



Accreditation Scope

Geochem Middle East, Dubai, NAL 010 Testing Laboratory, (ISO/IEC 17025:2017)

National Industries Park, South Free zone, Jebel Ali, Dubai, UAE

Issue Date: 28-04-2022

Expiry Date: 27-04-2025

Issue No: 12

Testing Field	Materials/ Products tested	Type of test/ Test parameter/ Properties measured/Range of measurement	Test Method (Standard, Internal Procedure, Technique)	Permanent lab (P) / Client-site (S)
Microbiological	Drinking Water/Water/ Wastewater Clean & Unclean waters	Heterotrophic Plate Count ≥1 CFU	APHA 9215 D & B, 23 rd Ed. 2017	P
		Enumeration of Total Coliforms ≥1 CFU/100ml	APHA 9222 B, 23 rd Ed. 2017	
		Enumeration of E. coli ≥1 CFU/100ml	APHA 9222 B, 23 rd Ed. 2017	
		Enumeration of Pseudomonas aeruginosa ≥1 CFU	APHA 9213 E, 23 rd Ed. 2017	
		Enumeration of Fecal streptococcus ≥1 CFU/100ml	APHA 9230 C, 23 rd Ed. 2017	
		Enumeration of Legionella ≥1 CFU	APHA 9260 J 23 rd Ed. 2017 ISO 11731:2017	
		Enumeration of Fecal coliform ≥1 CFU/100ml	APHA 9222 B&D, 23 rd Ed. 2017	
	Food (including dairy foods)	TPC (Pour plate technique) ≥10 CFU/g	USFDA BAM Chapter 3: 2001 CCFRA 1.1.1:2007	
		Enumeration of Coliforms & E- coli (MPN & Solid medium method)/ ≥3 MPN and ≥10 CFU respectively	USFDA BAM Chapter 4 :2017	
		Detection of E-coli 0157: H7 Detected/ Not Detected	GC-SOP-180 (Neogen Reveal Kit)	
		Yeast & Mold (Spread plate technique) ≥100 CFU	USFDA BAM Chapter 18: 2001	
		Detection of Salmonella ≥1 CFU	USFDA BAM Chapter 5:2018	



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Microbiological	Food (including dairy foods)	Detection of Vibrio parahaemolyticus ≥1 CFU	USFDA BAM Chapter 9: 2004	P
		Enumeration of Listeria monocytogenes ≥10 CFU	CCFRA 3.2.1: 2007 & 3.2.7:2007	
		Detection of Listeria monocytogenes ≥1 CFU	CCFRA 3.2.4: 2007 & 3.2.7:2007	
		Enumeration of Bacillus cereus ≥100 CFU	USFDA BAM Chapter 14: 2012	
		Enumeration of Staphylococcus aureus ≥10 CFU	USFDA BAM Chapter 12: 2016	
	Swab (Hand & Surfaces)	Detection of Staphylococcus aureus ≥1 CFU/swab	GC-SOP-192	
		Detection of Total coliforms ≥1 CFU/swab	GC-SOP-192	
		Detection of E. coli ≥1 CFU/swab	GC-SOP-192	
	Chemical	Wastewater / Irrigation Water	pH@25°C : 1 to 14	
Total Suspended Solids >3 mg/L			APHA 2540 D, 23 rd Ed. 2017	
Total Dissolved Solids > 6 mg/L			APHA 2540C, 23 rd Ed. 2017	
Oil & Grease > 5 mg/L			APHA 5520 B, 23 rd Ed. 2017	
Chemical Oxygen Demand > 5.6 mg/L			APHA 5220 B, 23 rd Ed. 2017	
Chemical Oxygen Demand > 5.6 mg/L			APHA 5220 D, 23 rd Ed. 2017	



