



# **Analytical Capability 2008**

Oil, Gas & Chemicals  
Laboratorys Germany

(01.01. - 31.12.2008)

Analysis	Method			Sample amount [ml]
<b>A</b>				
Acid Wash Color	ASTM D 848	-	Aromatics	20
	DIN 51762	-	Aromatics	20
	ASTM E 346		Chemicals	20
Ageing of Turbine Oils (1000 h Test)	DIN 51587	-	Industrial Oil	1000
	DIN EN ISO 4263-2	-	Industrial Oil	1000
Air release value	DIN ISO 9120	-	Industrial Oil	200
Alcohols in Diesel Fuel	DIN EN 14110 mod.	-	Diesel	10
Aldehydes	ISO 22241-2 Annex F	-	NOx reduction agent	50
Alkalinity and acidity	BS 5711-5	-	Raw glycerol	50
Alkalinity as NH3	ISO 22214-2 Annex D	-	NOx reduction agent	20
Aniline Point	ASTM D 611	-	Liquid mineral oil products	10
	DIN ISO 2977	-	Liquid mineral oil products	10
Anions (Fluoride, Chloride, Bromide, Nitrite, Nitrate, Phosphate, Sulfate)	DIN EN ISO 10304-1	-	Liquid mineral oil products	-
Sample preparation + 1 anion		-		
each further anion		-		20

Analysis	Method			Sample amount [ml]
Anti-Knock-Index (RON+MON)/2	ASTM D 2699 + 2700	-	Gasoline	1000
Appearance	ASTM D 4176	-	Liquid mineral oil products	500
	visual	-	Liquid mineral oil products	500
	IMPCA 003	-	Methanol	500
Aromatics	ASTM D 3606 mod.	-	Chemicals	20
	UOP 495	-	Chemicals	20
	see PONA	-	Gasoline	20
Aromatics Distribution	DIN EN 12916	-	Diesel	5
Ash	ASTM D 482	-	Liquid mineral oil products	100
	DIN EN ISO 6245	-	Liquid mineral oil products	100
	BS 5711-6		Raw glycerol	20
	DGF E III 4	-	Raw glycerol	20
Asphaltene	ASTM D 6560	-	Residual Fuel Oil	25
	DIN 51595	-	Residual Fuel Oil	25
	Total Methode	-	Residual Fuel Oil	25
Aviation Perform Number	ASTM D 2700	-	Jet	500
<b>B</b>				
Basic Nitrogen	UOP 269	-	Liquid mineral oil products	100
Benzene	DIN EN 14517	-	Gasoline	10

Analysis	Method			Sample amount [ml]
Biodiesel in Diesel	DIN EN 14078	-	Diesel	10
Biuret	ISO 22241-2 Annex E	-	NOx reduction agent	150
BOCLE Test	ASTM D 5001	-	Jet	1000
Boiling point	ASTM D 1837		LPG	100
Bromine Acceptance	DIN 51774-1	Dead Stop > 0.5g/100g	Chemicals	25
	DIN 51774-2	Dead Stop < 0.5g/100g	Chemicals	25
	DIN 51774-3	Iodometric	Chemicals	25
	DIN ISO 15597	RFA	Liquid mineral oil products	25
Bromine Index	ASTM D 1492	-	Aromatics	50
	ASTM D 2710	-	Chemicals	50
Bromine Number	ASTM D 1160 / ASTM D 1159	form distillate until 360°C / low pressure	Crude oil / Heavy fuel oil	500
	ASTM D 86 / ASTM D 1159	form distillate until 360°C / atmospheric	Crude oil / Heavy fuel oil	150
	ASTM D 1159	-	Liquid mineral oil products	50
	ISO 3839	-	Liquid mineral oil products	50
<b>C</b>				
C:H Ratio	ASTM D 5291 Part C mod.	-	Liquid mineral oil products	2
C:H Ratio	DIN 51 721	-	Liquid mineral oil products	50

