

	Data	Notes	Reference ID
Origin: North Sea, UK			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
API Gravity	39.3		OGJ 99
Sulphur (weight %)	0.28		OGJ 99
Pour Point (°C)	-3		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
Temperature (°C)			
21	5		OGJ 99
Yield on Crude (weight %)			
Boiling Range (°C)			
C1-C4	3		OGJ 99
Naphtha (C5-149)	22		OGJ 99
Kerosene (149-232)	15		OGJ 99
Gas oil (232-342)	21		OGJ 99
Gas oil (342-509)	26		OGJ 99
Residue (>509)	13		OGJ 99
Metals (ppm)			
Nickel	< 2		OGJ 99
Vanadium	4		OGJ 99

Main Pass Block 306

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity		32.8		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (2.86 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		0.28		ESD 94
12		0.31		ESD 94
24		0.33		ESD 94
37		0.38		ESD 94
Water Content (weight %)				
		0.3		ESD 94
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		< -30		ESD 94
12		44		ESD 94
24		> 95		ESD 94
37		> 95		ESD 94
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8712		ESD 94
	15	0.8606		ESD 94
	25	0.8535		ESD 94
12	0	0.8957		ESD 94
	15	0.8849		ESD 94
	25	0.8781		ESD 94
24	0	0.9142		ESD 94
	15	0.9034		ESD 94
	25	0.8965		ESD 94
37	0	0.9315		ESD 94
	15	0.9203		ESD 94
	25	0.9142		ESD 94
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-53		ESD 94
12		-35		ESD 94
24		-32		ESD 94
37		-16		ESD 94

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	15		ESD 94
	15	9		ESD 94
	25	7		ESD 94
12	0	26		ESD 94
	15	19		ESD 94
	25	12		ESD 94
24	0	168		ESD 94
	15	54		ESD 94
	25	33		ESD 94
37	0	968		ESD 94
	15	219		ESD 94
	25	113		ESD 94
Chemical Dispersibility (volume %)				
	Corexit 9500	35		ESD 94
	Corexit 9527	25		ESD 94
	Dasic LTS	20		ESD 94
	Enersperse 700	30		ESD 94
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	65		ESD 95
	Aromatics	29		ESD 95
	Resins	5		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	3		ESD 98
12	Saturates	63		ESD 95
	Aromatics	29		ESD 95
	Resins	8		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	2		ESD 98
24	Saturates	58		ESD 95
	Aromatics	32		ESD 95
	Resins	10		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	2		ESD 98
37	Saturates	55		ESD 95
	Aromatics	33		ESD 95
	Resins	11		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	3		ESD 98

Main Pass Block 306

		Data	Notes	Reference ID
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		11	<i>SD = 6</i>	ESD 95
12		14	<i>SD = 2</i>	ESD 95
24		28	<i>SD = 1</i>	ESD 95
37		41	<i>SD = 4</i>	ESD 95
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	790		ESD 94
	Toluene	3,080		ESD 94
	Ethylbenzene	840		ESD 94
	Xylenes	7,090		ESD 94
	C3-benzenes	7,140		ESD 94
	Total BTEX	11,810		ESD 94
	Total VOCs	18,940		ESD 94
12	Benzene	120		ESD 94
	Toluene	1,070		ESD 94
	Ethylbenzene	470		ESD 94
	Xylenes	4,550		ESD 94
	C3-benzenes	5,890		ESD 94
	Total BTEX	6,210		ESD 94
	Total VOCs	12,090		ESD 94
24	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	120		ESD 94
	C3-benzenes	1,660		ESD 94
	Total BTEX	120		ESD 94
	Total VOCs	1,780		ESD 94
37	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	80		ESD 94
	C3-benzenes	290		ESD 94
	Total BTEX	80		ESD 94
	Total VOCs	370		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	27.7		ESD 94
	15	26.9		ESD 94
	25	26.1		ESD 94
12	0	29.6		ESD 94
	15	28.7		ESD 94
	25	28.0		ESD 94
24	0	30.7		ESD 94
	15	30.1		ESD 94
	25	29.4		ESD 94
37	0	32.2		ESD 94
	15	31.2		ESD 94
	25	30.5		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	14.9		ESD 94
	15	16.5		ESD 94
	25	13.7		ESD 94
12	0	16.3		ESD 94
	15	18.3		ESD 94
	25	13.7		ESD 94
24	0	16.5		ESD 94
	15	17.4		ESD 94
	25	13.7		ESD 94
37	0	14.9		ESD 94
	15	13.6		ESD 94
	25	11.2		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	19.0		ESD 94
	15	20.3		ESD 94
	25	16.6		ESD 94
12	0	19.9		ESD 94
	15	21.9		ESD 94
	25	17.9		ESD 94
24	0	19.1		ESD 94
	15	22.3		ESD 94
	25	18.6		ESD 94
37	0	16.7		ESD 94
	15	17.5		ESD 94
	25	13.6		ESD 94

Main Pass Block 306

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	100	2		ESD 94
	120	2		ESD 94
	140	5		ESD 94
	160	14		ESD 94
	180	23		ESD 94
	200	26		ESD 94
	250	37		ESD 94
	300	49		ESD 94
	350	60		ESD 94
	400	70		ESD 94
	450	79		ESD 94
	500	86		ESD 94
	550	92		ESD 94
	600	96		ESD 94
	650	99		ESD 94
12	100	1		ESD 95
	120	2		ESD 95
	140	5		ESD 95
	160	9		ESD 95
	180	13		ESD 95
	200	17		ESD 95
	250	29		ESD 95
	300	42		ESD 95
	350	54		ESD 95
	400	65		ESD 95
	450	75		ESD 95
	500	83		ESD 95
	550	89		ESD 95
	600	94		ESD 95
	650	97		ESD 95
	700	99		ESD 95
24	180	2		ESD 95
	200	5		ESD 95
	250	18		ESD 95
	300	32		ESD 95
	350	47		ESD 95
	400	59		ESD 95
	450	71		ESD 95
	500	80		ESD 95
	550	87		ESD 95
	600	92		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
24	650	96		ESD 95
	700	99		ESD 95
37	250	4		ESD 95
	300	18		ESD 95
	350	36		ESD 95
	400	51		ESD 95
	450	64		ESD 95
	500	75		ESD 95
	550	84		ESD 95
	600	91		ESD 95
	650	95		ESD 95
	700	98		ESD 95

Main Pass Block 37

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	33.0		ESD 00
16		26.0		ESD 00
30		16.0		ESD 00
50		14.0		ESD 00
Equation(s) for Predicting Evaporation				
$\%Ev = (3.04 + 0.045T)\ln(t)$				ESD 97
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		0.16		ESD 94
16		0.31		ESD 94
30		0.46		ESD 94
50		0.39		ESD 94
Water Content				
<u>Evaporation (weight %)</u>				
0		4.0		ESD 94
16		< 0.1		ESD 95
30		< 0.1		ESD 95
50		< 0.1		ESD 95
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-6		ESD 94
16		48		ESD 94
30		> 95		ESD 94
50		> 95		ESD 94

