

Date

Reference

2023-09-06

2022/2334

Scope of accreditation

Testing according to SS-EN ISO/IEC 17025:2018

Element Materials Technology AB

Linköping

Accreditation number

0067

ASJ-vägen 7, Linköping, Tannefors

A000871-002

Chemical analysis

Technical area	Parameter	Method	Technique	Measure	Material	Flex	Type of flex	Field	Note
Fuel analysis	Acidity	ASTM D3242	Titration	0,001-0,1 mg KOH/g	Kerosene	Yes	2	No	
		ASTM D664, mod	Titration	0,05-10 mg KOH/g	Lubricating oil	Yes	2	No	
	Ash content	ASTM D482	Gravimetry	2-1800 mg/kg	Fuel oil	Yes	2	No	
			Gravimetry	2-1800 mg/kg	Gas oil	Yes	2	No	
		SS-EN ISO 6245	Gravimetry	2-1800mg/kg	Fuel oil	Yes	2	No	
			Gravimetry	2-1800mg/kg	Gas oil	Yes	2	No	
	Base number	ASTM D4739, mod	Titration	1-20 mg KOH/g	Lubricating oil	Yes	2	No	
	Calorific value	ASTM D3338	Calculation	40-45 MJ/kg	Kerosene	Yes	2	No	
		ASTM D4868	Calculation	40-45 MJ/kg	Gas oil	Yes	2	No	net
			Calculation	43-47 MJ/kg	Gas oil	Yes	2	No	gross
	Cetane index	ASTM D4737	Calculation	25-85 enheter	Gas oil	Yes	2	No	
	Cloud point	ASTM D2500		-63- 20°C	Gas oil	Yes	2	No	
		ASTM D5771		-60- 49°C	Gas oil	Yes	2	No	
		SS-EN 23015, mod		-63- 20°C	Gas oil	Yes	2	No	
	Cold filter plugging point, CFPP	SS-EN 116	Filtration	- 40-0 °C	Gas oil	Yes	2	No	
Copper corrosion	ASTM D130		1 – 4	Fuel oil	Yes	2	No		
			1 – 4	Gas oil	Yes	2	No		
			1 – 4	Gasoline	Yes	2	No		

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Fuel analysis	Copper corrosion	ASTM D130		1 – 4	Kerosene	Yes	2	No	
				1 – 4	Lubricating oil	Yes	2	No	
	Density	ASTM D4052	U-shaped oscillating tube	650-975 kg/m ³	Gas oil	Yes	2	No	
			U-shaped oscillating tube	650-975 kg/m ³	Gasoline	Yes	2	No	
			U-shaped oscillating tube	650-975 kg/m ³	Kerosene	Yes	2	No	
			U-shaped oscillating tube	650-975 kg/m ³	Lubricating oil	Yes	2	No	
	Distillation	ASTM D86		32-400°C	Gas oil	Yes	2	No	
				32-400°C	Gasoline	Yes	2	No	
				32-400°C	Kerosene	Yes	2	No	
		SS-EN ISO 3405		32-400°C	Gas oil	Yes	2	No	
				32-400°C	Gasoline	Yes	2	No	
				32-400°C	Kerosene	Yes	2	No	
	Evaporation residue	ASTM D381, mod	Gravimetry	1-10 mg/100 ml	Kerosene	Yes	2	No	
	Flash point	ASTM D92	Cleveland Open Cup	79 - 400°C	Lubricating oil	Yes	2	No	Aut
		ASTM D93	Pensky-Martens Closed Cup	40-150°C	Gas oil	Yes	2	No	
			Pensky-Martens Closed Cup	40-150°C	Kerosene	Yes	2	No	
			Pensky-Martens Closed Cup	40-150°C	Lubricating oil	Yes	2	No	
		IP 170	Abel closed cup	30-75°C	Kerosene	Yes	2	No	
SS-EN ISO 2592		Cleveland Open Cup	79 - 400°C	Lubricating oil	Yes	2	No		

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Fuel analysis	Flash point	SS-EN ISO 2719	Pensky-Martens Closed Cup	40-150°C	Gas oil	Yes	2	No	
			Pensky-Martens Closed Cup	40-150°C	Kerosene	Yes	2	No	
			Pensky-Martens Closed Cup	40-150°C	Lubricating oil	Yes	2	No	
	Freezing point	ASTM D7153		-80- 20 °C	Gasoline	Yes	2	No	Modifierad
				-80- 20 °C	Kerosene	Yes	2	No	
	Gum content	ASTM D381	Gravimetry	1-10 mg/100 ml	Gasoline	Yes	2	No	Aktuell
		ASTM D873	Gravimetry	1-10 mg/100 ml	Gasoline	Yes	2	No	Potentiell
	Hydrogen, H	ASTM D3343	Calculation	10-20 mass %	Kerosene	Yes	2	No	
	Lubricity	ASTM D5001	Microscopic measurement	0,50-0,90 mm	Kerosene	Yes	2	No	
	Mercaptan sulfur	ASTM D3227	Titration	0,0003-0,01 massa %	Kerosene	Yes	2	No	
	Microbiological analysis	IP 613	Visual testing	> 2000	Refined oils	Yes	2	No	Även associerat vatten
	Naphthalenes	ASTM D1840	Photometry	0,1-5 vol%	Kerosene	Yes	2	No	
	Particle contamination	ASTM D5452	Gravimetry	0,01-100 mg/l	Kerosene	Yes	2	No	
	Particulate contamination	ASTM D7647		≥14 µm(c) 64-1 miljoner antal/100ml	Lubricating oil	Yes	2	No	
			≥4 µm(c) 1000-64 miljoner antal/100ml	Lubricating oil	Yes	2	No		
			≥6 µm(c) 250-16 miljoner antal/100ml	Lubricating oil	Yes	2	No		
IP 577			≥14 µm(c) 9,2 – 6396 antal/ml	Kerosene	Yes	2	No		