Analysis	Method			Sample amount [ml]
C:H:N Ratio	ASTM D 5291 Part C mod.	-	Diesel	10
C:H:O Ratio	ASTM D 5291 Part C mod.	-	Liquid mineral oil products	2
C:H:O Ratio of gasolines	calculated from DIN EN 14517	-	Gasoline	2
Calculation	-	-	-	-
Calorific Value	ASTM D 4868	-	Jet	25
Calorific Value (calculated)	DIN 51603-1	incl. Sulfur, Density	Heating oil	25
	DIN 51603-1 (Draft)	incl. Sulfur, Density	Heating oil	25
Calorific Value (gross)	ASTM D 240	-	Liquid mineral oil products	10
	ASTM D 4809	-	Liquid mineral oil products	10
	DIN 51900-3	-	Liquid mineral oil products	10
Calorific Value (net), incl CH	ASTM D 240	-	Liquid mineral oil products	10
	ASTM D 4809	-	Liquid mineral oil products	10
	DIN 51900-3	-	Liquid mineral oil products	10
Carbon residue	ASTM D 4530	Original sample	Liquid mineral oil products	10
Carbon Residue (Micro)	DIN EN ISO 10370	Original sample	Liquid mineral oil products	10
Carbon residue 10%	ASTM D 4530	after Distillation	Diesel	100
	DIN EN ISO 10370	after Distillation	Diesel	100
Carbon Residue 10% (Biodiesel)	DIN EN ISO 10370	incl. D1160 Distillation	FAME	200
Carbonyle	ASTM E 411	-	Chemicals	100
	ASTM E 346	-	Methanol	100

Analysis	Method			Sample amount [ml]
CCS - Viskosity	ASTM D 5293	each Temperature	Engine Oil (Unused Oil)	60
	DIN 51377	each Temperature	Engine Oil (Unused Oil)	60
Cetane Index	ASTM D 4737 A/B	incl. Density, Distillation	Diesel	105
	calculated	without Density, Distillation	Diesel	-
	DIN EN ISO 4264	incl. Density, Distillation	Diesel	105
Cetane Number	ASTM D 613	CFR (Range 35 until 65)	Diesel	1000
	ASTM D 613	CFR (under 35; over 65)	Diesel	1500
	DIN EN ISO 5165	CFR (Range 35 until 65)	Diesel	1000
	DIN EN ISO 5165	CFR (under 35; over 65)	Diesel	1500
Cetane Number	DIN 51773	BASF	Diesel	1000
Cetane Number (derived) with FIT	ASTM D 7170	-	Bio oil	250
	ASTM D 7170	incl. Ignition Delay, Chamber pressure	Bio oil	250
CFPP	ASTM D 6371	-	Diesel	45
	DIN EN 116	-	Diesel	45
Chloride	UOP 588	-	Ethanol	20
	BS 5711/12	-	Raw glycerol	5
	ASTM D 4929	coulometric	Crude oil	100
Chlorine	ASTM D 5808	coulometric	Liquid mineral oil products	2
	DIN EN 14077	coulometric	Liquid mineral oil products	2
	DIN ISO 15597	RFA	Liquid mineral oil products	20
Chlorine, inorganic	prEN 15489	-	Ethanol	20

Analysis	Method			Sample amount [ml]
Cloudpoint	ASTM D 2500	-	Diesel	45
	ASTM D 5772	Linear	Diesel	30
	DIN EN 23015	-	Diesel	45
Colony Forming Units	48 h / 72 h @ 30°C	Quick test	Liquid mineral oil products	50
	IP 385	-	Liquid mineral oil products	500
Colour	ASTM D 1209	Pt/Co	Chemicals	100
	DIN EN ISO 6271-1, -2	Pt/Co	Chemicals	100
	ASTM D 156	Saybolt	Chemicals + Blends	200
	ASTM D 3701	Millipore	Jet	
	ASTM D 1500	-	Liquid mineral oil products	45
	DIN ISO 2049	-	Liquid mineral oil products	45
	visual	-	Liquid mineral oil products	10
Compatibility	ASTM D 4740	-	Residual Fuel Oil	10
Composition	-	-		
Conductivity (electrical)	ASTM D 1125 mod.	-	Gasoline // Gasohole bis 200000 pS/m	100
	ASTM D 2624	-	Liquid mineral oil products until 2000 pS/m	1000
	DIN EN 27888	-	Water	100
Contamination	see solid containation	-		
Copper Corrosion	ASTM D 849	-	Aromatics	200
	ASTM D 1838	-	Liquid gas	100
	DIN EN ISO 6251	-	Liquid gas	100
	ASTM D 130	-	Liquid mineral oil products	30
	DIN EN ISO 2160	-	Liquid mineral oil products	30

