

Laboratory ITC Life Sciences & Technology Centre, No. 3, 1st Main Road, Peenya Industrial Area, 1st Phase, Bangalore, Karnataka

Accreditation Standard ISO/IEC 17025: 2005

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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 AND AGRICULTURAL PRODUCTS			
1.	Tobacco and Tobacco products			
a.	Cigarette Smoke	pH	TTP/VAL/SMK/03-16, Issue No.01, Rev No.02, Dated 12 th Jan 2016	4.00 to 9.00
		Nicotine free dry particulate matter	ISO 4387:2000	0.5 to 30.0 mg/cig
		Carbon Monoxide	ISO 8454:2007	0.5 to 30 mg/cig
		Nicotine	ISO 10315:2013	0.01 to 4.00 mg/cig
		Puff No.	ISO 4387	> 1.0
		Oxides of Nitrogen (NO)	TTP/VAL/SMK/70-17, Issue No. 01, Rev No. 01, Dated 28 th Jul 2017	100 to 1000 µg/cig
		Oxides of Nitrogen (NO _x)		100 to 1000 µg/cig
		Hydroquinone	TTP/VAL/SAL/41-12, Issue No. 01, Rev No. 01, Dated 01 st Oct 2013	0.09 to 64 µg/cig
		Resorcinol		0.07 to 24 µg/cig
		Catechol		0.08 to 64 µg/cig
		Phenol		0.08 to 64 µg/cig
		p-Cresol		0.09 to 13 µg/cig
		m-Cresol		0.06 to 13 µg/cig
		o-Cresol		0.08 to 13 µg/cig
		Ammonia	TTP/VAL/AL/67-17, Issue No.01, Rev No. 00, Dated 07 th Sep 2017	5.0 to 100 µg/cig

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		N-Nitroso nornicotine (NNN)	TTP/VAL/SAL/46-12, Issue No. 01, Rev No. 01, Dated 02 nd Jan 2017	0.8 to 250 ng/cig
		N-Nitroso anatabine (NAT)		0.3 to 250 ng/cig
		N-Nitroso anabasine (NAB)		1.0 to 250 ng/cig
		4-(N-Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)		0.3 to 250 ng/cig
		Formaldehyde	TTP/VAL/SAL/01-09, Issue No.01, Rev. No.01, Dated 09 th Nov 2017	1.4 to 345 µg/cig
		Acetaldehyde		2.9 to 1226 µg/cig
		Acetone		1.9 to 724 µg/cig
		Acrolein		1.4 to 431 µg/cig
		Propionaldehyde		1.7 to 431 µg/cig
		Crotonaldehyde		2.4 to 422 µg/cig
		Butyraldehyde		6.9 to 385 µg/cig
		Hydrogen Cyanide	TTP/VAL/CHEM/56-17, Issue No. 01, Rev No.01, Dated 11 th Jan 2018	1.40 to 280 µg/cig
		Eugenol	TTP/VAL/AL/64-17, Issue No. 01, Rev No. 00, Dated 03 rd Aug 2017	0.003 to 6.66 mg/cig
		Eugenol acetate		0.003 to 1.67 mg/cig
		trans-Caryophyllene		0.003 to 1.67 mg/cig
		1,3-Butadiene	TTP/VAL/ SAL/04-13, Issue No. 02, Rev No. 00, Dated 21 st Sep 2015	9.5 to 400 µg/cig

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		Acrylonitrile		2.0 to 100 µg/cig
		Benzene		7.6 to 320 µg/cig
		Toluene		8.5 to 320 µg/cig
		Isoprene		83.5 to 3200 µg/cig
		Benzo(a)pyrene	TTP/VAL/SAL/61-17, Issue No. 01, Rev No. 00, Dated 11 th Sep 2017 (ISO:22634-2)	0.5 to 25 ng/cig
			TTP/VAL/ SAL/01-13 Issue No. 02, Rev No. 01, Dated 25 th Sep 2015	1.0 to 200 ng/cig
		1-Aminonapthalene	TTP/VAL/SAL/21-13, Issue No.01, Rev No. 01, Dated 9 th Oct 2013	0.9 to 80 ng/cig
		2-Aminonapthalene		1.0 to 80 ng/cig
		3-Aminobiphenyl		0.2 to 16 ng/cig
		4-Aminobiphenyl		0.2 to 16 ng/cig
		Arsenic	TTP/VAL/SAL/62-17, Issue no. 01, Rev no. 00, Dated 29 th Dec 2017	9.4 to 125 ng/cig
		Cadmium		10.0 to 125 ng/cig
		Lead		13.2 to 125 ng/cig
		Mercury		1.4 to 25 ng/cig
		Pyridine	TTP/VAL/SAL/45-12, Issue No. 01, Rev. No. 00, Dated 22 nd Sep 2015	0.4 to 16 µg/cig
		Quinoline		0.04 to 1.6 µg/cig
b.	Tobacco & Tobacco Products	Total Alkaloids As Nicotine	TTP/VAL/CHEM/08-12, Issue No. 01, Rev No. 00, Dated 6 th Feb 2013	0.04 to 4.00 %
		Total Nicotine	TTP/VAL/SAL/58-17, Issue No. 01, Rev No. 00,	0.02 to 5.3%

