

		Data	Notes	Reference ID
<b>Origin:</b> Kuwait/Saudi Arabia				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
<b>API Gravity</b>		28.0		Caltex 92
		28.5		OGJ 99
<b>Sulphur (weight %)</b>		2.85		OGJ 99
		2.85		Caltex 92
<b>Water Content (volume %)</b>		0.1	(a)	Caltex 92
(a) water and sediment				
<b>Flash Point (°C)</b>		< -35		Caltex 92
<b>Reid Vapour Pressure (kPa)</b>		37		Caltex 92
		52		OGJ 99
<b>Density (g/mL)</b>				
Temperature (°C)				
15		0.8867		Caltex 92
<b>Pour Point (°C)</b>		-35		OGJ 99
		< -48		Caltex 92
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>				
Temperature (°C)				
10		57		Caltex 92
27		21		Caltex 92
30		21		Caltex 92
		21		OGJ 99
38		17		Caltex 92
<b>Hydrocarbon Groups (weight %)</b>				
Asphaltenes		4		OGJ 99
		4		Caltex 92
Waxes		3		OGJ 99
		3		Caltex 92

**Khafji**

	<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Distillation (°C)</b>			
<u>Total Distillate (volume %)</u>			
6	100		Caltex 92
13	140		Caltex 92
16	160		Caltex 92
22	200		Caltex 92
26	220		Caltex 92
29	240		Caltex 92
33	270		Caltex 92
<b>Yield on Crude (volume %)</b>			
C1-C4	3		OGJ 99
C2-C5	5		Caltex 92
Full range naphtha (C5-190)	20		OGJ 99
Kerosene (190-250)	10		OGJ 99
Gas oil (250-340)	14		OGJ 99
Residue (>340)	53		OGJ 99
<b>Metals (ppm)</b>			
Aluminum	0.6		Caltex 92
Calcium	< 1		Caltex 92
Chromium	< 1		Caltex 92
Cobalt	< 1		Caltex 92
Copper	1		Caltex 92
Iron	3		Caltex 92
Lead	< 1		Caltex 92
Magnesium	< 1		Caltex 92
Manganese	< 1		Caltex 92
Molybdenum	< 1		Caltex 92
Nickel	16		OGJ 99
	16		Caltex 92
Potassium	< 1		Caltex 92
Silicon	< 1		Caltex 92
Sodium	1		Caltex 92
Tin	< 6		Caltex 92
Vanadium	55		OGJ 99
	55		Caltex 92
Zinc	< 1		Caltex 92
<b>Other Elements (weight %)</b>			
Nitrogen	0.11		Caltex 92

	Data	Notes	Reference ID
<b>Origin:</b> Egypt			
A waxy crude.			OGJ 93
<b>API Gravity</b>	38.0		OGJ 93
<b>Sulphur (weight %)</b>	0.42		OGJ 93
<b>Water Content (volume %)</b>	0.2		OGJ 93
<b>Pour Point (°C)</b>	29		OGJ 93
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>			
Temperature (°C)			
60	5		OGJ 93
<b>Hydrocarbon Groups (weight %)</b>			
Asphaltenes	1		OGJ 93
Waxes	20		OGJ 93

**Kimkol**

	Data	Notes	Reference ID
<b>Origin:</b> Kazakhstan			
Data from OGJ 99 were originally published in 1993 as part of a series entitled "Export Crudes for the '90s".			
<b>API Gravity</b>	42.5		OGJ 99
<b>Sulphur (weight %)</b>	0.07		OGJ 99
<b>Flash Point (°C)</b>	15 -35	(a)	OGJ 99 OGJ 99
(a) open cup			
<b>Density (g/mL)</b>	<u>Temperature (°C)</u>		
	Unknown	0.8130	OGJ 99
<b>Pour Point (°C)</b>	10		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>	<u>Temperature (°C)</u>		
	30	7	OGJ 99
	50	4	OGJ 99
<b>Yield on Crude (weight %)</b>	<u>Boiling Range (°C)</u>		
	C1-C4	2	OGJ 99
	Gasoline (62-180)	24	OGJ 99
	Kerosene (120-240)	19	OGJ 99
	Diesel fuel (180-350)	30	OGJ 99
	Residue (> 350)	44	OGJ 99
<b>Metals (ppm)</b>			
	Nickel	5	OGJ 99
	Vanadium	0.2	OGJ 99
<b>Other Elements (weight %)</b>			
	Nitrogen	0.10	OGJ 99
	Oxygen	0.18	OGJ 99