Analysis	Method		Sample amount [ml]
Crude Assay	ASTM D 2892 / ASTM D 5236	-	Crude oil 5000
<b>D</b>			
Density	ASTM D 5002	-	Crude oil 5
	ASTM D 2598	incl. Composition and Inert Gases calc	Liquid gas 100
	DIN 51618	incl. Composition and Inert Gases calc	Liquid gas 100
	DIN EN ISO 8973	incl. Composition and Inert Gases calc	Liquid gas 100
	ASTM D 4052	-	Liquid mineral oil products 5
	DIN EN ISO 12185	-	Liquid mineral oil products 5
Density API	ASTM D 4052	-	Liquid mineral oil products 5
Density Diagram (0°C bis 80°C)	ASTM D 4052	-	Liquid mineral oil products 35
Diene Number	UOP 326	-	Gasoline 25
Dienes	Inhouse method	GC Method	Gasoline 25
Distillation	ASTM D 86	-	Liquid mineral oil products 100
	DIN EN ISO 3405	-	Liquid mineral oil products 100
Distillation (low pressure)	ASTM D 1160	-	Residual Fuel Oil 250
	ASTM D 5236	-	Residual Fuel Oil 1000

Analysis	Method			Sample amount [ml]
Distillation Range	ASTM D 850	-	Aromatics	100
	ASTM D 1078	-	Chemicals	100
	ASTM D 1120	-	Coolants	100
	ASTM D 5307 mod.	incl. PIANO	Crude oil	2
	ASTM D 3710	-	Gasoline	2
	ASTM D 2887	until 545°C	Liquid mineral oil products	2
	ASTM D 6352	until 724°C	Liquid mineral oil products	2
	DIN 51435	until 635°C	Liquid mineral oil products	2
Distillation. True Boiling Point	ASTM D 2892	recovery only	Liquid mineral oil products	100
Doctor Test	ASTM D 4952	-	Liquid mineral oil products	20
	DIN ISO 5275	-	Liquid mineral oil products	20
Documentation	Digital Camera	-		-
	Microscope	-		-
	Original Report	-		-
DSC	ASTM D 6186	each Temperature	Engine- und Industrial Oil	1
	PDSC CEC - PL 085	-	Engine- und Industrial Oil	1
Dye content	DIN 51426/1	Red marker with unmarked reference	Heating oil EL	10
Dye content	DIN 51426/2	Red marker without unmarked reference	Heating oil EL	10
	DIN 51426/2+3	Red marker + Yellow marker	Heating oil EL	10
	DIN 51426/3	Yellow marker	Heating oil EL	10

Analysis	Method			Sample amount [ml]
<b>E</b>				
Element analysis	Inhouse method	RFA (Fest; halbquantitativ)	-	10
	ASTM D 7111	ICP	Diesel	5
	ASTM D 5185	ICP	Engine- und Industrial Oil	5
	DIN 51391-3	ICP (Additiv elements Ca; Mg; Zn; Ba)	Engine- und Industrial Oil	5
	DIN 51396-1	ICP (Wear elements)	Engine- und Industrial Oil	5
	Inhouse method	RFA	Engine- und Industrial Oil	10
	DIN EN 14538	ICP (Na; K; Ca; Mg in Biodiesel)	FAME	10
	Inhouse method	RFA (as Borate pellet)	Filter masse	
	Inhouse method	ICP (1 Element)	Liquid mineral oil products	5
	Inhouse method	ICP (2 Elements)	Liquid mineral oil products	5
	Inhouse method	ICP (more than 2 Elemente)	Liquid mineral oil products	5
	Inhouse method	RFA (on filter; semiquantitative)	Liquid mineral oil products	10
	IP 501	Al, Si, V, Ca, P, Zn	Marine Fuel	20
	ISO 22241-2 Annex I	ICP	NOx reduction agent	20
Elemental Sulfur / Active Sulfur	UOP 700 mod.	-	Fuels	20
	DIN 51613 (LPG)	LPG	Liquid gas	600
	DIN 51613 mod.	Polarographie	Liquid gas	600
Elemental Sulfur + COS sulfur	DIN 51613 + DIN 51855-6	-	Liquid gas	600
Ester Content	DIN EN 14103	-	FAME	1