		Data	Notes	Reference ID
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8431		ESD 94
	15	0.8311		ESD 94
	25	0.8277		ESD 94
16	0	0.8668		ESD 94
	15	0.8543		ESD 94
	25	0.8469		ESD 94
30	0	0.8815		ESD 94
	15	0.8689		ESD 94
	25	0.8613		ESD 94
50	0	0.8989		ESD 94
	15	0.8855		ESD 94
	25	0.8800		ESD 94
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-3		ESD 94
16		4		ESD 94
30		15		ESD 94
50		17		ESD 94
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	20		ESD 94
	15	7		ESD 94
	25	4		ESD 94
16	0	48		ESD 94
	15	16		ESD 94
	25	8		ESD 94
30	0	156		ESD 94
	15	36		ESD 94
	25	18		ESD 94
50	0	1,149	(a)	ESD 94
		9,600	(b)	ESD 94
		13,530	(c)	ESD 94
	15	115		ESD 94
	25	49		ESD 94

Shear rate = (a) 100/s; (b) 10/s; (c) 1/s

Main Pass Block 37

		Data	Notes	Reference ID
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
	Corexit 9500	27		ESD 00
	Corexit 9527	20		ESD 94
	Dasic LTS	25		ESD 94
	Enersperse 700	10		ESD 94
12	Corexit 9500	22		ESD 00
24		18		ESD 00
37		17		ESD 00
<i>(a) UV/VIS quantitation</i>				
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	73	(a)	ESD 95
	Aromatics	21	(a)	ESD 95
	Resins	5	(a)	ESD 95
	Asphaltenes	1	(a)	ESD 95
	Waxes	8		ESD 97
16	Saturates	73		ESD 95
	Aromatics	21		ESD 95
	Resins	5		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	6		ESD 98
30	Saturates	70		ESD 95
	Aromatics	23		ESD 95
	Resins	6		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	7		ESD 98
50	Saturates	66		ESD 95
	Aromatics	24		ESD 95
	Resins	8		ESD 95
	Asphaltenes	2		ESD 95
	Waxes	8		ESD 98
<i>(a) approximate: corrected for initial water content of oil</i>				
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		10	SD = 2	ESD 95
16		18	SD = 4	ESD 95
30		38	SD = 2	ESD 95
50		52	SD = 5	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	880		ESD 94
	Toluene	4,560		ESD 94
	Ethylbenzene	830		ESD 94
	Xylenes	6,520		ESD 94
	C3-benzenes	7,500		ESD 94
	Total BTEX	12,790		ESD 94
	Total VOCs	20,290		ESD 94
16	Benzene	90		ESD 94
	Toluene	1,100		ESD 94
	Ethylbenzene	530		ESD 94
	Xylenes	4,390		ESD 94
	C3-benzenes	6,890		ESD 94
	Total BTEX	6,100		ESD 94
	Total VOCs	12,980		ESD 94
30	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	170		ESD 94
	C3-benzenes	2,100		ESD 94
	Total BTEX	170		ESD 94
	Total VOCs	2,270		ESD 94
50	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

Main Pass Block 37

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	28.8		ESD 94
	15	24.0		ESD 94
	25	24.2		ESD 94
16	0	29.2		ESD 94
	15	28.0		ESD 94
	25	26.7		ESD 94
30	0	DNF		ESD 94
	15	29.0		ESD 94
	25	28.4		ESD 94
50	0	DNF		ESD 94
	15	31.2		ESD 94
	25	29.7		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	17.3		ESD 94
	15	19.7		ESD 94
	25	15.4		ESD 94
16	0	NM		ESD 94
	15	22.6		ESD 94
	25	18.7		ESD 94
30	0	DNF		ESD 94
	15	23.2		ESD 94
	25	20.0		ESD 94
50	0	DNF		ESD 94
	15	21.7		ESD 94
	25	18.3		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	18.3		ESD 94
	15	20.6		ESD 94
	25	17.9		ESD 94
16	0	NM		ESD 94
	15	23.4		ESD 94
	25	20.4		ESD 94
30	0	DNF		ESD 94
	15	24.0		ESD 94
	25	21.5		ESD 94
50	0	DNF		ESD 94
	15	25.1		ESD 94
	25	20.4		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The sample was dried with sodium sulphate prior to analysis.				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	40	2		ESD 94
	60	2		ESD 94
	80	5		ESD 94
	100	8		ESD 94
	120	12		ESD 94
	140	16		ESD 94
	160	20		ESD 94
	180	25		ESD 94
	200	29		ESD 94
	250	41		ESD 94
	300	53		ESD 94
	350	65		ESD 94
	400	74		ESD 94
	450	83		ESD 94
	500	89		ESD 94
	550	94		ESD 94
	600	97		ESD 94
16	100	1		ESD 95
	120	2		ESD 95
	140	4		ESD 95
	160	8		ESD 95
	180	13		ESD 95
	200	18		ESD 95
	250	31		ESD 95
	300	45		ESD 95
	350	58		ESD 95
	400	69		ESD 95
	450	79		ESD 95
	500	87		ESD 95
30	550	92		ESD 95
	600	96		ESD 95
	650	99		ESD 95
	160	1		ESD 95
	180	3		ESD 95
	200	6		ESD 95
	250	20		ESD 95
	300	36		ESD 95
	350	51		ESD 95
	400	64		ESD 95
	450	75		ESD 95

Main Pass Block 37

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The sample was dried with sodium sulphate prior to analysis.				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
30	500	84		ESD 95
	550	91		ESD 95
	600	95		ESD 95
	650	98		ESD 95
	700	99		ESD 95
50	250	4		ESD 95
	300	19		ESD 95
	350	39		ESD 95
	400	54		ESD 95
	450	69		ESD 95
	500	80		ESD 95
	550	88		ESD 95
	600	94		ESD 95
	650	97		ESD 95
	700	99		ESD 95

		Data	Notes	Reference ID
Origin: Angola				
API Gravity		31.0		ESD 93
Equation(s) for Predicting Evaporation				
%Ev = $(1.67 + 0.045T)\ln(t)$				ESD 97
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		0.20		ESD 97
12		0.18		ESD 97
16		0.19		ESD 97
22		0.20		ESD 97
Water Content (weight %)				
<u>Evaporation (weight %)</u>				
0		< 0.1		ESD 99
12		< 0.1		ESD 99
16		< 0.1		ESD 99
22		< 0.1		ESD 99
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-9		ESD 94
12		66		ESD 95
16		91		ESD 95
22		> 95		ESD 95
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8833		ESD 93
	15	0.8701		ESD 93
12	0	0.9105		ESD 95
	15	0.8970		ESD 95
16	0	0.9041		ESD 95
	15	0.9026		ESD 95
22	0	0.9250		ESD 95
	15	0.9141		ESD 95
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		21		ESD 93
12		27		ESD 95
16		31		ESD 95
22		32		ESD 95