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			Dated 09 th Aug 2017	
		Reducing Sugars	TTP/VAL/CHEM/02-10, Issue No. 01, Rev No. 00, Dated 1 st Dec 2010	0.2 to 25.0 %
		Total Sugars	TTP/VAL/CHEM/03-10, Issue No. 01, Rev No. 00, Dated 1 st Dec 2010	0.5 to 25.0 %
		Chloride	TTP/VAL/CHEM/04-10, Issue No. 01, Rev No. 00, Dated 1 st Dec 2010	0.05 to 2.5 %
		Oven Moisture (Loss on Drying)	TTP/VAL/PHY/01-10, Issue No. 02, Rev No. 00, Dated 16 th Dec 2015	2.0 to 50.0 %
		Nitrate	ISO 15517:2003	0.05 to 2.5 %
		pH	TTP/VAL/SAL/57-17, Issue No. 01, Rev No. 00, Dated 04 th Aug 2017	4.0 to 10.0
		Recon Content	TTP/VAL/CHEM/07-10, Issue No. 01, Rev No. 00, Dated 1 st May 2009	0.1 to 10.0 %
		Expanded Tobacco	TTP/VAL/CHEM/48-15, Issue No. 01, Rev No. 00, Dated 25 th Aug 2015	1.33 to 20.0 %
		Clove Content	TTP/VAL/AL/69-17, Issue No. 01, Rev No. 00, Dated 18 th Dec 2017	5.0 to 50.0 %
		Arsenic	TTP/VAL/ SAL/05-12	0.6 to 12.5 µg/g
		Cadmium	Issue No.01, Rev. No. 01	0.6 to 12.5 µg/g
		Mercury	Dated 21 st Sep 2015	0.08 to 0.5 µg/g
		Lead		0.6 to 12.5 µg/g
		Eugenol	TTP/VAL/AL/63-17	0.005 to 10.0%
		Eugenol acetate	Issue No. 01, Rev No. 00	0.005 to 2.50 %
		trans-Caryophyllene	Dated 03 rd Aug 2017	0.007 to 2.50 %

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		Formaldehyde	TTP/VAL/ SAL/14-12	1.61 to 135 µg/g
		Acetaldehyde	Issue No. 01, Rev. No. 01 Dated: 09 th Nov 2017	3.12 to 425 µg/g
		Crotonaldehyde		1.42 to 161 µg/g
		Benzo(a)pyrene	TTP/VAL/SAL/60-17, Issue No. 01, Rev No. 00, Dated 28 th Sep 2017	3.00 to 90.0 ng/g
			TTP/VAL/SAL/20-13, Issue No.01, Rev No. 01, Dated 15 th July 2013	1.0 to 333 ng/g
		Nornicotine	TTP/VAL/SAL/59-17, Issue No. 01, Rev No. 00, Dated 18 th Aug 2017	105 to 2500 µg/g
		Anabasine		42.5 to 2500 µg/g
		Anatabine		143 to 500 µg/g
		Myosmine		8.75 to 75.0 µg/g
		Ammonia	TTP/VAL/AL/66-17, Issue No.01, Rev No. 00, Dated 03 rd Mar 2017	50 to 5000 µg/g
		N-Nitrosornicotine (NNN)	TTP/VAL/ SAL/13-12, Issue No.01, Rev No. 01, Dated 02 nd Jan 2017	0.008 to 2.5 µg/g
		N-Nitrosoanatabine (NAT)		0.003 to 2.5 µg/g
		N-Nitrosoanabasine (NAB)		0.010 to 2.5 µg/g
		4-(N-Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)		0.003 to 2.5 µg/g
		Menthol Content in Bobbins	TTP/VAL/AL/10-12, Issue No.01, Rev No. 00,	30 to 1250 mg/m