Analysis	Method			Sample amount [ml]
Esters distribution	DIN EN 14103 mod.	calulated (without Ester content)	FAME	1
	DIN EN 14103 mod.	incl. Ester content	FAME	1
Esters distribution in Diesel/FAME blends	DIN EN 14331	-	Diesel/FAME blends	1
Ethanol Content	EC/2873/2000 Appendix 2 Procedure B	-	Ethanol	5
Ethyl hexyl nitrate	Inhouse method	-	Diesel	5
<b>F</b>				
Fatty acids in Diesel/FAME blends	Inhouse method SGS 253	-	Biodieselblends	20
FIA analysis	ASTM D 1319	-	Liquid mineral oil products	5
Filtration time	see SEDAB	-		
Flash + Burning Point	ASTM D 92	Cleveland	Engine and industrial oil	100
	DIN EN ISO 2592	Cleveland	Engine and industrial oil	100
Flashpoint	ASTM D 92	Cleveland	Engine and industrial oil	100
	DIN EN ISO 2592	Cleveland	Engine and industrial oil	100
	DIN EN ISO 3679	Seta	FAME, Jet, Chemicals	20
	ASTM D 56	Tag	Jet	100
	ASTM D 93	Pensky Martens	Liquid mineral oil products	100
	DIN EN ISO 2719	Pensky Martens	Liquid mineral oil products	100

Analysis	Method			Sample amount [ml]
Fluorid	DIN 51 408/1 mod. / IC	after Wickbold	Gasoline	100
Foaming Characteristics	ASTM D 6082	Sequenz IV	Engine- und Industrial Oil	220
	ASTM D 892	Sequenz I	Engine- und Industrial Oil	220
	ASTM D 892	Sequenz II + III	Engine- und Industrial Oil	220
	ASTM D 892	Sequenz I + II + III	Engine- und Industrial Oil	450
Free fatty acids	Inhouse method SGS 205	-	FAME	5
Freezing Point	ASTM D 2386	-	Jet	50
	DIN ISO 3013	-	Jet	50
Fuel dilution			Engine Oil	
- by Diesel fuel	ASTM D 3524	-		1
- by Diesel fuel	DIN 51380	-		1
- by Diesel fuel	Inhouse method	-		1
Fuel dilution			Engine Oil	
- by Diesel fuel + FAME	Inhouse method	-		1
Fuel dilution			Engine Oil	
- by FAME	Inhouse method	-		1
- by Bio oil	Inhouse method	-		1
Fuel dilution			Engine Oil	
- by gasoline	ASTM D 3525	-		1
- by gasoline	DIN 51380	-		1
- by gasoline	Inhouse method	-		1

Analysis	Method			Sample amount [ml]
<b>G</b>				
GC-AED-Screening	-	-	-	2
GC-FID Analysis	-	-	-	2
GC-MS-Screening	-	-	-	2
GC-MS-Screening (Interpretation)	-	-	-	
Glycerides	BS 5711-3		Raw glycerol	5
	DGF E III 3a	-	Raw glycerol	5
Glycerides/Glycerol in Biodiesel	DIN EN 14105	-	FAME	1
Glycol Content	ASTM D 4291	-	Engine Oil	5
	DIN 51375-2	-	Engine Oil	5
	Inhouse method	Hach quick test	Engine Oil	5
Gum	ASTM D 1353	-	Chemicals	100
	DIN 53172	-	Chemicals	100
	ASTM D 381	-	Gasoline	50
	DIN EN ISO 6246	-	Gasoline	50
	ASTM D 381	-	Jet	50
	DIN 51613	-	LPG	600

Analysis	Method			Sample amount [ml]
<b>H</b>				
Highboiling Compounds in Gasoline	Inhouse method		Gasoline	2
Higher Alcohols	see Oxigenates	-	-	
HTHS - Viscosity	ASTM D 4741	-	Engine Oil (Unused Oil)	60
	CEC-L-36-A-97	-	Engine Oil (Unused Oil)	60
Hydrogen sulfide	DIN 51766	-	Clear mineral oil products	90
	UOP 163	-	Clear mineral oil products	50
	DIN EN ISO 8819	-	Liquid gas	200
	ASTM D 5705 / Dräger		Liquid mineral oil products	100
	IP 399		Liquid mineral oil products	1000
	UOP 163		Liquid mineral oil products	100
Hydrogen sulfide + Sulfur dioxide	ASTM D 853	-	Aromatics	50
<b>I</b>				
ICP	see Element analysis	-		
Interfacial Tension	ASTM D 971	-	Liquid mineral oil products	100
Iodine Number	DIN 53241-1	-	FAME	2
	DIN EN 14111	-	FAME	2
Iron	ASTM D 5185 mod.	ICP	Chemicals	10