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Chemical	Wastewater / Irrigation Water	Biological Oxygen Demand > 2 mg/L	APHA 5210 B, 23 rd Ed. 2017	P
		Metals: Copper, Cadmium, Zinc, Nickel, Chromium, Lead, Cobalt, Manganese, Silver, Iron > 0.05 mg/L	APHA 3120B/ APHA 3030, 23 rd Ed. 2017	
	Drinking Water /Potable water	pH@25 °C 1 to 14	APHA 4500H+B, 23 rd Ed. 2017	
		Conductivity ≥ 0.05 µs/cm	APHA 2510B, 23 rd Ed. 2017	
		Turbidity ≥ 0.10 NTU	APHA 2130B 23 rd Ed. 2017	
		Total Dissolved Solids > 6 mg/L	APHA 2540C, 23 rd Ed. 2017	
		Total Alkalinity as CaCO ₃ > 3 mg/L	APHA 2320 B, 23 rd Ed. 2017	
		Carbonate > 2 mg/L	APHA 2320B, 23 rd Ed. 2017	
		Bicarbonate >3 mg/L	APHA 2320B, 23 rd Ed. 2017	
		Total Hardness > 0.3 mg/L	APHA 2340 B, 23 rd Ed. 2017	
		Calcium > 3 mg/L	APHA 3500CaB, 23 rd Ed. 2017	
		Magnesium > 2 mg/L	APHA 3500Mg.B, 23 rd Ed. 2017	
		Chloride > 3 mg/L	APHA 4500Cl ⁻ . B, 23 rd Ed. 2017	
		Sulphate > 10 mg/L	APHA 4500 SO ₄ ²⁻ -C, 23 rd Ed. 2017	
		Nitrate > 0.5 mg/L	APHA 4500 NO ₃ ²⁻ -B, 23 rd Ed. 2017	
Fluoride > 0.2 mg/L	APHA 4500F-D, 23 rd Ed. 2017			



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Chemical	Drinking Water /Potable water	Chloride > 0.02 mg/L	APHA 4110B, 23 rd Ed. 2017	P
		Sulphate > 0.02 mg/L	APHA 4110B, 23 rd Ed. 2017	
		Bromide > 0.010 mg/L	USEPA 300.1	
		Bromate > 0.005 mg/L	USEPA 300.1	
		Calcium ≥ 0.05 mg/L	APHA 3120B/ APHA 3030 F,23 rd Ed. 2017 APHA 3120B/ APHA 3030 F,23 rd Ed. 2017	
		Magnesium ≥ 0.05 mg/L	APHA 3120B/ APHA 3030 F,23 rd Ed. 2017	
		Sodium ≥ 0.1 mg/L	APHA 3120B/ APHA 3030 F,23 rd Ed. 2017	
		Potassium ≥ 0.1 mg/L	APHA 3120B/ APHA 3030 F,23 rd Ed. 2017	
		Iron ≥ 0.02 mg/L	APHA 3120B/ APHA 3030 F,23 rd Ed. 2017	
	Swimming pool water	pH@25°C 1 to 14	APHA 4500H+B, 23 rd Ed. 2017	
		Total Dissolved Solids > 6 mg/L	APHA 2540 C, 23 rd Ed. 2017	
		Total Hardness > 0.3 mg/L	APHA 2340 B, 23 rd Ed. 2017	
		Total Alkalinity as CaCO ₃ > 3 mg/L	APHA 2320 B, 23 rd Ed. 2017	



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Chemical	Transformer Oil	Kinematic viscosity 0.2 mm ² /s - 300 000 mm ² /s	ASTMD 445-21 ISO 3104-2020	P
		Sulphur (Energy Dispersive X-ray Fluorescence Spectrometry) 17 mg/kg - 4.6 mass %	ISO20847- 2004	
		Pour Point -60°C to 27°C	ASTMD 97-17b	
		Flash Point (Pensky-Martens) Closed cup Tester 40 °C to 370 °C	ASTMD 93-20	
		Density and Relative Density by Digital Density Meter 0.71 to 0.88 g/mL at 15°C	ASTMD 4052-18a ISO12185- 1996	
		Interfacial Tension of Oil against water 0 to 800 mN/m	ASTMD 971-20	
		Corrosive Sulfur 1A to 4C	ASTMD 1275-15	
		Covered Conductor Deposition Test(CCD) Positive/Negative	ISO 62535- 2008	
		ASTM Colour 0.5 to 8.0 ASTM Color	ASTMD 1500-12 (2017)	
		Colour 0.5 to 8.0 ASTM Color	ISO 2049- 1996	
		Acid Number ≥0.01 mg KOH/gram and above	ASTMD 974-21	
		Sludge and Sediment ≥0.01 % by mass	IEC 61125- 2018	