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Fuel analysis	Particulate contamination	IP 577		≥21 µm(c) 4,9 – 2632 antal/ml	Kerosene	Yes	2	No		
				≥25 µm(c) 4,5 – 1484 antal/ml	Kerosene	Yes	2	No		
				≥30 µm(c) 4,4 – 604 antal/ml	Kerosene	Yes	2	No		
				≥4 µm(c) 140,3 – 24000 antal/ml	Kerosene	Yes	2	No		
				≥6 µm(c) 41,4 – 24000 antal/ml	Kerosene	Yes	2	No		
				≥70 µm(c) 0,6 – 4 antal/ml	Kerosene	Yes	2	No		
			ISO 4406		≥14 µm(c) ISO kod 10 - 20	Kerosene	Yes	2	No	
				≥14 µm(c) ISO kod 9-24	Lubricating oil	Yes	2	No		
				≥21 µm(c) ISO kod 9 - 19	Kerosene	Yes	2	No		
				≥25 µm(c) ISO kod 9 - 18	Kerosene	Yes	2	No		
				≥30 µm(c) ISO kod 9 - 16	Kerosene	Yes	2	No		
				≥4 µm(c) ISO kod 11-26	Lubricating oil	Yes	2	No		
				≥4 µm(c) ISO kod 14 - 22	Kerosene	Yes	2	No		
		≥6 µm(c) ISO kod 13 - 22		Kerosene	Yes	2	No			
	≥6 µm(c) ISO kod 7-20	Lubricating oil	Yes	2	No					
	Peroxide content	ASTM D3703		0,1-100 mg/kg	Kerosene	Yes	2	No		

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Fuel analysis	Pour point	ASTM D5950		> -69 °C	Lubricating oil	Yes	2	No		
	Saybolt Colour	ASTM D156		-16 - + 30	Refined oils	Yes	2	No		
	Smoke point	ASTM D1322		15-40 mm	Kerosene	Yes	2	No		
	Sulfur, S	ASTM D4294, mod	XRF		10-1000 mg/kg	Gas oil	Yes	2	No	
			XRF		10-1000 mg/kg	Kerosene	Yes	2	No	
		SS-EN ISO 13032, mod	XRF		1-100 mg/kg	Gas oil	Yes	2	No	
			XRF		1-100 mg/kg	Gasoline	Yes	2	No	
	Thermal oxidation rod. JFTOT, amount passed	ASTM D3241		> 0 ml	Kerosene	Yes	2	No		
	Thermal oxidation stability, JFTOT, pressure drop	ASTM D3241		0-250 mm Hg	Kerosene	Yes	2	No		
	Thermal oxidation stability, JFTOT, tube rating	ASTM D3241		0-4 enheter	Kerosene	Yes	2	No		
	Thermal stability JFTOT, spent volume	ASTM D3241		0 - 240 nm	Kerosene	Yes	2	No		
	Viscosity, 100°C	ASTM D445	Viscometer		> 1 mm ² /s	Lubricating oil	Yes	2	No	aut
		SS-EN ISO 3104	Viscometer		> 1 mm ² /s	Lubricating oil	Yes	2	No	
	Viscosity, 40°C	ASTM D445	Viscometer		> 1 mm ² /s	Lubricating oil	Yes	2	No	aut
			Viscometer		>1 mm ² /s	Gas oil	Yes	2	No	aut
		SS-EN ISO 3104	Viscometer		> 1 mm ² /s	Gas oil	Yes	2	No	
			Viscometer		> 1 mm ² /s	Lubricating oil	Yes	2	No	
	Water content	ASTM D6304	Coulometric Karl Fischer		0,005-2 mass %	Gas oil	Yes	2	No	
Coulometric Karl Fischer				0,005-2 mass %	Gasoline	Yes	2	No		
Coulometric Karl Fischer				0,005-2 mass %	Kerosene	Yes	2	No		