	Data	Notes	Reference ID
<b>Origin:</b> Iraq			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
<b>API Gravity</b>	35.1		OGJ 99
<b>Sulphur (weight %)</b>	1.97		OGJ 99
<b>Pour Point (°C)</b>	-22		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>			
Temperature (°C)			
10	13		OGJ 99
<b>Yield on Crude (weight %)</b>			
Boiling Range (°C)			
C1-C4	2		OGJ 99
Light naphtha (C5-65)	4		OGJ 99
Heavy naphtha (65-175)	18		OGJ 99
Kerosene (175-225)	9		OGJ 99
Gas oil (225-360)	24		OGJ 99
Heavy gas oil (360-525)	23		OGJ 99
Residue (>525)	20		OGJ 99

**Kittiwake**

		<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Origin:</b> North Sea, UK				
Data from OGJ 99 were originally published in 1991 as part of a series entitled "Export Crudes for the '90s".				
<b>API Gravity</b>		37.0		OGJ 99
<b>Sulphur (weight %)</b>		0.65		OGJ 99
<b>Density (g/mL)</b>				
	<u>Temperature (°C)</u>			
	15	0.8408		OGJ 99
<b>Pour Point (°C)</b>		-24		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>				
	<u>Temperature (°C)</u>			
	15	8		OGJ 99
<b>Yield on Crude (volume %)</b>				
	<u>Boiling Range (°C)</u>			
	20-175	25		OGJ 99
	175-295	25		OGJ 99
	295-343	9		OGJ 99
	343-565	29		OGJ 99
	565-816	11		OGJ 99
<b>Other Elements (weight %)</b>				
	Nitrogen	0.05		OGJ 99

		Data	Notes	Reference ID
<b>Origin:</b> Beaufort Sea, Canada				
Samples identified as: (a) Koakoak 0-22; (b) Koakoak 0-22A				
<b>API Gravity</b>				
		28.1	(a)	Dome 84
		29.5	(b)	Dome 84
<b>Density (g/mL)</b>				
<u>Temperature (°C)</u>				
16		0.8865	(a)	Dome 84
		0.8785	(b)	Dome 84
<b>Pour Point (°C)</b>				
		-48	(a)	Dome 84
		< 60	(b)	Dome 84
<b>Dynamic Viscosity (mPa·s or cP)</b>				
<u>Temperature (°C)</u>				
20		22	(a)	Dome 84
		10	(b)	Dome 84
30		13	(a)	Dome 84
		6	(b)	Dome 84
40		9	(a)	Dome 84
		4	(b)	Dome 84

**Kole Marine Blend**

	<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Origin:</b> Cameroon			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
<b>API Gravity</b>	34.9		OGJ 99
<b>Sulphur (weight %)</b>	0.30		OGJ 99
<b>Reid Vapour Pressure (kPa)</b>	44		OGJ 99
<b>Pour Point (°C)</b>	-6		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>			
	<u>Temperature (°C)</u>		
	10	11	OGJ 99
<b>Hydrocarbon Groups (weight %)</b>			
	Waxes	6	OGJ 99
<b>Yield on Crude (volume %)</b>			
	<u>Boiling Range (°C)</u>		
	C1-C5	6	OGJ 99
	Light gasoline (15-80)	6	OGJ 99
	Heavy naphtha (80-180)	22	OGJ 99
	Gas oil (180-350)	30	OGJ 99
	Residue (> 350)	39	OGJ 99
<b>Metals (ppm)</b>			
	Nickel	27	OGJ 99
	Vanadium	9	OGJ 99



		Data	Notes	Reference ID
<b>Origin:</b> Russia				
This oil sample was brought back to Canada by the Canadian members of the United Nations sponsored multi-national group that went to Russia during December 1994. The purpose of the visit was to assess existing damage to the environment and determine potential future hazards.				Lambert 95
<b>API Gravity</b>		36.7		ESD 94
<b>Equation(s) for Predicting Evaporation</b>				
%Ev = $(2.73 + 0.045T)\ln(t)$ Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
<b>Sulphur (weight %)</b>		0.12		ESD 94
<b>Water Content (weight %)</b>		5.0		ESD 94
<b>Flash Point (°C)</b>		< -30		ESD 94
<b>Density (g/mL)</b>				
	Temperature (°C)			
	0	0.8545		ESD 94
	15	0.8408		ESD 94
<b>Pour Point (°C)</b>		12		ESD 94
<b>Dynamic Viscosity (mPa·s or cP)</b>				
	Temperature (°C)			
	0	58	(a)	ESD 94
		1,264	(b)	ESD 94
		8,175	(c)	ESD 94
	15	13	(d)	ESD 94
Shear rate = (a) 400/s; (b) 10/s; (c) 1/s; (d) 500/s				
<b>Hydrocarbon Groups (weight %)</b>				
	Saturates	70		ESD 94
	Aromatics	22		ESD 94
	Resins	6		ESD 94
	Asphaltenes	2		ESD 94
	Waxes	8		ESD 98
<b>Volatile Organic Compounds (ppm)</b>				
Corrected for initial water content of oil.				
	Total BTEX	3,400		ESD 94
	C3-benzenes	1,800		ESD 94
	Total VOCs	5,200		ESD 94