Malongo

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	1,800	(a)	ESD 93
		9,100	(b)	ESD 93
		69,600	(c)	ESD 93
12	15	63		ESD 93
	0	34,100	(b)	ESD 95
		362,500	(c)	ESD 95
	15	6,359	(b)	ESD 95
		34,050	(c)	ESD 95
16	0	NM		ESD 95
	15	10,950	(b)	ESD 95
		62,860	(c)	ESD 95
22	0	NM		ESD 95
	15	25,600	(b)	ESD 95
		179,700	(c)	ESD 95
Shear rate = (a) 50/s; (b) 10/s; (c) 1/s				
Chemical Dispersibility (volume %)				
	Corexit 9500	15		ESD 94
	Corexit 9527	5		ESD 92
	Dasic LTS	0		ESD 92
	Enersperse 700	5		ESD 92

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	62		ESD 95
	Aromatics	25		ESD 95
	Resins	9		ESD 95
	Asphaltenes	4		ESD 95
	Waxes	10		ESD 98
12	Saturates	60		ESD 96
	Aromatics	28		ESD 96
	Resins	10		ESD 96
	Asphaltenes	3		ESD 96
	Waxes	9		ESD 98
16	Saturates	55		ESD 96
	Aromatics	29		ESD 96
	Resins	13		ESD 96
	Asphaltenes	3		ESD 96
	Waxes	9		ESD 98
22	Saturates	54		ESD 96
	Aromatics	28		ESD 96
	Resins	15		ESD 96
	Asphaltenes	4		ESD 96
	Waxes	9		ESD 98
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		19	<i>SD = 4</i>	ESD 95
12		46	<i>SD = 5</i>	ESD 95
16		159	<i>SD = 20</i>	ESD 95
22		203	<i>SD = 51</i>	ESD 95

Malongo

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	560		ESD 94
	Toluene	1,770		ESD 94
	Ethylbenzene	250		ESD 94
	Xylenes	1,920		ESD 94
	C3-benzenes	2,370		ESD 94
	Total BTEX	4,490		ESD 94
	Total VOCs	6,870		ESD 94
12	Benzene	0		ESD 96
	Toluene	190		ESD 96
	Ethylbenzene	110		ESD 96
	Xylenes	1,060		ESD 96
	C3-benzenes	2,310		ESD 96
	Total BTEX	1,370		ESD 96
	Total VOCs	3,680		ESD 96
16	Benzene	0		ESD 96
	Toluene	10		ESD 96
	Ethylbenzene	20		ESD 96
	Xylenes	220		ESD 96
	C3-benzenes	1,290		ESD 96
	Total BTEX	250		ESD 96
	Total VOCs	1,540		ESD 96
22	Benzene	0		ESD 96
	Toluene	0		ESD 96
	Ethylbenzene	0		ESD 96
	Xylenes	0		ESD 96
	C3-benzenes	10		ESD 96
	Total BTEX	0		ESD 96
	Total VOCs	10		ESD 96

Surface Tension (mN/m or dynes/cm)

<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>		
0	0	DNF	ESD 94
	15	28.7	ESD 94
12	0	DNF	ESD 95
	15	DNF	ESD 95
16	0	DNF	ESD 95
	15	DNF	ESD 95
22	0	DNF	ESD 95
	15	DNF	ESD 95

		Data	Notes	Reference ID
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	DNF		ESD 94
	15	22.1		ESD 94
12	0	DNF		ESD 95
	15	DNF		ESD 95
16	0	DNF		ESD 95
	15	DNF		ESD 95
22	0	DNF		ESD 95
	15	DNF		ESD 95
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	DNF		ESD 94
	15	23.3		ESD 94
12	0	DNF		ESD 95
	15	DNF		ESD 95
16	0	DNF		ESD 95
	15	DNF		ESD 95
22	0	DNF		ESD 95
	15	DNF		ESD 95

Malongo

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	80	2		ESD 94
	100	4		ESD 94
	120	6		ESD 94
	140	8		ESD 94
	160	10		ESD 94
	180	13		ESD 94
	200	15		ESD 94
	250	21		ESD 94
	300	29		ESD 94
	350	37		ESD 94
	400	44		ESD 94
	450	54		ESD 94
	500	62		ESD 94
	550	69		ESD 94
	600	75		ESD 94
	650	80		ESD 94
	700	85		ESD 94
12	120	1		ESD 95
	140	2		ESD 95
	160	3		ESD 95
	180	5		ESD 95
	200	8		ESD 95
	250	15		ESD 95
	300	24		ESD 95
	350	33		ESD 95
	400	42		ESD 95
	450	53		ESD 95
	500	63		ESD 95
	550	71		ESD 95
	600	78		ESD 95
	650	85		ESD 95
	700	90		ESD 95
16	160	1		ESD 95
	180	2		ESD 95
	200	4		ESD 95
	250	11		ESD 95
	300	20		ESD 95
	350	30		ESD 95
	400	40		ESD 95
	450	52		ESD 95
	500	62		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
16	550	71		ESD 95
	600	79		ESD 95
	650	85		ESD 95
	700	91		ESD 95
22	250	5		ESD 95
	300	14		ESD 95
	350	25		ESD 95
	400	35		ESD 95
	450	48		ESD 95
	500	59		ESD 95
	550	69		ESD 95
	600	77		ESD 95
	650	84		ESD 95
	700	91		ESD 95

Mandji

	Data	Notes	Reference ID
Origin: Gabon			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
API Gravity	30.5		OGJ 99
Sulphur (weight %)	1.10		OGJ 99
Reid Vapour Pressure (kPa)	26		OGJ 99
Pour Point (°C)	3		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
	<u>Temperature (°C)</u>		
	10	44	OGJ 99
Hydrocarbon Groups (weight %)			
	Asphaltenes	0	OGJ 99
Yield on Crude (volume %)			
	<u>Boiling Range (°C)</u>		
	C1-C5	4	OGJ 99
	Gasoline (15-80)	5	OGJ 99
	Heavy naphtha (80-150)	10	OGJ 99
	Kerosene (150-225)	10	OGJ 99
	Gas oil (150-375)	36	OGJ 99
	Residue (>375)	47	OGJ 99
Metals (ppm)			
	Nickel	50	OGJ 99
	Vanadium	48	OGJ 99