Analysis	Method		Sample amount [ml]
IR-Spectrum	DIN 51451	-	Liquid mineral oil products 15
<b>L</b>			
Lead	ASTM D 3237	AAS	Gasoline 25
	ASTM D 5059	RFA > 25mg/l	Gasoline 20
	DIN 51769-6	RFA >25mg/l	Gasoline 20
	DIN EN 13723	RFA 4-25mg/l	Gasoline 20
	DIN EN 237	AAS	Gasoline 25
Lead Components (volatile)	GC AED	-	Gasoline 2
Long Term Tests (per medium, per hour)	-	-	-
Lube oil content	DIN 51784	-	Two-stroke engine gasoline 50
Lubricity (HFRR)	ASTM D 6079	-	Diesel 5
	DIN ISO 12156-1	-	Diesel 2
Lubricity (HFRR) of Gasoline	DIN ISO 12156-1 mod.	First sample of a series	Gasoline 10
	DIN ISO 12156-1 mod.	every further sample of a series	Gasoline 10

Analysis	Method			Sample amount [ml]
<b>M</b>				
Mercaptan Sulfur + H <sub>2</sub> S	ASTM D 3227	-	Liquid mineral oil products	50
	DIN 51796	-	Liquid mineral oil products	50
	ISO 3012	-	Liquid mineral oil products	50
	UOP 163	-	Liquid mineral oil products	50
Metals	see Element analysis	-		
Methanol in Biodiesel	DIN EN 14110	-	FAME	2
Microscope Picture	-	-		-
Mikroseparator (MSEP)	ASTM D 3948	-	Jet	100
MMT Content	Inhouse method	-	Gasoline	2
MON	ASTM D 2700	-	Gasoline	500
	DIN EN ISO 5163	-	Gasoline	500
MONG	BS 5711-9	incl. Glycerol, Ash, Water, Chloride	Raw glycerol	50
	BS 5711-9	without Glycerol, Ash, Water, Chloride	Raw glycerol	50
	DGF E-III 9a	incl. Glycerol, Ash, Water, Chloride	Raw glycerol	35
	DGF E-III 9a	without Glycerol, Ash, Water, Chloride	Raw glycerol	-
MRV-Viscosity	ASTM D 4684	each Temperature	Engine Oil (Unused Oil)	20

Analysis	Method			Sample amount [ml]
MTBE/MeOH in Naphtha	IP BG 1	-	Naphtha	100
<b>N</b>				
Naphthalene	ASTM D 1840	-	Jet	10
Neutralisation Number	DIN EN ISO 660	TAN - Indicator o. pot.	Bio oil	50
	ASTM D 974	TAN oder TBN - Indicator	Clear mineral oil products	20
	DIN 51558-1	TAN oder TBN - Indicator	Clear mineral oil products	50
	DIN 51558-1	SAN - Indicator	Clear mineral oil products	100
	ISO 6618	TAN oder TBN - potentiometric	Clear mineral oil products	50
Neutralisation Number	ASTM D 1613	TAN - Indicator	Ethanol, Gasohol, Chemicals	50
	ASTM D 1614	TBN - Indicator	Ethanol, Gasohol, Chemicals	50
	DIN EN 14104	TAN - Indicator	FAME	50
	DIN 51558-2	TAN - Indicator	Industrial Oil	20
	ASTM D 3242	TAN - Indicator	Jet	50
	ASTM D 2896	TBN - back titration	Liquid mineral oil products	20
	ASTM D 4739	BN - potentiometric	Liquid mineral oil products	20
	ASTM D 664	TAN - potentiometric	Liquid mineral oil products	20
	ASTM D 664	SAN - potentiometric	Liquid mineral oil products	20
	DIN EN 12634	TAN - potentiometric	Liquid mineral oil products	50
	DIN ISO 3771	TBN - potentiometric	Liquid mineral oil products	20
	ISO 6619	TAN - potentiometric	Liquid mineral oil products	20
	ISO 6619	SAN - potentiometric	Liquid mineral oil products	20
Nitration of Engine Oils	DIN 51453	-	Engine Oil (Unused oil required)	15
	IR	-	Engine Oil (Unused oil required)	15