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Chemical	Transformer Oil	Oxidation Stability	IEC 61125- 2018	P
		Water Content Coulometric Karl Fischer Titration 10 mg/kg-25 000 mg/kg	IEC 60814- 1997 ASTMD 1533-20	
		Breakdown Voltage(BDV)	ASTMD1816-12 (Reapproved 2019)	
		Breakdown Voltage(BDV)	IEC 60156- 2018	
		Anti-Oxidant Additives up to 0.5 %	IEC 60666- 2010 ASTMD 2668-07(2021)	
		Furanic Compounds ≥10 ppb	ASTMD 5837-15 IEC 61198- 2002	
		Dissolved Gas Analysis (DGA) ≥1 ppm	ASTMD 3612- 02(2017) IEC 60567-2011	
		Estimated Degree of Polymerization	Chendong Model, ASTM D 5837-15	
		Estimated Degree of Polymerization	De Pablo Model, ASTM D 5837-15	
		Estimated Degree of Polymerization	Pahlavanpour Model, ASTM D 5837-15	



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Chemical	Gas	Analysis of Natural Gas Oxygen, Nitrogen, Hydrogen Sulphide, Carbon dioxide, Methane, Ethane, Propane, Isobutane, n-butane, Iso- pentane, n-pentane, Hexane, Heptane ≥ 0.01 % mol	ASTMD 1945-14 (Reapproved 2019)	P
		Analysis of Natural Gas Oxygen, Nitrogen, Hydrogen Sulphide, Carbon dioxide, Methane, Ethane, Propane, Isobutane, n-butane, Iso- pentane, n-pentane, Hexane, Heptane ≥ 0.01 % mol	GPA 2286:2014	
	Lubricating Oil	Kinematic Viscosity@40°C 0.2 mm ² /s - 300 000 mm ² /s	ASTMD 445-21	
		Kinematic Viscosity@100°C 0.2 mm ² /s to 300 000 mm ² /s	ASTMD 445-21	
	Residual Fuel Oil	Kinematic Viscosity@ 50°C 0.2 mm ² /s to 300 000 mm ² /s	ASTMD 445-21	
	Lubricating Oil	Flash Point (Cleveland) Open Cup Tester ≥ 79 °C (175 °F)	ASTMD 92-18	
Flash Point Small Scale Closed Cup Tester -30 °C to 300 °C		ASTMD 3828-16a (Reapproved 2021)		



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Chemical	Lubricating Oil	Metals (Aluminum, Copper, Chromium, Iron, Lead, Nickel, Sodium, Silicon, Tin, Cadmium, Silver, Titanium, Vanadium, Zinc, Potassium, Magnesium, Manganese, Molybdenum, Boron, Barium, Calcium) ≥ 1 mg/kg	ASTMD 5185-18	P
		Insoluble (pentane) ≥ 0.05 % mass	ASTMD 893-14(2018)	
		Total Acid Number -Color Indicator Titration ≥ 0.01 mg KOH/gram	ASTMD 974- 21	
		Total Base Number- Potentiometric Perchloric Acid Titration) ≤300 mg KOH/g	ASTMD 2896-21 Procedure B	
		Flash Point (Pensky-Martens) Closed Cup Tester 40 °C - 370 °C	ASTMD 93-20 Procedure A	
	Lubricating Oil, Residual Fuel Oil, Diesel, Bitumen	Water Content by Distillation 0 - 25 % volume	ASTMD 95- 13 (Reapproved 2018)	P
	Lubricating Oil, Diesel	Water Content Coulometric Karl Fischer Titration 10 mg/kg - 25 000 mg/kg	ASTMD 6304- 20	
Aviation Fuel	Visual Appearance	ASTMD 4176-21a		



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Chemical	Aviation Fuel	Color (Saybolt Chromometer Method) / Saybolt colour-16 (darkest) - +30 (lightest)	ASTMD 156-15 Manual Method	P
		Color (Automatic Tristimulus Method) 0 - +30	ASTMD 6045-20	
		Particulates 4 micron - 30 micron ≥4µm(c) ≥6µm(c) ≥14µm(c) ≥21µm(c) ≥25µm(c) ≥30µm(c)	IP 564/13(2020)	
		Total Acidity 0.000 mg/g - 0.100 mg/g KOH	ASTMD 3242- 11(2017)	
		Hydrocarbon Types by Fluorescent Indicator Adsorption 5 to 99 volume % aromatics 0.3 to 55volume % olefins 1 to 95 volume % saturates	ASTMD 1319-20a	
		Aviation Fuel, Lubricating Oil, Residual Fuel Oil, Crude Oil	Sulphur Content (Energy Dispersive X-ray Fluorescence Spectrometry) 17 mg/kg - 4.6 mass %	
	Aviation Fuel, Gasoline, Naphtha, Kerosene	Mercaptan Sulfur (Potentiometric Method) 0.0003 % - 0.01 %	ASTMD 3227-16	
	Aviation Fuel	Distillation at Atmospheric Pressure	ASTMD 86-20b Manual method	
		Flash point -Tag Closed Cup Tester -5 to 66.5 °C	IP 170-2021	
		Density and Relative Density by Hydrometer Method 600 - 1100 kg/m ³ at 15°C	ASTMD 1298- 12b(2017)	