		Data	Notes	Reference ID
Origin: United Arab Emirates				
Data from OGJ 99 were originally published in 1985 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity		50.3		OGJ 99
Sulphur (weight %)		0.04		OGJ 99
Water Content (volume %)		< 0.0		OGJ 99
Reid Vapour Pressure (kPa)		68		OGJ 99
Hydrogen Sulphide (ppm)		< 5		OGJ 99
Pour Point (°C)		-8		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	20	1		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	0		OGJ 99
	Waxes	4		OGJ 99
Yield on Crude (volume %)				
	<u>Boiling Range (°C)</u>			
	Light naphtha (IBP-75)	13		OGJ 99
	Naphtha (75-165)	30		OGJ 99
	Kerosene (165-235)	17		OGJ 99
	Diesel (235-350)	21		OGJ 99
	Residue (>350)	14		OGJ 99
Metals (ppm)				
	Nickel	< 0.1		OGJ 99
	Sodium	0.4		OGJ 99
	Vanadium	< 0.1		OGJ 99

Marine Diesel Fuel Oil

	Data	Notes	Reference ID
Synonyms:	Distillate Marine Diesel Marine Fuel Oil 30		
<p>Marine diesel is a heavy gas oil usually used for marine purposes only. Typically used by medium speed and medium/high speed marine diesel engines. Also used in the larger slow speed and medium speed propulsion engine which normally burn residual fuel.</p> <p>Data from Burnett 85 are mean values for worldwide samples of commercial marine fuels.</p> <p>Data from Shell 1999 were taken from MSDS Number 361-301.</p>			
Flash Point (°C)			
<u>Evaporation (volume %)</u>			
0	64		Daling 91
	> 62		Shell 99a
7	86		Daling 91
34	110		Daling 91
Flammability Limits in Air (volume %)	0.5 to 5		Shell 99a
Ignition Temperature (°C)	220		Shell 99a
Density (g/mL)			
	<u>Temperature (°C)</u>		
	15	< 0.9810	Shell 99a
Pour Point (°C)			
<u>Evaporation (volume %)</u>			
0	< -30		Daling 91
7	-30		Daling 91
34	-24		Daling 91
Dynamic Viscosity (mPa·s or cP)			
<u>Evaporation (volume %)</u>	<u>Temperature (°C)</u>		
0	13	4	Daling 91
7		6	Daling 91
34		11	Daling 91
Kinematic Viscosity (mm²/s or cSt)			
	<u>Temperature (°C)</u>		
	50	< 30	Shell 99a
Chemical Dispersibility (volume %)	Relatively high dispersibility.		Daling 91

Marine Diesel Fuel Oil

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (volume %)</u>				
34	Saturates	68		Daling 91
	Aromatics	31		Daling 91
	Resins	1		Daling 91
	Asphaltenes	0		Daling 91
	Waxes	0		Daling 91
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (volume %)</u>	<u>Temperature (°C)</u>			
0	13	20.0		Daling 91
7		17.0		Daling 91
34		17.0		Daling 91
Distillation (°C)				
	<u>Total Distillate (volume %)</u>			
	7	200		Daling 91
	34	250		Daling 91
Boiling Range (°C)				
		150 to 600		Shell 99a

Marine Gas Oil

	Data	Notes	Reference ID
Data from Burnett 85 are mean values for worldwide samples of commercial marine fuels.			
API Gravity	34.2		Burnett 85
Sulphur (weight %)	0.42		Burnett 85
Flash Point (°C)	81		Burnett 85
Pour Point (°C)	-11		Burnett 85
Kinematic Viscosity (mm²/s or cSt)			
Temperature (°C)			
40	4		Burnett 85
Hydrocarbon Groups (weight %)			
Aromatics	38		Burnett 85
Asphaltenes	0		Burnett 85
Metals (ppm)			
Calcium	0.8		Burnett 85
Copper	0.4		Burnett 85
Sodium	1		Burnett 85
Vanadium	< 5		Burnett 85

Marine Gas Oil (Heavy)

	Data	Notes	Reference ID
Data from Burnett 85 are mean values for worldwide samples of commercial marine fuels.			
API Gravity	32.0		Burnett 85
Sulphur (weight %)	0.50		Burnett 85
Flash Point (°C)	99		Burnett 85
Pour Point (°C)	-4		Burnett 85
Kinematic Viscosity (mm²/s or cSt)			
<u>Temperature (°C)</u>			
40	6		Burnett 85
Hydrocarbon Groups (weight %)			
Aromatics	41		Burnett 85
Asphaltenes	0		Burnett 85
Metals (ppm)			
Calcium	0.9		Burnett 85
Copper	0.4		Burnett 85
Sodium	1		Burnett 85
Vanadium	< 5		Burnett 85

Marine Intermediate Fuel Oil

	Data	Notes	Reference ID
EETD 89 data are for 'Interfuel 380' sample received from Irving Oil, St. John, New Brunswick.			
API Gravity	12.9		EETD 89
Sulphur (weight %)	2.60		EETD 89
Density (g/mL)			
	<u>Temperature (°C)</u>		
	0	0.9907	EETD 89
	5	0.9872	EETD 89
	10	0.9827	EETD 89
	15	0.9787	EETD 89
	20	0.9752	EETD 89
	25	0.9712	EETD 89
Dynamic Viscosity (mPa·s or cP)			
	<u>Temperature (°C)</u>		
	0	64,000	EETD 89
	5	31,450	EETD 89
	10	16,000	EETD 89
	15	8,200	EETD 89
	20	5,250	EETD 89
	25	4,000	EETD 89
Hydrocarbon Groups (weight %)			
	Asphaltenes	10	EETD 89
Volatile Organic Compounds (ppm)			
	Benzene	90	ESD 94
	Toluene	50	ESD 94
	Ethylbenzene	0	ESD 94
	Xylenes	90	ESD 94
	C3-benzenes	1,750	ESD 94
	Total BTEX	240	ESD 94
	Total VOCs	1,990	ESD 94
Surface Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	15	33.6	EETD 89
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	15	35.5	EETD 89
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	15	NM	EETD 89

Marine Intermediate Fuel Oil

	Data	Notes	Reference ID
Boiling Point Distribution (weight %)			
	<u>Boiling Point (°C)</u>		
	180	1	ESD 94
	200	2	ESD 94
	250	8	ESD 94
	300	16	ESD 94
	350	24	ESD 94
	400	28	ESD 94
	450	31	ESD 94
	500	34	ESD 94
	550	43	ESD 94
	600	57	ESD 94
	650	72	ESD 94
	700	82	ESD 94
Metals (ppm)			
	Aluminum	52	Cao 92
	Barium	1	Cao 92
	Cadmium	< 0.5	Cao 92
	Calcium	380	Cao 92
	Chromium	< 2	Cao 92
	Cobalt	1	Cao 92
	Copper	< 0.6	Cao 92
	Iron	30	Cao 92
	Lead	< 3	Cao 92
	Magnesium	10	Cao 92
	Manganese	< 0.3	Cao 92
	Mercury	< 15	Cao 92
	Molybdenum	< 0.6	Cao 92
	Nickel	30	Cao 92
	Selenium	< 15	Cao 92
	Strontium	0.3	Cao 92
	Tin	< 15	Cao 92
	Titanium	0.6	Cao 92
	Vanadium	76	Cao 92
	Zinc	1	Cao 92
Aqueous Solubility (mg/L)			
	Room temperature	2	(a) ESD 91
<i>(a) fresh water</i>			