**Komineft**

	<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>GC Analysis</b>			
Corrected for initial water content of oil.			
N-alkanes	93	(a)	ESD 94
C17/pristane	6	(a)	ESD 94
C18/phytane	1	(a)	ESD 94
Pristane/phytane	0	(a)	ESD 94
Alkylated PAHs	10	(a)	ESD 94
C23-hopane	86	(b)	ESD 94
C24-hopane	69	(b)	ESD 94
C32(S)-hopane	175	(b)	ESD 94
C32(R)-hopane	122	(b)	ESD 94
(a) mg/g; (b) µg/g			
<b>Surface Tension (mN/m or dynes/cm)</b>			
<u>Temperature (°C)</u>			
0	28.6		ESD 94
15	23.7		ESD 94
<b>Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)</b>			
<u>Temperature (°C)</u>			
0	NM		ESD 94
15	16.4		ESD 94
<b>Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)</b>			
<u>Temperature (°C)</u>			
0	NM		ESD 94
15	18.0		ESD 94

	Data	Notes	Reference ID
<b>Boiling Point Distribution (weight %)</b>			
The sample was dried with sodium sulphate to a water content of 2 wt% prior to analysis.			
<u>Boiling Point (°C)</u>			
80	6		ESD 94
100	9		ESD 94
120	12		ESD 94
140	14		ESD 94
160	18		ESD 94
180	21		ESD 94
200	24		ESD 94
250	32		ESD 94
300	41		ESD 94
350	51		ESD 94
400	59		ESD 94
450	68		ESD 94
500	76		ESD 94
550	81		ESD 94
600	86		ESD 94
650	90		ESD 94
700	93		ESD 94

**Metals (ppm)**

Barium	2	ESD 94
Chromium	< 0.9	ESD 94
Copper	< 0.3	ESD 94
Iron	7	ESD 94
Lead	< 5	ESD 94
Magnesium	38	ESD 94
Molybdenum	< 2	ESD 94
Nickel	2	ESD 94
Titanium	1	ESD 94
Vanadium	12	ESD 94
Zinc	2	ESD 94

**Kopanoar**

		<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Origin:</b> Beaufort Sea, Canada				
<b>Flash Point (°C)</b>				
<u>Evaporation (weight %)</u>				
0		75		Mackay 80
4		86		Mackay 80
12		118		Mackay 80
<b>Fire Point (°C)</b>				
<u>Evaporation (weight %)</u>				
0		85		Mackay 80
4		98		Mackay 80
12		125		Mackay 80
<b>Density (g/mL)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	20	0.9000		Mackay 80
4		0.9010		Mackay 80
12		0.9020		Mackay 80
<b>Pour Point (°C)</b>				
<u>Evaporation (weight %)</u>				
0		-37		Mackay 80
4		-28		Mackay 80
12		-19		Mackay 80
<b>Dynamic Viscosity (mPa·s or cP)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	57		Mackay 80
	15	33		Mackay 80
	25	18		Mackay 80
4	0	75		Mackay 80
	15	41		Mackay 80
	25	24		Mackay 80
12	0	104		Mackay 80
	15	54		Mackay 80
	25	30		Mackay 80
<b>Distillation (°C)</b>				
		<u>Total Distillate (volume %)</u>		
	IBP	84		Mackay 80
	4	95		Mackay 80
	12	117		Mackay 80

		<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Aqueous Solubility (mg/L)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	Unknown	10		Mackay 80
4		9		Mackay 80
12		3		Mackay 80

**Kuparuk**

	<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Origin:</b> Alaska, USA			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
<b>API Gravity</b>	23.0		OGJ 99
<b>Sulphur (weight %)</b>	1.76		OGJ 99
<b>Reid Vapour Pressure (kPa)</b>	18		OGJ 99
<b>Pour Point (°C)</b>	-48		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>			
	<u>Temperature (°C)</u>		
	16	80	OGJ 99
<b>Yield on Crude (volume %)</b>			
	<u>Boiling Range (°C)</u>		
	C1-C5	2	OGJ 99
	Light gasoline (C5-65)	2	OGJ 99
	Naphtha (65-193)	15	OGJ 99
	Distillate (193-343)	27	OGJ 99
	Residue (>343)	56	OGJ 99
<b>Metals (ppm)</b>			
	Nickel	19	OGJ 99
	Vanadium	57	OGJ 99
<b>Other Elements (weight %)</b>			
	Nitrogen	0.20	OGJ 99