Analysis	Method			Sample amount [ml]
Nitrogen	ASTM D 4629	FBP < 390°C	Fuels	5
	ASTM D 5762	-	Liquid mineral oil products	5
	DIN 51444	-	Liquid mineral oil products	5
Nonvolatile compounds	EC/2870/2000-Method II	-	Ethanol	100
Nonvolatile Matter	ASTM D 1353	-	Chemicals	100
NOx Reduction Agent content	ISO/PAS 22241-2 Nitrogen Annex B	-	NOx reduction agent	2
NOx Reduction Agent content	ISO/PAS 22241-2 Refractive Index Annex C	-	NOx reduction agent	2
<b>O</b>				
Odour	BS 5711/19	-	Glycerol	50
Odour	-	-	Liquid mineral oil products	50
O-PINA	Inhouse method SGS SP 250	GCxGC	Diesel	2
Oxidation of used lubricants	DIN 51453	-	Engine Oil (Unused oil required)	15
	IR	-	Engine Oil (Unused oil required)	15
Oxidation stability	ISO 6886	-	Bio oil	10
	ASTM D 2274	-	Diesel	350
	DIN EN ISO 12205	-	Diesel	350
	E DIN 51627-2 (mod. Bosch)	-	Diesel/FAME blends	15
	DIN EN 14112	-	FAME	10
	ASTM D 525	-	Gasoline	50
	DIN EN ISO 7536	-	Gasoline	50

Analysis	Method			Sample amount [ml]
Oxygenates	ASTM D 5599	-	Gasoline	15
	DIN EN 1601	-	Gasoline	15
<b>P</b>				
Particle Distribution	ISO 4406/99 // ISO 11171	-	Liquid mineral oil products	100
	ISO 4407/02 Microscope	-	Liquid mineral oil products	on request
PCB's	DIN EN 12766	-	Liquid mineral oil products	5
Permanganate time	ASTM D 1363	-	Methanol, Aceton	50
Peroxides	ASTM D 3703 mod.	-	Gasoline	50
	ASTM D 3703	-	Jet	50
	ASTM D 5799	-	LPG	50
Phosphate	ISO 22241 -2 Annex H	-	NOx reduction agent	150
Phosphorous	ASTM D 3231	-	Engine- und Industrial Oil	20
	DIN 51363-2	RFA	Engine- und Industrial Oil	20
	DIN 51363-3	ICP	Engine- und Industrial Oil	20
	prEN 15487	UV-VIS	Ethanol	50
	DIN EN 14107	ICP	FAME	10
	DIN 51440-1	RFA	Gasoline	10
pH-Value	ASTM D 1287	-	Coolants	50
	DIN 51369	-	Coolants	50
	ASTM D 6423	-	Gasohol	50
	Inhouse method	after extration	Gasoline	100

Analysis	Method			Sample amount [ml]
	ISO 38404 C5	-	NOx reduction agent	50
	ASTM E 70	-	Water	50
	ISO 10523	-	Water	50
pHe-Value	prEN 15490	-	Ethanol	100
PIANO-Analysis	ASTM D 6729 mod	-	Gasoline	2
PONA (Olefine + Aromaten)	DIN EN 14517	-	Gasoline	2
Pot. Gum + Oxstab	ISO 7536 + DIN EN ISO 6246	(8h, 7 bar, 100°C)	Gasoline	50
Pour Point	ASTM D 97	-	Liquid mineral oil products	45
	DIN ISO 3016	-	Liquid mineral oil products	45
Purity	GC - FID	-	-	2
	Titration	-	-	50
	UV - VIS	-	-	5
Pyrrol Nitrogen	UOP 276	-	Liquid mineral oil products	10
<b>R</b>				
Refractive Index	ASTM D 1218	-	Chemicals	2
Refractive Index	DIN 51423	-	Chemicals	2
Reserve Alkalinity	ASTM D 1121	-	Coolants	10

Analysis	Method			Sample amount [ml]
RON	ASTM D 2699-04	-	Gasoline	500
RON	EN ISO 5164	-	Gasoline	500
RON 100	ASTM D 2699-04	-	Gasoline	100
<b>S</b>				
Salt content	ASTM D 3230	-	Crude oil	100
	DIN 51576	-	Crude oil	100
Saponification Number	ASTM D 94-A	Indicator	Engine- und Industrial Oil	25
	ASTM D 94-B	Potentiometric	Engine- und Industrial Oil	25
	DIN 51559-1	Indicator	Engine- und Industrial Oil	25
SEDAB	SEDAB	-	Diesel	500
Sediments	DIN EN ISO 3735	Extraction	Residual Fuel Oil	20
Sediments and Water	ASTM D 1796	Centrifuge	Residual Fuel Oil	100
	DIN 51793	Centrifuge	Residual Fuel Oil	100
	ISO 3734	Centrifuge	Residual Fuel Oil	100
Short Sediment Test	ARAL	-	Diesel	500
Silver Corrosion	ASTM D 4814	-	Gasoline	200
Smoke Point	ASTM D 1322	-	Jet	25
Soap content	DGF C II 6 mod.		Refined oil	100