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Chemical	Aviation Fuel, Gasoline, Lubricating Oil	Density and Relative Density by Digital Density Meter 0.71 - 0.88 g/mL at 15°C	ASTMD 4052-18a	P
	Aviation Fuel	Freezing point -80 °C to +20 °C	ASTMD 2386- 19	
		Viscosity at-20°C,cSt(mm ² /s) 0.2 mm ² /s - 300 000 mm ² /s	ASTMD 445- 21	
		Specific Energy, net MJ/kg 40.19 - 44.73 MJ/kg[17 280 - 19 230 Btu per pound]	ASTMD 3338-20a	
		Naphthalenes by Ultraviolet Spectrophotometry 0.03 - 4.25 % vol	ASTMD 1840-07(2017)	
	Aviation Fuel, Gasoline, Naphtha, Lubricating Oil	Corrosiveness to Copper by Copper Strip Test (Copper Strip Classification) 1A - 4C	ASTMD 130-19	
	Aviation Fuel	Thermal Stability (JFTOT) control- Control Temp Filter pressure differential Tube deposit rating	ASTMD 3241-20c	
		Existent Gum ≥ 1.0 mg/100 ml	IP 540/8-2019	
		Micro separameter(MSEP), Water Separation Characteristics by Portable Separameter 50 - 100 rating	ASTMD 3948-20	



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Chemical	Aviation Fuel	Electrical Conductivity 0- 1500 pS/m	ASTMD 2624-21a	P	
	Diesel Oil	Appearance	ASTMD 4176-21a		
	Diesel Oil, Lubricating Oil	Colour ASTM (ASTM Color Scale) 0.5 - 8.0 ASTM Color	ASTMD 1500-12 (2017)		
	Diesel Oil, Residual Fuel oil, Lubricating Oil	Ash 0.001 - 0.180 mass %	ASTMD 482-19		
	Diesel Oil		Gross Calorific value, > 0.01MJ/kg		ASTMD 4868-17
			Net Calorific value, > 0.01MJ/kg		ASTMD 4868-17
			Acid Number-Total ≥0.01 mg KOH/gram		ASTMD 974-21
			Cetane Index 30 - 60 cetane number		ASTMD 976-21, ASTMD 4737-21
			Copper Strip Corrosion, 3 hrs.100 °C 1A - 4C		ASTMD 130-19
			Density and Relative Density by Hydrometer Method 600 - 1100 kg/m ³ at 15°C		ASTMD 1298- 12b (2017)
			Density and Relative Density by Digital Density Meter 0.71-0.88 g/mL at 15°C		ASTMD 4052-18a
			Distillation at Atmospheric Pressure		ASTMD 86-20b Manual method



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Chemical	Diesel Oil	Flash Point (Pensky-Martens) Closed Cup Tester 40 °C - 370 °C	ASTMD 93-20 Procedure A	P
		Pour point -60°C - 27°C	ASTMD 97-17b	
		CFPP Maximum 67 °C	ASTMD 6371-17a IP 309-2016	
		Sédiment and Water > 0.01 %	ASTMD 2709-16	
		Sulphur by Ultraviolet Fluorescence 1.0 mg/kg - 8000 mg/kg	ASTMD 5453-19a	
		Kinematic Viscosity @40°C 0.2 mm ² /s - 300 000 mm ² /s	ASTMD 445-21	
		Lubricity, By the High-Frequency Reciprocating Rig (HFRR)	ASTMD 6079-2018	
		Oxidation Stability (Accelerated Method)	ASTMD 2274-14 (Reapproved 2019)	
		Electrical Conductivity 0- 1500 ps/m	ASTMD 2624-21a	
		Sulphur Content (Energy Dispersive X-ray Fluorescence Spectrometry) 17 mg/kg to 4.6 mass %	ASTM D4294-21	
END				