	Data	Notes	Reference ID
<b>Origin:</b> Papua New Guinea			
Data from OGJ 99 were originally published in 1993 as part of a series entitled "Export Crudes for the '90s".			
<b>API Gravity</b>	44.0		OGJ 99
<b>Sulphur (weight %)</b>	0.04		OGJ 99
<b>Density (g/mL)</b>			
	<u>Temperature (°C)</u>		
	15	0.8063	OGJ 99
<b>Pour Point (°C)</b>	2		OGJ 99
<b>Kinematic Viscosity (mm<sup>2</sup>/s or cSt)</b>			
	<u>Temperature (°C)</u>		
	25	2	OGJ 99
	40	2	OGJ 99
	50	1	OGJ 99
<b>Yield on Crude (volume %)</b>			
	<u>Boiling Range (°C)</u>		
	21-70	8	OGJ 99
	70-140	23	OGJ 99
	140-190	14	OGJ 99
	190-230	9	OGJ 99
	230-360	24	OGJ 99
	360-540	16	OGJ 99
	>540	3	OGJ 99

**Kuwait**

		<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Origin:</b> Kuwait				
<b>Synonyms:</b> Kuwait Export				
<b>API Gravity</b>		30.6		EETD 86
		31.4		OGJ 99
<b>Sulphur (weight %)</b>				
<u>Evaporation (weight %)</u>				
0		2.52		OGJ 99
10		2.69		EETD 86
21		3.18		EETD 86
<b>Flash Point (°C)</b>		< 25		EETD 86
<b>Reid Vapour Pressure (kPa)</b>		46		OGJ 99
<b>Density (g/mL)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8833		EETD 86
	15	0.8722		EETD 86
10	0	0.9064		EETD 86
	15	0.8977		EETD 86
21	0	0.9279		EETD 86
	15	0.9165		EETD 86
<b>Pour Point (°C)</b>				
<u>Evaporation (weight %)</u>				
0		-18		EETD 86
		-15		OGJ 99
10		-9		EETD 86
21		3		EETD 86
<b>Dynamic Viscosity (mPa·s or cP)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	90		EETD 86
	15	22		EETD 86
10	0	1,250		EETD 86
	15	56		EETD 86
21	0	29,000		EETD 86
	15	182		EETD 86
<b>Saybolt Viscosity (SUS)</b>				
<u>Temperature (°C)</u>				
	38	58		OGJ 99
<b>Chemical Dispersibility (volume %)</b>				
	Corexit 9527	5		EETD 87



		Data	Notes	Reference ID
<b>Surface Tension (mN/m or dynes/cm)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	28.0		EETD 86
	15	27.8		EETD 86
10	0	29.6		EETD 86
	15	27.9		EETD 86
21	0	31.4		EETD 86
	15	30.5		EETD 86
<b>Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	13.4		EETD 86
	15	22.9		EETD 86
10	0	21.1		EETD 86
	15	18.2		EETD 86
21	0	24.5		EETD 86
	15	18.5		EETD 86
<b>Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)</b>				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	29.1		EETD 86
	15	28.6		EETD 86
10	0	24.8		EETD 86
	15	21.1		EETD 86
21	0	27.3		EETD 86
	15	27.0		EETD 86
<b>Distillation (°C)</b>				
	<u>Total Distillate (volume %)</u>			
	IBP	39		EETD 86
	5	97		EETD 86
	10	130		EETD 86
	15	153		EETD 86
	20	181		EETD 86
	25	208		EETD 86
	30	239		EETD 86
	35	264		EETD 86
	40	296		EETD 86
	45	312		EETD 86
	50	325		EETD 86
	55	335		EETD 86
	60	341		EETD 86
	65	342		EETD 86

**Kuwait**

	<b>Data</b>	<b>Notes</b>	<b>Reference ID</b>
<b>Yield on Crude (volume %)</b>			
Boiling Range (°C)			
Naphtha (IBP-76)	6		OGJ 99
Heavy naphtha (76-154)	12		OGJ 99
Kerosene (154-271)	18		OGJ 99
Heating oil (271-360)	15		OGJ 99
Gas oil (360-538)	25		OGJ 99
Residuum (538+)	22		OGJ 99