Marine Light

		Data	Notes	Reference ID
Origin: Mexico				
API Gravity		34.5		OGJ 00
Sulphur (weight %)		1.20		OGJ 00
Reid Vapour Pressure (kPa)		51		OGJ 00
Density (g/mL)				
	<u>Temperature (°C)</u>			
	15	0.8520		OGJ 00
Pour Point (°C)		-42		OGJ 00
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	25	7		OGJ 00
Hydrocarbon Groups (weight %)				
	<u>Evaporation (weight %)</u>			
	Asphaltenes	3		OGJ 00
Yield on Crude				
	<u>Boiling Range (°C)</u>			
	Naphtha (C4-177)	5		OGJ 00
	Kerosene(177-274)	20		OGJ 00
	Light gas oil (274-344)	13		OGJ 00
	Heavy gas oil (344-538)	26		OGJ 00
	Residue (>538)	16		OGJ 00
Metals (ppm)				
	Nickel	5		OGJ 00
	Vanadium	24		OGJ 00

	Data	Notes	Reference ID
Origin: Gulf of Mexico, USA			
Data from OGJ 99 were originally published in 1996.			
API Gravity	31.0		OGJ 99
Sulphur (weight %)	2.00		OGJ 99
Reid Vapour Pressure (kPa)	55		OGJ 99
Hydrogen Sulphide (g/100 mL)	0		OGJ 99
Pour Point (°C)	-36		OGJ 99
Saybolt Viscosity (SUS)			
	<u>Temperature (°C)</u>		
	27	83	OGJ 99
	38	64	OGJ 99
	60	46	OGJ 99
Yield on Crude (volume %)			
	<u>Boiling Range (°C)</u>		
	Light ends (IBP-20)	3	OGJ 99
	Gasoline (20-68)	7	OGJ 99
	Light naphtha (68-129)	9	OGJ 99
	Heavy naphtha (129-177)	8	OGJ 99
	Kerosene (177-260)	13	OGJ 99
	Heavy gas oil (260-343)	13	OGJ 99
	FCC feed (343-538)	25	OGJ 99
	Pitch (>538)	23	OGJ 99

Mars TLP

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity		27.6		ESD 99
Equation(s) for Predicting Evaporation				
%Ev = (2.18 + 0.045T)ln(t)				ESD 99
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		2.07		ESD 99
8		1.97		ESD 99
17		2.13		ESD 99
26		2.37		ESD 99
Water Content (weight %)				
<u>Evaporation (weight %)</u>				
0		0.6		ESD 99
8		0.1		ESD 99
17		0.2		ESD 99
26		< 0.1		ESD 99
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-26		ESD 99
8		26		ESD 99
17		71		ESD 99
26		> 100		ESD 99
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.9003		ESD 99
	15	0.8883		ESD 99
	25	0.8817		ESD 99
8	0	0.9231		ESD 99
	15	0.9122		ESD 99
	25	0.9056		ESD 99
17	0	0.9436		ESD 99
	15	0.9331		ESD 99
	25	0.9260		ESD 99
26	0	0.9655		ESD 99
	15	0.9520		ESD 99
	25	0.9461		ESD 99

		Data	Notes	Reference ID
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-28		ESD 99
8		-16		ESD 99
17		-17		ESD 99
26		-7		ESD 99
Dynamic Viscosity (mPa s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	73		ESD 99
	15	33		ESD 99
	25	24		ESD 99
8	0	270		ESD 99
	15	93		ESD 99
	25	57		ESD 99
17	0	1,265		ESD 99
	15	404		ESD 99
	25	171		ESD 99
25	0	10,155		ESD 99
	15	2,237		ESD 99
	25	963		ESD 99
Emulsion Formation				
<u>Evaporation (weight%)</u>				
0	Visual stability	none		ESD 99
8		meso		ESD 99
	Viscosity (mPa·s)	5,836		ESD 99
	Complex modulus (mPa)	12,750		ESD 99
	Water content (wt %)	63		ESD 99
17	Visual stability	meso		ESD 99
	Viscosity (mPa·s)	10,520		ESD 99
	Complex modulus (mPa)	30,800		ESD 99
	Water content (wt %)	65		ESD 99
26	Visual stability	meso		ESD 99
	Viscosity (mPa·s)	30,660		ESD 99
	Complex modulus (mPa)	94,500		ESD 99
	Water content (wt %)	62		ESD 99
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	36		ESD 99
8		34		ESD 99
17		16		ESD 99
26		2		ESD 99

Mars TLP

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	45		ESD 99
	Aromatics	40		ESD 99
	Resins	11		ESD 99
	Asphaltenes	3		ESD 99
8	Saturates	41		ESD 99
	Aromatics	43		ESD 99
	Resins	13		ESD 99
	Asphaltenes	3		ESD 99
17	Saturates	35		ESD 00
	Aromatics	45		ESD 00
	Resins	15		ESD 00
	Asphaltenes	4		ESD 00
26	Saturates	33		ESD 00
	Aromatics	44		ESD 00
	Resins	18		ESD 00
	Asphaltenes	6		ESD 00
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		24	<i>SD = 3</i>	ESD 99
8		25	<i>SD = 2</i>	ESD 99
17		23	<i>SD = 6</i>	ESD 99
26		61	<i>SD = 5</i>	ESD 99

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	835		ESD 99
	Toluene	3,823		ESD 99
	Ethylbenzene	685		ESD 99
	Xylenes	3,395		ESD 99
	C3-benzenes	6,637		ESD 99
	Total BTEX	8,737		ESD 99
	Total VOCs	15,374		ESD 99
8	Benzene	335		ESD 99
	Toluene	2,143		ESD 99
	Ethylbenzene	672		ESD 99
	Xylenes	3,425		ESD 99
	C3-benzenes	7,306		ESD 99
	Total BTEX	6,575		ESD 99
	Total VOCs	13,881		ESD 99
17	Benzene	4		ESD 99
	Toluene	75		ESD 99
	Ethylbenzene	181		ESD 99
	Xylenes	1,199		ESD 99
	C3-benzenes	5,445		ESD 99
	Total BTEX	1,458		ESD 99
	Total VOCs	6,903		ESD 99
26	Benzene	6		ESD 99
	Toluene	2		ESD 99
	Ethylbenzene	0		ESD 99
	Xylenes	0		ESD 99
	C3-benzenes	10		ESD 99
	Total BTEX	9		ESD 99
	Total VOCs	19		ESD 99