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Fuel analysis	Water content	ASTM D6304	Coulometric Karl Fischer	0,005-2 mass %	Lubricating oil	Yes	2	No	
	Water reaction	ASTM D1094		1-4 enheter	Gasoline	Yes	2	No	
				1-4 enheter	Kerosene	Yes	2	No	
	Water separations characteristics, MSEP	ASTM D3948		50-100 enheter	Kerosene	Yes	2	No	
ASTM D7224			50-100 enheter	Kerosene	Yes	2	No		
Inorganic chemistry	Aluminium, Al	ASTM D5185, mod	ICP-AES	0,20-500 mg/kg	Lubricating oil	Yes	2	No	
	Barium, Ba	ASTM D5185, mod	ICP-AES	0,01-500 mg/kg	Lubricating oil	Yes	2	No	
	Boron, B	ASTM D5185, mod	ICP-AES	3,0-500 mg/kg	Lubricating oil	Yes	2	No	
	Cadmium, Cd	ASTM D5185, mod	ICP-AES	0,05-500 mg/kg	Lubricating oil	Yes	2	No	
	Calcium, Ca	ASTM D5185, mod	ICP-AES	0,10-500 mg/kg	Lubricating oil	Yes	2	No	
	Chromium, Cr	ASTM D5185, mod	ICP-AES	0,05-500 mg/kg	Lubricating oil	Yes	2	No	
	Copper, Cu	ASTM 7111	ICP-AES	10 – 500 µg/kg	Kerosene	Yes	2	No	
		ASTM D5185, mod	ICP-AES	0,02-500 mg/kg	Lubricating oil	Yes	2	No	
	Iron, Fe	ASTM D5185, mod	ICP-AES	0,10-500 mg/kg	Lubricating oil	Yes	2	No	
	Lead, Pb	ASTM D5185, mod	ICP-AES	0,70-500 mg/kg	Lubricating oil	Yes	2	No	
	Magnesium, Mg	ASTM D5185, mod	ICP-AES	0,20-500 mg/kg	Lubricating oil	Yes	2	No	
	Manganese, Mn	ASTM D5185, mod	ICP-AES	0,01-500 mg/kg	Lubricating oil	Yes	2	No	
	Molybdenum, Mo	ASTM D5185, mod	ICP-AES	0,30-500 mg/kg	Lubricating oil	Yes	2	No	
	Nickel, Ni	ASTM D5185, mod	ICP-AES	0,20-500 mg/kg	Lubricating oil	Yes	2	No	
	Phosphorus, P	ASTM D5185, mod	ICP-AES	10-4000 mg/kg	Lubricating oil	Yes	2	No	
	Potassium, K	ASTM D5185, mod	ICP-AES	1,5-500 mg/kg	Lubricating oil	Yes	2	No	
	Silicon, Si	ASTM D5185, mod	ICP-AES	0,20-500 mg/kg	Lubricating oil	Yes	2	No	
	Silver, Ag	ASTM D5185, mod	ICP-AES	0,05-500 mg/kg	Lubricating oil	Yes	2	No	
	Sodium, Na	ASTM D5185, mod	ICP-AES	0,30-500 mg/kg	Lubricating oil	Yes	2	No	
	Tin, Sn	ASTM D5185, mod	ICP-AES	0,60-500 mg/kg	Lubricating oil	Yes	2	No	
Titanium, Ti	ASTM D5185, mod	ICP-AES	0,01-500 mg/kg	Lubricating oil	Yes	2	No		

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Inorganic chemistry	Vanadium, V	ASTM D5185, mod	ICP-AES	0,05-500 mg/kg	Lubricating oil	Yes	2	No	
	Zinc, Zn	ASTM D5185, mod	ICP-AES	0,30-500 mg/kg	Lubricating oil	Yes	2	No	

Material testing

<i>Technical area</i>	<i>Parameter</i>	<i>Method</i>	<i>Technique</i>	<i>Measure</i>	<i>Material</i>	<i>Flex</i>	<i>Type of flex</i>	<i>Field</i>	<i>Note</i>
	Hardness Testing	SS-EN ISO 6507-1	Vickers		Metallic materials	Yes	2	No	
	Moisture conditioning	ASTM D5229			Composites	Yes	2	No	Endast metod B, C, D
	Short-Beam strength	ASTM D2344			Composites	Yes	2	No	
	Tensile Testing	SS-EN ISO 6892-1			Metallic materials	Yes	2	No	
Corrosion testing	Salt mist	ASTM B117			Metallic materials	Yes	2	No	
Metallography	Macro, micro	SS-EN ISO 17639			Weld	Yes	2	No	

Changes in the scope of accreditation are in bold.

The scope of accreditation is flexible as specified in this decision. The accredited body must always retain a current list of the scope for which it is accredited.

Type of flexible scope

- 1: - Introduce new version of standard method and make editorial changes to non-standard method
- 2: - Introduce new version of standard method and make editorial changes to non-standard method - Introduce new version and modifications of non-standard method. The procedure must be equivalent - Introduce new parameter/component/characteristics - Introduce new measurement range - Introduce new material/new products/matrices - Introduce new method equivalent to methods already in the accreditation decision