Ajay Kumar Sharma
Convener

N. Venkateswaran
Program Director

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		Menthol Content in Cigarettes	Dated 04 th Nov 2013	0.20 to 10.0 mg/cig
		Menthol Content in Capsule	TTP/VAL/AL/65-17, Issue no. 01, Rev no. 00, Dated 27 th Apr 2017	0.10 to 15.0 mg/capsule
		Gelatin Identification in Capsule	TTP/VAL/AL/68-17, Issue No. 01, Rev No. 00, Dated 18 th Jul 2017	Qualitative (Visual)
		Ash	TTP/VAL/AL/06-12, Issue No.01, Rev No. 01, Dated 1 st Oct 2013	0.1 to 20.0 %
		Acid Insoluble Ash as Silica		0.1 to 3.0 %
		Propylene Glycol	TTP/VAL/AL/11-12, Issue No.01, Rev No. 01, Dated 1 st Oct 2013	0.02 to 6.0 %
		Glycerine		0.5 to 50 %
		Coumarin	TTP/VAL/SAL/12-13, Issue No. 01, Rev No. 00, Dated 25 th Mar 2013	8.1 to 125 µg/g
II.	RESIDUE IN FOOD PRODUCTS			
1.	Pesticide Residues in Tobacco	Heptachlor	TTP/VAL/AL/50-15, Issue No. 01, Rev No. 00, Dated 3 rd Dec 2015	0.01 to 1.5 mg/kg
		Aldrin		0.01 to 1.5 mg/kg
		Chlordane		0.01 to 1.5 mg/kg
		Dieldrin		0.025 to 1.5 mg/kg
		2,4-DDD		0.01 to 1.5 mg/kg
		4,4-DDD		0.01 to 1.5 mg/kg
		2,4-DDE		0.01 to 1.5 mg/kg
		4,4 -DDE		0.01 to 1.5 mg/kg
		2,4 -DDT		0.01 to 1.5 mg/kg

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		4,4 –DDT		0.01 to 1.5 mg/kg
		Heptachlor Epoxide		0.01 to 1.5 mg/kg
		Endrin		0.025 to 1.5 mg/kg
		Toxaphene	TTP/VAL/AL/49-15, Issue No. 01, Rev No. 00, Dated 3 rd Dec 2015	1.00 to 7.5 mg/kg
		Formothion	TTP/VAL/AL/50-15, Issue No. 01, Rev No. 00, Dated 3 rd Dec 2015	0.025 to 1.5 mg/kg
		Total Permethrin	TTP/VAL/AL/50-15, Issue No. 01, Rev No. 00, Dated 3 rd Dec 2015	0.05 to 3.0 mg/kg
		Dicamba	TTP/VAL/AL/47-15, Issue No.01, Rev No .01, Dated 5 th Jan 2016	0.12 to 2.5 mg/kg
		2,4-D		0.12 to 2.5 mg/kg
		2,4,5-T		0.12 to 2.5 mg/kg

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MECHANICAL TESTING				
I.	PAPER & PAPER PRODUCTS			
1.	Paper			
a.	Cigarette - Paper	Air Permeability – Standard Paper	ISO 2965 : 2009 (E)	20 to 120 CU
		Banded paper	ISO 2965 : 2009 (E)	3 to 50 CU
b.	Cigarette	Ignition Propensity (%Full Length Burn)	ISO 12863:2010:2011	Qualitative (Visual)
		Ignition Strength (%Full Length Burn)	ASTM-2187 : 16	Qualitative (Visual)
		Loss of Tobacco from the ends	ISO 3550-1:1997	4 to 50 mg/end
		Weight	IS 1577 : 2008 (RA 2012)	0.6 to 2.0 g
		Draw Resistance – Cigarette	ISO 6565 : 2015	0.1 to 50 cm WG
		Pressure Drop- Filter		0.1 to 200 cm WG
		Ventilation	ISO 9512 :2015	0 to 100 %
		Ventilation type	TTP/ SOP/ PHY/17-17, Issue No. 01, Rev no. 00, Dated 08 th Sep 2017	Qualitative (Visual)
		Nominal Diameter - Circumference	ISO 2971: 2013	16.0 to 30.0 mm
		Length	IS 1577: 2008, Annexure A (RA 2012)	0.5 to 120 mm
		Filling Density	IS 1577:2008, Annexure D (RA 2012)	100 to 400 cc (Derived Value)
		Net weight of tobacco per cigarette	IS 1577:2008, Annexure C (RA 2012)	0.001 to 2.0 g

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		Loose shorts	IS 1577 :2008, Annexure G (RA 2012)	0.05 to 2.0 mg/cig
		Firmness	TTP/VAL/PHY/03-10, Issue No. 02, Rev No. 00, Dated 16 th Dec 2015	50.0 to 85.0 %
		Filter Composition	TTP/VAL/PHY/51-15, Issue No. 01, Rev No. 00, Dated 15 th Dec 2015	Qualitative (Visual)
		Permeability- Cigarette spills –Standard Paper	ISO 2965: 2009 (E)	2 to 700 CU
		Permeability – Cigarette spills - Banded Paper	ISO 2965: 2009 (E)	2 to 700 CU
c.	Tobacco	Lamina Strip Particle Size Determination	N ^o 16 CORESTA Method	1.0 to 100 %w/w
		Width of Tobacco Shreds	IS1577 : 2008, Annexure H (RA 2012)	0.01to 100 mm
2.	Paper Board			
a.	Paper/ Paper Board	Grammage	ISO 536:2012 (E)	10 to 40 gsm
b.	Cigarette Pack	Pack Seal Strength	TTP/VAL/PHY/05-10, Issue No. 02, Rev No. 00, Dated 16 th Dec 2015	≥10 to 2000 ml/min