Mars TLP

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	27.3		ESD 00
	15	26.2		ESD 00
	25	26.3		ESD 00
8	0	29.1		ESD 00
	15	28.0		ESD 00
	25	27.9		ESD 00
17	0	30.2		ESD 00
	15	29.6		ESD 00
	25	29.4		ESD 00
26	0	32.7		ESD 00
	15	30.8		ESD 00
	25	30.2		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	18.3		ESD 00
	15	21.3		ESD 00
	25	18.0		ESD 00
8	0	19.1		ESD 00
	15	21.1		ESD 00
	25	14.3		ESD 00
17	0	17.6		ESD 00
	15	16.2		ESD 00
	25	11.8		ESD 00
26	0	NM		ESD 00
	15	NM		ESD 00
	25	NM		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	19.4		ESD 00
	15	24.8		ESD 00
	25	21.1		ESD 00
8	0	19.6		ESD 00
	15	21.8		ESD 00
	25	20.3		ESD 00
17	0	NM		ESD 00
	15	19.7		ESD 00
	25	14.2		ESD 00
26	0	NM		ESD 00
	15	NM		ESD 00
	25	NM		ESD 00

		Data	Notes	Reference ID
Origin: New Zealand				
Samples were received from Shell Todd Oil Services Ltd., New Zealand, January 2000.				
API Gravity		44.3		Shell Todd 00
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		< -30		ESD 00
14		8		ESD 00
30		66		ESD 00
44		> 100		ESD 00
Reid Vapour Pressure (kPa)		83		Shell Todd 00
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8248		ESD 00
	15	0.8047		Shell Todd 00
		0.8081		ESD 00
	25	0.7980		ESD 00
14	0	0.8475		ESD 00
	15	0.8340		ESD 00
	25	0.8220		ESD 00
30	0	0.8509	(a)	ESD 00
	15	0.8421		ESD 00
	25	0.8382		ESD 00
44	0	0.8530	(a)	ESD 00
	15	0.8640	(a)	ESD 00
	25	0.8490		ESD 00
(a) Very waxy sample; major cracking at lower temperatures. Only one measurement was made due to sampling and instrument cleaning problems.				
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		18		Shell Todd 00
		11		ESD 00
14		24		ESD 00
30		28		ESD 00
44		37		ESD 00
Cloud Point (°C)		40		Shell Todd 00

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		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	664	(a)	ESD 00
		2,414	(b)	ESD 00
		78,330	(c)	ESD 00
	15	15		ESD 00
	20	4		Shell Todd 00
	25	3		ESD 00
14	0	722	(a)	ESD 00
		4,362	(b)	ESD 00
		NM	(c)	ESD 00
	15	212		ESD 00
	25	5		ESD 00
30	0	NM		ESD 00
	15	1,048	(a)	ESD 00
		7,844	(b)	ESD 00
		42,400	(c)	ESD 00
	25	361	(a)	ESD 00
		4,257	(b)	ESD 00
		NM	(c)	ESD 00
44	0	NM		ESD 00
	15	NM		ESD 00
	25	NM		ESD 00
<i>shear rate = (a) 100/s; (b) 10/s; (c) 1/s</i>				
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	33		ESD 00
14		28		ESD 00
30		< 10		ESD 00
44		< 10		ESD 00
Hydrocarbon Groups (weight %)				
	Asphaltenes	0		Shell Todd 00
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		8	SD = 1	ESD 00
14		26	SD = 2	ESD 00
30		18	*SD = 5	ESD 00
44		33	*SD = 12	ESD 00

* Very waxy samples. Almost no oil adhered to the needle.

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	DNF		ESD 00
	15	31.1		ESD 00
	25	24.9		ESD 00
14	0	DNF		ESD 00
	15	DNF		ESD 00
	25	25.8		ESD 00
30	0	DNF		ESD 00
	15	DNF		ESD 00
	25	29.4		ESD 00
44	0	DNF		ESD 00
	15	DNF		ESD 00
	25	DNF		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	DNF		ESD 00
	15	NM		ESD 00
	25	16.7		ESD 00
14	0	DNF		ESD 00
	15	DNF		ESD 00
	25	14.6		ESD 00
30	0	DNF		ESD 00
	15	DNF		ESD 00
	25	NM		ESD 00
44	0	DNF		ESD 00
	15	DNF		ESD 00
	25	DNF		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	DNF		ESD 00
	15	NM		ESD 00
	25	15.4		ESD 00
14	0	DNF		ESD 00
	15	DNF		ESD 00
	25	17.2		ESD 00
30	0	DNF		ESD 00
	15	DNF		ESD 00
	25	NM		ESD 00
44	0	DNF		ESD 00
	15	DNF		ESD 00
	25	DNF		ESD 00

Maureen

		Data	Notes	Reference ID
Origin: North Sea, UK				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity		38.8		OGJ 99
Sulphur (weight %)		0.55		OGJ 99
Pour Point (°C)		7		OGJ 99
Saybolt Viscosity (SUS)				
	<u>Temperature (°C)</u>			
	21	79		OGJ 99
Yield on Crude (volume %)				
	<u>Boiling Range (°C)</u>			
	C1-C4	3		OGJ 99
	Gasoline (16-93)	9		OGJ 99
	Naphtha (16-204)	28		OGJ 99
	Kerosene (204-260)	12		OGJ 99
	Gas oil (260-343)	16		OGJ 99
	Topped crude (>343)	42		OGJ 99

Origin: Mexico		Data	Notes	Reference ID
API Gravity				
		21.3		ESD 93
		21.5		OGJ 00
Equation(s) for Predicting Evaporation				
%Ev = (1.45 + 0.045T)ln(t)				ESD 96
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		3.00		ESD 94
		3.40		OGJ 00
9		3.74		ESD 94
15		3.98		ESD 94
22		4.18		ESD 94
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-9		ESD 93
9		54		ESD 94
15		93		ESD 94
22		> 95		ESD 94
Reid Vapour Pressure (kPa)				
		41		OGJ 00
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.9359		ESD 93
	15	0.9255		ESD 93
		0.9243		OGJ 00
9	0	0.9628		ESD 94
	15	0.9515		ESD 94
15	0	0.9769		ESD 94
	15	0.9657		ESD 94
22	0	0.9978		ESD 94
	15	0.9868		ESD 94
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-15		ESD 93
		-30		OGJ 00
9		-9		ESD 94
15		-2		ESD 94
22		17		ESD 94

