60 g)/100 g
		Urease Activity	GAFTA 130: 2003 Method- 22:0	(0.001 mgN to 0.2 mgN/g/min at 30 °C
		Phosphorous	IS 7874 (Part 2): 1975 (RA 2004)	(0.01 g to 15 g)/100 g

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2.	Food Grains and Pulses	Moisture	IS 1155: 1968 (RA 2010) GAFTA 130 Method - 2:2 (2003)	(0.1 g to 15 g)/100 g (0.1 g to 15 g)/100 g
		Total Ash	IS 1155: 2010 GAFTA 130 Method - 11:0 (2003)	(0.1 g to 2 g)/100 g (0.1 g to 2 g)/100 g
		Acid insoluble ash	IS 1155: 1968 (RA 2010) GAFTA 130 Method - 12:0 (2003)	(0.05 g to 1.5 g)/100 g (0.5 g to 1.5 g)/100 g
		Crude fibre	IS 1155: 1968 (RA 2010) GAFTA 130 Method - 9:0 (2003)	(1 g to 5 g)/100 g (1 g to 5 g)/100 g
		Gluten Content	IS 1155: 1968 (RA 2010) GAFTA 130 Method - 34:1 (2003)	(0.5 g to 12 g)/100 g (0.5 g to 10 g)/100 g
		Alcoholic Acidity	IS 1155: 1968 (RA 2010)	(0.1 g to 2.0 g)/100 g
		Crude Protein	IS 7219: 1973 (RA 2005)	(5 g to 40 g)/100 g
		Crude Protein for Wheat	GAFTA 130 Method - 4:1 (2003)	(5 g to 40 g)/100 g
		Foreign Matter	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Other Food Grains	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Damaged Grains	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Discoloured Grains	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Insect Damaged Grains	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g

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	Food Grains and Pulses	Shriveled/Shrunken/Broken	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Chalky Kernels with husk	IS 4333 (Part 1): 1996 (RA 2012)	(0.1 g to 5 g)/100 g
		Admixture of grains	GAFTA 130 Method - 35:0 (2003)	(0.1 g to 5 g)/100 g
a.	Corn	Aflatoxin B ₁	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Aflatoxin B ₂	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Aflatoxin G ₁	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Aflatoxin G ₂	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Total Aflatoxin (B ₁ , B ₂ , G ₁ , G ₂)	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
3.	Nuts and Nut Products (Ground nuts)	Moisture content	GAFTA 130 Method - 2:1 (2003)	(0.5 g to 10 g)/100 g
		Crude Ash	GAFTA 130 Method - 11:0 (2003)	(0.5 g to 2.5 g)/100 g
		Crude fibre	GAFTA 130 Method - 9:0 (2003)	(0.5 g to 2 g)/100 g
		Peroxide value	IS 548 (Part 1): 1984 (RA 2010)	(0.1 meq to 100 meq)/1000 g
		Acid insoluble ash	GAFTA 130 Method - 13:0 (2003)	(0.05 g to 1 g)/100 g
		Aflatoxin B ₁	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Aflatoxin B ₂	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg

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	Nuts and Nut Products (Ground nuts)	Aflatoxin G ₁	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Aflatoxin G ₂	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
		Total Aflatoxin (B ₁ , B ₂ , G ₁ , G ₂)	AOAC (19 th Edition) 2005.08	1 µg/kg to 100 µg/kg
4.	Spices and Condiments (Turmeric, corianders and papers)	Moisture Content	IS 1797: 1985 (RA 2009)	(0.5 g to 20 g)/100 g
		Extraneous Matter	IS 1797: 1985 (RA 2009)	(0.01 g to 10 g)/100 g
		Total Ash	IS 1797: 1985 (RA 2009)	(2 g to 10 g)/100 g
		Acid insoluble ash	IS 1797: 1985 (RA 2009)	(0.05 g to 2 g)/100 g
		Crude fibre	IS 1797: 1985 (RA 2009)	(0.1 g to 5 g)/100 g
		Non Volatile ether Extract	IS 1797: 1985 (RA 2009)	0.1 % to 5 %
		Cold Water Soluble Extract	IS 1797: 1985 (RA 2009)	0.1 % to 12 %
5.	Cane Sugars (White and Raw)	Moisture content	ICUMSA GS2/1/3/9-15 (2007)	(0.1 g to 2 g)/100 g
		Conductivity of Ash	ICUMSA GS2/3-17 (2011)	0.002 % to 0.20 %
			ICUMSA GS1/3/4/7/8-13 (1994)	0.1 % to 0.5 %
		Insoluble Matter	ICUMSA GS2/3/9: 19 (2007)	50 mg/kg to 400 mg/kg
		pH	ICUMSA GS1/2/3/4/7/8/9-23 (2013)	1 to 7
	Sulphated Ash	ICUMSA GS1-10 (1998)	0.1 % to 10 %	