Analysis	Method			Sample amount [ml]
SOF	IP 442-99 mod. / IP 443-99 mod.	-		Filter masse
Solidification Point	ASTM D 938	-	Chemicals	30
Solubility of sediments	-	incl. ash	Liquid mineral oil products	500
	2 solvents	-	Liquid mineral oil products	500
	each more solvent	-	Liquid mineral oil products	500
Soot content	CEC L-82-A-97	UV	Engine Oil	5
	DIN 51006	TGA	Engine Oil (Unused Oil required)	20
	DIN 51452	IR	Engine Oil (Unused Oil required)	15
Start pH value	Esso AG Methode 083	-	Industrial Oil	10
Steel Corrosion (Distilled water or Seawater)	ASTM D 665	16 h	Liquid mineral oil products	300
	ASTM D 665	4 h	Liquid mineral oil products	300
	DIN 51358	16 h	Liquid mineral oil products	300
	DIN ISO 7120	16 h	Liquid mineral oil products	300
	NACE TM 0172	4 h	Liquid mineral oil products	300
Sterolglucoside	Inhouse method	-	FAME	2
Sulfur Components	Inhouse method	-	Clear mineral oil products	2

Analysis	Method			Sample amount [ml]
Sulfur content	prEN 15486	UV	Ethanol	20
	ASTM D 6334	RFA wd > 3 mg/kg	Fuels	20
	DIN EN ISO 20846	Fluoreszenz > 3mg/kg	Fuels	2
	DIN EN ISO 20884	RFA wd > 5mg/kg	Fuels	20
	ASTM D 8754	RFA	Heavy fuel oil	20
	GC AED	> 1 mg/kg	Liquid gas	2
	ASTM D 2622	RFA wd > 10 mg/kg	Liquid mineral oil products	20
	ASTM D 4294	RFA ed >150 mg/kg	Liquid mineral oil products	20
	ASTM D 5453	Fluoreszenz >1 mg/kg	Liquid mineral oil products	2
	DIN EN ISO 14596	RFA wd > 10 mg/kg	Liquid mineral oil products	20
Sulphate Ash	ASTM D 874	-	Liquid mineral oil products	10
	DIN ISO 3987	-	Liquid mineral oil products	10
Surface Tension	ASTM D 971	-	Liquid mineral oil products	50
<b>T</b>				
Thermal Stability (JFTOT)	ASTM D 3241	-	Jet	500
Thermal Stability (Sediments)	E DIN 51371	-	Heating oil	300
Toluene Equivalent	AMS 79004	-	Residual Fuel Oil	250
Toluene insolubles	DIN 52031	-	Heavy fuel oil	250

Analysis	Method			Sample amount [ml]
Total contamination	DIN EN 12662	-	Diesel	350
	ASTM D 893 A/B	Centrifuge	Engine- und Industrial Oil	25
	DIN 51365	Centrifuge	Engine- und Industrial Oil	10
	ASTM D 2276	-	Jet	5000
	ASTM D 5452	-	Jet	5000
	Filtration	-	Liquid mineral oil products	on request
	ISO 22241-2 Annex G	-	NOx reduction agent	110
TSE	ISO 10307-1	-	Residue Oil	100
TSP / TSA	ISO 10307-2	-	Residue Oil	100
Turbidity	Texaco-Test	-	Diesel	1000
<b>V</b>				
Vapour Liquid Ratio 20°C (calculated)	ASTM D 4814	incl. Density, RVP, Distillation	Gasoline	150
Vapour Lock Index	calculated	incl. Vapour pressure, Distillation	Gasoline	120
Vapour Pressure	ASTM D 5191	-	Gasoline	20
	DIN EN 13016-1	-	Gasoline	20
	DIN 51640	incl. Composition and Inert Gases calc	Liquid gas	100
Vapour Pressure Diagram (0°C bis 100°C- ASVP)	ASTM D 5191 mod. (V/L 4/1)	-	Gasoline	20
	DIN EN 13016-2 (V/L 1.5/1)	-	Gasoline	20