Maya

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	1,039		ESD 93
	15	280		ESD 93
9	0	9,436		ESD 94
	15	1,980		ESD 94
15	0	90,500		ESD 94
	15	8,670		ESD 94
22	0	NM		ESD 94
	15	405,000		ESD 94
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	25	170		OGJ 00
Chemical Dispersibility (volume %)				
	Corexit 9527	0		ESD 91
	Dasic LTS	0		ESD 91
	Enersperse 700	5		ESD 91
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	38		ESD 95
	Aromatics	39		ESD 95
	Resins	8		ESD 95
	Asphaltenes	16		ESD 95
		9		OGJ 00
	Waxes	7		ESD 93
9	Saturates	33		ESD 95
	Aromatics	41		ESD 95
	Resins	8		ESD 95
	Asphaltenes	18		ESD 95
	Waxes	3		ESD 98
15	Saturates	31		ESD 95
	Aromatics	41		ESD 95
	Resins	10		ESD 95
	Asphaltenes	17		ESD 95
	Waxes	4		ESD 98
22	Saturates	28		ESD 95
	Aromatics	39		ESD 94
	Resins	11		ESD 95
	Asphaltenes	22		ESD 95
	Waxes	4		ESD 98

		Data	Notes	Reference ID
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		71	<i>SD = 7</i>	ESD 95
9		82	<i>SD = 9</i>	ESD 95
15		102	<i>SD = 9</i>	ESD 95
22		594	<i>SD = 106</i>	ESD 95
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	500		ESD 94
	Toluene	1,350		ESD 94
	Ethylbenzene	770		ESD 94
	Xylenes	2,880		ESD 94
	C3-benzenes	4,100		ESD 94
	Total BTEX	5,500		ESD 94
	Total VOCs	9,590		ESD 94
9	Benzene	100		ESD 94
	Toluene	660		ESD 94
	Ethylbenzene	460		ESD 94
	Xylenes	1,930		ESD 94
	C3-benzenes	3,550		ESD 94
	Total BTEX	3,150		ESD 94
	Total VOCs	6,700		ESD 94
15	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	50		ESD 94
	Xylenes	300		ESD 94
	C3-benzenes	1,630		ESD 94
	Total BTEX	350		ESD 94
	Total VOCs	1,980		ESD 94
22	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

Maya

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	29.2		ESD 94
	15	28.2		ESD 94
9	0	33.3		ESD 94
	15	29.7		ESD 94
15	0	DNF		ESD 94
	15	30.9		ESD 94
22	0	DNF		ESD 94
	15	DNF		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	NM		ESD 94
	15	27.0		ESD 94
9	0	NM		ESD 94
	15	26.0		ESD 94
15	0	DNF		ESD 94
	15	NM		ESD 94
22	0	DNF		ESD 94
	15	DNF		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	NM		ESD 94
	15	28.5		ESD 94
9	0	NM		ESD 94
	15	28.5		ESD 94
15	0	DNF		ESD 94
	15	NM		ESD 94
22	0	DNF		ESD 94
	15	DNF		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	80	1		ESD 94
	100	1		ESD 94
	120	6		ESD 94
	140	8		ESD 94
	160	9		ESD 94
	180	11		ESD 94
	200	13		ESD 94
	250	19		ESD 94
	300	25		ESD 94
	350	32		ESD 94
	400	38		ESD 94
	450	45		ESD 94
	500	52		ESD 94
	550	59		ESD 94
	600	65		ESD 94
	650	72		ESD 94
	700	78		ESD 94
9	120	1		ESD 95
	140	2		ESD 95
	160	4		ESD 95
	180	6		ESD 95
	200	8		ESD 95
	250	15		ESD 95
	300	22		ESD 95
	350	30		ESD 95
	400	37		ESD 95
	450	45		ESD 95
	500	52		ESD 95
	550	60		ESD 95
	600	67		ESD 95
	650	73		ESD 95
	700	79		ESD 95
15	180	2		ESD 95
	200	3		ESD 95
	250	10		ESD 95
	300	17		ESD 95
	350	25		ESD 95
	400	33		ESD 95
	450	41		ESD 95
	500	49		ESD 95
	550	57		ESD 95

Maya

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
15	600	65		ESD 95
	650	72		ESD 95
	700	78		ESD 95
22	250	2		ESD 95
	300	9		ESD 95
	350	18		ESD 95
	400	27		ESD 95
	450	36		ESD 95
	500	44		ESD 95
	550	53		ESD 95
	600	62		ESD 95
	650	70		ESD 95
	700	76		ESD 95
Yield on Crude (volume %)				
	<u>Boiling Range (°C)</u>			
	Naphtha (C5-177)	15		OGJ 00
	Kerosene (177-274)	14		OGJ 00
	Light gas oil (274-344)	9		OGJ 00
	Heavy gas oil (344-538)	24		OGJ 00
	Residue (>538)	37		OGJ 00

		Data	Notes	Reference ID
Metals (ppm)				
	Aluminum	9		Cao 92
	Barium	< 0.3		Cao 92
	Cadmium	< 0.5		Cao 92
	Calcium	102		Cao 92
	Chromium	< 2		Cao 92
	Cobalt	< 1		Cao 92
	Copper	< 0.6		Cao 92
	Iron	< 3		Cao 92
	Lead	< 3		Cao 92
	Magnesium	17		Cao 92
	Manganese	< 0.3		Cao 92
	Mercury	< 15		Cao 92
	Molybdenum	1		Cao 92
	Nickel	46		Cao 92
		53		OGJ 00
	Selenium	< 15		Cao 92
	Strontium	< 0.2		Cao 92
	Tin	< 15		Cao 92
	Titanium	< 0.6		Cao 92
	Vanadium	257		Cao 92
		278		OGJ 00
	Zinc	< 0.6		Cao 92
Aqueous Solubility (mg/L)				
	Room temperature	20	(a)	ESD 92
<i>(a) fresh water</i>				
Acute Toxicity of Water Soluble Fraction (mg/L)				
	<u>Test Organism</u>			
48h LC50	Daphnia magna	> 13	(a)	Harris 94
<i>(a) results based on GC headspace analysis</i>				

Maya (1997)

		Data	Notes	Reference ID
Origin: Mexico				
API Gravity		21.8		ESD 97
Equation(s) for Predicting Evaporation				
%Ev = (1.38 + 0.045T)ln(t)				ESD 98
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		3.30		ESD 97
19		3.65		ESD 97
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-7		ESD 97
19		> 95		ESD 97
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.9339		ESD 97
	15	0.9219		ESD 97
	25	0.9188		ESD 98
19	0	0.9908		ESD 97
	15	0.9762		ESD 98
	25	0.9727		ESD 98
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-20		ESD 97
19		3		ESD 97
Dynamic Viscosity (mPa s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	1,112		ESD 97
	15	299		ESD 97
	25	205		ESD 98
19	0	2,274,000	(a)	ESD 97
	15	99,390		ESD 97
	25	20,590		ESD 98
(a) shear rate = 0.5/s				
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	15		ESD 00
19		13		ESD 00