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	Cane Sugars (White and Raw)	Starch in raw sugar	ICUMSA GS1-17 (2013)	5 mg/kg to 500 mg/kg
		Colour	ICUMSA GS2/3-10 (2007)	5 IU to 250 IU
			ICUMSA GS2/3-9 (2005)	5 IU to 250 IU
			ICUMSA GS9/1/2/3/8 (2011)	5 IU to 300 IU 500 IU to 5000 IU
			ICUMSA GS1/3-7 (2011)	500 IU to 5000 IU
		Polarization	ICUMSA GS2/3-1 (2011)	95.0 °Z to 99.99 °Z
	ICUMSA GS1/2/3/9-1 (2011)		95.0 °Z to 99.90 °Z	
6.	Molasses	Apparent dry substance	ICUMSA GS4-15 (1994)	5 to 90 at 27.5 °Brix
		Total reducing sugar as Invert	ICUMSA GS4/3-7 (2007)	(40 g to 70 g)/100 g
		Sulphated Ash	ICUMSA GS3/4/7/8-11 (2000)	(1 g to 30 g)/100 g
		Refractometric Dry Substance (RSD)	ICUMSA GS4/3/8-13 (2009)	70 % to 90 %
7.	Oils and Fats	Moisture and Volatile Matter	IS 548 (Part 1): 1964 (RA 2010) ISO 662: 1998	(0.01 g to 1 g)/100 g (0.01 g to 1 g)/100 g
		Insoluble Impurities	IS 548 (Part 1): 1964 (RA 2010) ISO 663: 2007	(0.01 g to 1 g)/100 g (0.01 g to 1 g)/100 g
		Unsaponifiable Matter	IS 548 (Part 1): 1964 (RA 2010) ISO 3596: 2000	(0.02 g to 1 g)/100 g (0.02 g to 1 g)/100 g

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	Oils and Fats	Melting Point	IS 548 (Part 1): 1964 (RA 2010) ISO 6321: 2002	2 °C to 40 °C 2 °C to 40 °C
		Specific Gravity	IS 548 (Part 1): 1964 (RA 2010)	0.87 to 0.10
		Colour	IS 548 (Part 1): 1964 (RA 2010)	(20 to 80) Lovibond units
		Iodine Value	IS 548 (Part 1): 1964 (RA 2010) ISO 3961: 2009	7 to 150 7 to 150
		Saponification Value	IS 548 (Part 1): 1964 (RA 2010) ISO 3657: 2002	165 to 260 165 to 260
		Free Fatty Acids	IS 548 (Part 1): 1964 (RA 2010) ISO 660:10.2	0.01 to 10 0.01 to 10
a.	Vegetable oils	Fatty Acids profile		
		Palmitic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Stearic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Oleic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Linoleic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Caprylic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %

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	Vegetable oils	Capric Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Lauric Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Myristic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Arachidic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Behenic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Erucic Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Lignoceric Acid	ISO 5508: 1990, ISO 12966-2	0.01 % to 100 %
		Peroxide value	IS 548 (Part 1): 1964 (RA 2010) ISO 3960: 2007	(0.1 meq to 100 meq)/1000 g (0.1 meq to 100 meq)/1000 g
		Presence of cotton seed oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
		Presence of sesame oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)

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	Vegetable oils	Presence of Linseed oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
		Presence of Karanja (Pungam) oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
		Presence of Hydrocyanic Acid	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
		Presence of Mineral oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
		Presence of Ground nut oil	IS 548 (Part 2): 1976 (RA 2006)	Qualitative (Presence/Absence)
II. WATER				
1.	Waste Water	Electrical Conductivity	IS 3025 (Part 14): 2013	1 µs/cm to 50000 µs/cm
		pH	IS 3025 (Part 11): 1983 (RA 2012)	4 to 12
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2012)	1 mg/l to 5000 mg/l
		Calcium	IS 3025 (Part 40): 1991 (RA 2009) Method (a)	1 mg/l to 1000 mg/l
		Magnesium	IS 3025 (Part 46): 1994 (RA 2009) Method (b)	1 mg/l to 1000 mg/l
		Total hardness	IS 3025 (Part 21): 2009 Method (b)	1 mg/l to 1000 mg/l

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	Waste Water	Total alkalinity	IS 3025 (Part 23): 1986 (RA 2009)	1 mg/l to 1000 mg/l
		Total Suspended solids	IS 3025 (Part 17): 1984 (RA 2012)	1 mg/l to 1000 mg/l
		Acidity	IS 3025 (Part 22): 1986 (RA 2009)	1 mg/l to 1000 mg/l
		Chloride	IS 3025 (Part 32): 1988 (RA 2009) Clause 2.0	1 mg/l to 1000 mg/l
		Chemical Oxygen Demand	IS 3025 (Part 58): 2006 (RA 2012)	10 mg/l to 50000 mg/l
		Iron	IS 3025 (Part 53): 2009 Method (b)	1 mg/l to 100 mg/l
		Copper	IS 3025 (Part 42): 1992 (RA 2009) Method (b)	1 mg/l to 100 mg/l
		Zinc	IS 3025 (Part 49): 1994 (RA 2009) Method (b)	1 mg/l to 100 mg/l
		Arsenic	IS 3025 (Part 37): 1988 (RA 2009) Method (b)	0.01 mg/l to 10 mg/l
		Chromium (total)	IS 3025 (Part 52): 2003 (RA 2009) Method (b)	10 mg/l to 1000 mg/l
		Mercury	IS 3025 (Part 48): 1994 (RA 2009) Method (b)	0.01 mg/l to 10 mg/l
		Nickel	IS 3025 (Part 54): 2003 (RA 2009) Method (b)	1 mg/l to 100 mg/l

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	Waste Water	Cadmium	IS 3025 (Part 41): 1992 (RA 2009) Method (a)	0.1 mg/l to 100 mg/l
		Lead	IS 3025 (Part 47): 1994 (RA 2009) Method (c)	0.5 mg/l to 100 mg/l
		Sulphate	IS 3025 (Part 24): 1986 (RA 2009) Method (iii)	10 mg/l to 1000 mg/l

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