<b>Analysis</b>	<b>Method</b>			<b>Sample amount [ml]</b>
Viscosity change at low temperature	ASTM D 2532	each temperature	Industrial Oil	500
Viscosity index	ASTM D 2270	incl. Visko 40, Visko 100	Liquid mineral oil products	65
	DIN ISO 2909	incl. Visko 40, Visko 100	Liquid mineral oil products	65
Viscosity, dynamic + kinematic	ASTM D 7042	each temperature (Stabinger)	Liquid mineral oil products	30
Viscosity, kinematic	ASTM D 445	each temperature	Liquid mineral oil products	30
	DIN 51562-1	each temperature	Liquid mineral oil products	30
	DIN EN ISO 3104	each temperature	Liquid mineral oil products	30
	Houillon	each temperature	Liquid mineral oil products	2
Viscosity, kinematic (stripped sample)	ASTM D 445	each temperature	Industrial Oil	35
	Houillon	each temperature	Industrial Oil	20
Volatility of Engine Oils	ASTM D 6417	-	Engine- und Industrial Oil	2
	DIN 51581-2	GC	Engine- und Industrial Oil	2
<b>W</b>				
Water , alkaline and ammonia	DIN 51614	-	Liquid gas	600

Analysis	Method			Sample amount [ml]
Water content	ASTM D 1364	coulometric	Chemicals	10
	DIN 51777-1	volumetric	Chemicals	50
	ASTM D 4377	coulometric	Crude oil	10
	ASTM D 4928	coulometric	Crude oil	10
	DIN EN ISO 9029	Distillation	Crude oil	100
	ASTM D 6304/C	coulometric	Engine Oil	5
	prEN 15489	-	Ethanol	10
	ISO 18453	-	Gas	100
	ASTM D 6304/A	coulometric	Liquid mineral oil products	10
	DIN EN ISO 12937	coulometric	Liquid mineral oil products	10
	visual	-	Liquid mineral oil products	500
	DGF E-III 10	-	Raw glycerol	5
	ASTM D 95	Distillation	Residual Fuel Oil	100
	DIN ISO 3733	Distillation	Residual Fuel Oil	100
Water Miscibility	ASTM D 1722	-	Chemicals	50
Water reaction	ASTM D 1094	-	Jet	100
Water separability	ASTM D 1401	-	Industrial Oil	110
	DIN 51589-1	Steam	Industrial Oil	110
	DIN ISO 6614	-	Industrial Oil	110
Watson K-Factor	UOP 375	-	Residual Fuel Oil	50
Waxy content	UOP 46	-	Residual Fuel Oil	10

Analysis	Method			Sample amount [ml]
<b>X</b>				
Xylol Equivalent	BP 230	-	Residual Fuel Oil	250
<b>Product analysis</b>				
Bio oil full spec	E DIN 51605	-	-	1500
Biodiesel full spec.	DIN EN 14214	-	-	2500
Diesel fuel (B7) full spec.	E DIN 51628	-	-	2500
Diesel fuel full spec.	EN 590	-	-	2000
	EN 590 arctic	-	-	2000
Ethanol as blending component in gasoline	EN 15376	Copper content is not possible in our laboratory	-	1000
Gasoline (E10) full spec	DIN 51626-1	-	-	2000
Gasoline (E5) full spec	DIN 51626-2	-	-	2000
Gasoline full spec	EN 228	-	-	2000
Heating oil EL A full spec.	DIN 51603-6 (Draft)	-	-	1500
Heating oil EL full spec.	DIN 51603-1:2003	-	-	1000
	DIN 51603-1:2007 (Draft)	-	-	1500

Analysis	Method			Sample amount [ml]
Heating oil EL Low Sulfur full spec.	DIN 51603-1:2003	incl. HFRR	-	1000
	DIN 51603-1:2007 (Draft)			1500
Heavy Fuel Oil, full spec	DIN 51603-3	-	-	1000
Jet A1 full spec	ASTM D 1655	-	-	5000
LPG	DIN 51622	-	-	3000
	EN 589	-	-	2500
NOx reduction agent full spec	ISO 22241	-	-	1000
<b>Others</b>				
Blending	as ordered	-		per h
Comment on specification conformity	in certificate: confirms / not	-		-
Comment/Evaluation	T&M basis (per h)	-		per h
Composite samples	due to Ullage Report	-		per h
Overtime	during week // per h	MO 18.00 - FR 06:00		per h
	weekend // per h	FR 18:00 - MO 06:00		per h
	Public holiday // per h	0.00 - 24.00		per h
Storage and disposal	mineral oil products	-		
	Special Products	-		

Analysis	Method			Sample amount [ml]
travel costs	incl. Time (per km)	-		per km
Witnessing	off site (per h)	-		per h