

Laboratory **Ultra Plus Lubes Pvt. Ltd., 11-14, 51-54, 53A, Jawahar Industrial Estate Kamothe, Kalamboli, Panvel, Maharashtra**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5865 (in lieu of T-3412)**

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Validity **24.05.2017 to 23.05.2019**

Last Amended on **30.06.2017**

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.	LUBRICANTS			
1.	Oils & Greases	Kinematic Viscosity at 100°C	ASTM D445-17 IS: 1448 P25-13	1 cSt to 200 cSt
		Kinematic Viscosity at 40°C	IP71-1997	1 cSt to 2000 cSt
		Viscosity Index	ASTM D2270-10 IS: 1448 P56-13 IP226-04	80 to 600
		ASTM Colour	ASTM D1500-12 IS: 1448 P12-13 IP196-11	0 to 8
		Flash Point (PMCC)	ASTM D93-16a IS: 1448 P21-12 IP35-16	40 °C to 360 °C
		Flash Point (COC)	ASTM D92-16b IS: 1448 P69-13 IP36-02	79 °C to 400 °C
		Total Acid Number(TAN) (Acidity)	ASTM D664-11 ae1 IS: 1448 P1-11 IP177-13	1 to 10 mg KOH/g
		Total Acid Number(TAN)	ASTM D974-14 e2	0.01 to 5 mg KOH/g
		Total Base Number (TBN)	ASTM D 2896-15 IS: 1448 P86-11 IP276-12	2 to 70 mg KOH/g
		Total Base Number (TBN)	ASTM D4739-11	2 to 70 mg KOH/gm
		Water Content	ASTM D95-13 e1 IS: 1448 P40-11 IP74-2000	0% to 25 % volume
		Water Content	ASTM D1744-13	10 mg/Kg to 5000 mg/Kg
		Specific gravity	ASTM D4052-16 IS: 1448 P16-14 IP160-99	0.650 to 1.100

Sangeeta Negi
Convenor

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		Density	ASTM D1298-12b IS: 1448 P16-14 IP160-99	0.700 g/ml to 1.000 g/ml
		Density	ASTM D4052-16	0.700 g/ml to 1.000 g/ml
		Crackle Test	Visual	Qualitative
		Sodium	ASTM D5185-13 e1	0.5 mg/kg to 1500 mg/kg
		Antimony		0.5 mg/kg to 1500 mg/kg
		Zinc		0.5 mg/kg to 2000 mg/kg
		Lead		0.5 mg/kg to 1500 mg/kg
		Calcium		0.5 mg/kg to 15000 mg/kg
		Copper		0.5 mg/kg to 1500 mg/kg
		Magnesium		0.5 mg/kg to 1700 mg/kg
		Iron		0.5 mg/kg to 1500 mg/kg
		Cadmium		0.5 mg/kg to 1500 mg/kg
		Barium		0.5 mg/kg to 1500 mg/kg
		Titanium		0.5 mg/kg to 1500 mg/kg
		Silicon		0.5 mg/kg to 1500 mg/kg
		Nickel		0.5 mg/kg to 1500 mg/kg
		Manganese		0.5 mg/kg to 1500 mg/kg
		Molybdenum		0.5 mg/kg to 1500 mg/kg
		Sulfur		0.5 mg/kg to 6000 mg/kg
		Phosphorus		0.5 mg/kg to 2000 mg/kg
		Tin	0.5 mg/kg to 1500 mg/kg	
		Silver	0.5 mg/kg to 1500 mg/kg	
		Boron	0.5 mg/kg to 1500 mg/kg	
		Chromium	0.5 mg/kg to 1500 mg/kg	
		Potassium	0.5 mg/kg to 1500 mg/kg	
		Vanadium	0.5 mg/kg to 1500 mg/kg	
		Aluminum	0.5 mg/kg to 1500 mg/kg	
		Zinc	ASTM D4951-14	0.5 mg/kg to 13000 mg/kg
		Calcium		0.5 mg/kg to 18000 mg/kg
		Magnesium		0.5 mg/kg to 1500 mg/kg
		Molybdenum		0.5 mg/kg to 1500 mg/kg
		Barium		0.5 mg/kg to 1500 mg/kg

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		Boron		0.5 mg/kg to 1500 mg/kg
		Copper		0.5 mg/kg to 1500 mg/kg
		Phosphorus		0.5 mg/kg to 1500 mg/kg
		Sulfur		0.5 mg/kg to 8000 mg/kg
		Demulsibility	ASTM D1401-12 e1 IS: 1448 P98-13	Qualitative
		Pour point Test	ASTM D97-17 IS: 1448 P10-13 IP15-14	-51 to 20°C
		Foaming Test	ASTM D892-13 IS: 1448 P67-11 IP146-10	Qualitative
		Insoluble Pentane & Toluene	ASTM D893-14	0 to 100 % by weight
		Calorific value	ASTM D240-17	5000 mg/kg to 15000 mg/kg
		Carbon residue (RBCR)	ASTM D524-15 IS: 1448 P8-12 IP14-04	0 to 5 % by weight
		RPVOT (Oxidation Stability)	ASTM D2272-14a	0 to 3000 min.
		Rust Prevention	ASTM D665-14 e1	Qualitative
		Air Release	ASTM D 3427-15	0 to 30 min.
		Copper Corrosion	ASTM D130-12 IS: 1448 P15-11 IP154-13	1a to 4c
		Ash content	ASTM D482-13 IS: 1448 P4-13 IP4-12	0 to 1.0 %
		Soot %	ASTM E 2412-10	0 to 5 % weight
		Soot	ASTM E 2412-10	absorbance per 0.1mm
		Nitration		
		Oxidation		
		Sulfation		
		Water		

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		Diesel		
		Gasoline		
		ZnDDP		
		Glycol		
		Distillation of petroleum products	ASTM D86-16a	110°C to 400°C
II.	PETROLEUM AND PRODUCTS			
1.	Petroleum Products HSD	Kinematic Viscosity @ 40°C	ASTM D445-17 IS: 1448 P25-13 IP71-1997	1 cSt to 10 cSt
		Flash Point (Abel)	IS: 1448 P20-13 IP33 IP170-14	19°C to 70°C
		Flash Point (PMCC)	ASTM D93-16a IS: 1448 P21-12 IP35-16	40 °C to 100 °C
		ASTM Colour	ASTM D1500-12 IS 1448 P12-13 IP196-11	0 to 2
		Total Acid Number(TAN)	ASTM D974-14 e2	0.0 To 10.0 mg KOH/g
		Water Content by Karl fisher	ASTM D1744-13	10 mg/kg to 500 mg/kg
		Specific gravity	ASTM D4052-16 IS: 1448 P16-14 IP160-99	0.650 to 1.100
		Density (Hydrometer)	ASTM D1298-12b IS: 1448 P16-14 IP160-99	0.700 g/ml to 1.000 g/ml
		Density (Auto)	ASTM D4052-16	0.700 g/ml to 1.000 g/ml
		Pour point Test	ASTM D97-17 IS: 1448 P10-13 IP15-14	-51°C to 20°C

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		Copper Strip Corrosion	ASTM D130-12 IS: 1448 P15-11 IP154-13	1a to 4c
		Ash content	ASTM D482-13 IS: 1448 P4-13 IP4-12	0.001 % to 0.100 % mass
		Calorific value by bomb	ASTM D240-17	9000 cal/g to 14000 cal/g
		Carbon residue (RBCR)	ASTM D524-15 IS: 1448 P8-12 IP14-04	0 to 5 % weight
		Sulfur	ASTM D5185-13	0.5 mg/kg to 1000 mg/kg
		Distillation of petroleum products	ASTM D86-12	110°C to 400°C

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