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	39		ESD 98
	Aromatics	34		ESD 98
	Resins	11		ESD 98
	Asphaltenes	16		ESD 98
19	Saturates	29		ESD 98
	Aromatics	35		ESD 98
	Resins	14		ESD 98
	Asphaltenes	21		ESD 98
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		69	<i>SD = 9</i>	ESD 98
19		341	<i>SD = 17</i>	ESD 98
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	459		ESD 97
	Toluene	4,742		ESD 97
	Ethylbenzene	1,059		ESD 97
	Xylenes	3,513		ESD 97
	C3-benzenes	4,920		ESD 97
	Total BTEX	9,773		ESD 97
	Total VOCs	14,693		ESD 97
19	Benzene	0		ESD 98
	Toluene	2		ESD 98
	Ethylbenzene	0		ESD 98
	Xylenes	1		ESD 98
	C3-benzenes	61		ESD 98
	Total BTEX	3		ESD 98
	Total VOCs	64		ESD 98
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	29.4		ESD 97
	15	28.0		ESD 97
	25	27.5		ESD 00
19	0	NM		ESD 98
	15	NM		ESD 98
	25	NM		ESD 98

Maya (1997)

		Data	Notes	Reference ID
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	28.8		ESD 97
	15	27.3		ESD 97
	25	14.1		ESD 00
19	0	NM		ESD 98
	15	NM		ESD 98
	25	NM		ESD 98
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	28.4		ESD 97
	15	27.6		ESD 97
	25	13.1		ESD 00
19	0	NM		ESD 98
	15	NM		ESD 98
	25	NM		ESD 98

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	40	5		ESD 97
	60	6		ESD 97
	80	8		ESD 97
	100	10		ESD 97
	120	10		ESD 97
	140	12		ESD 97
	160	14		ESD 97
	180	17		ESD 97
	200	20		ESD 97
	250	27		ESD 97
	300	34		ESD 97
	350	44		ESD 97
	400	52		ESD 97
	450	61		ESD 97
	500	69		ESD 97
	550	77		ESD 97
	600	84		ESD 97
	650	91		ESD 97
	700	96		ESD 97
19	250	5		ESD 97
	300	14		ESD 97
	350	24		ESD 97
	400	35		ESD 97
	450	46		ESD 97
	500	56		ESD 97
	550	65		ESD 97
	600	73		ESD 97
	650	80		ESD 97
	700	86		ESD 97

Medanito

	Data	Notes	Reference ID
Origin: Argentina			
Synonyms: Neuguen Rio Negro Blend			
Data from OGJ 99 were originally published in 1995.			
API Gravity	35.1		OGJ 99
Sulphur (weight %)	0.43		OGJ 99
Reid Vapour Pressure (kPa)	21		OGJ 99
Hydrogen Sulphide (ppm)	< 1		OGJ 99
Density (g/mL)			
	<u>Temperature (°C)</u>		
	15	0.8495	OGJ 99
Pour Point (°C)	-1		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
	<u>Temperature (°C)</u>		
	16	16	OGJ 99
	38	6	OGJ 99
Yield on Crude (volume %)			
	<u>Boiling Range (°C)</u>		
	IBP-C5	1	OGJ 99
	71-193	24	OGJ 99
	193-249	10	OGJ 99
	249-349	20	OGJ 99
	349-557	27	OGJ 99
	>557	14	OGJ 99
Metals (ppm)			
	Copper	< 0.3	OGJ 99
	Iron	3	OGJ 99
	Nickel	3	OGJ 99
	Vanadium	8	OGJ 99

		Data	Notes	Reference ID
Origin: Venezuela				
Data from OGJ 99 were originally published in 1997.				
API Gravity		14.7		OGJ 99
Sulphur (weight %)		2.74		OGJ 99
Flash Point (°C)		37		OGJ 99
Reid Vapour Pressure (kPa)		14		OGJ 99
Density (g/mL)				
	<u>Temperature (°C)</u>			
	15	0.9679		OGJ 99
Pour Point (°C)		-12		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	38	992		OGJ 99
	99	39		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	9		OGJ 99
Yield on Crude (weight %)				
	<u>Boiling Range (°C)</u>			
	IBP-100	1		OGJ 99
	100-150	2		OGJ 99
	150-200	2		OGJ 99
	200-250	5		OGJ 99
	250-300	6		OGJ 99
	300-343	6		OGJ 99
	343-402	12		OGJ 99
	402-461	10		OGJ 99
	461-520	9		OGJ 99
	>520	46		OGJ 99
Metals (ppm)				
	Aluminum	< 5		OGJ 99
	Nickel	84		OGJ 99
	Sodium	25		OGJ 99
	Vanadium	303		OGJ 99
Other Elements (weight %)				
	Nitrogen	0.51		OGJ 99

Mineral Spirits

		Data	Notes	Reference ID
Synonyms:	Naphtha			
	Petroleum Spirits			
	Varsol			
Density (g/mL)				
	<u>Temperature (°C)</u>			
	0	0.8040		EETD 86
	15	0.7930		EETD 86
Dynamic Viscosity (mPa·s or cP)				
	<u>Temperature (°C)</u>			
	0	1		EETD 86
	15	1		EETD 86
Surface Tension (mN/m or dynes/cm)				
	<u>Temperature (°C)</u>			
	0	26.2		EETD 86
	15	24.7		EETD 86
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
	<u>Temperature (°C)</u>			
	0	43.2		EETD 86
	15	43.1		EETD 86
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
	<u>Temperature (°C)</u>			
	0	44.4		EETD 86
	15	43.9		EETD 86

		Data	Notes	Reference ID
Origin: Malaysia				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity		36.3		OGJ 99
Sulphur (weight %)		0.08		OGJ 99
Reid Vapour Pressure (kPa)		32		OGJ 99
Pour Point (°C)		1		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	21	4		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	0		OGJ 99
	Waxes	3		OGJ 99
Yield on Crude				
	<u>Boiling Range (°C)</u>			
Weight %	C1-C5	2		OGJ 99
Volume %	Light naphtha (C5-63)	2		OGJ 99
	Heavy naphtha (63-166)	23		OGJ 99
	Kerosene (166-232)	16		OGJ 99
	Light distillate (232-343)	33		OGJ 99
	Residue (>343)	25		OGJ 99
Metals (ppm)				
	Nickel	< 0.002		OGJ 99
	Vanadium	0.01		OGJ 99
Other Elements (weight %)				
	Nitrogen	0.01		OGJ 99

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity		35.2		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (2.62 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		0.21		ESD 94
10		0.19		ESD 94
21		0.21		ESD 94
35		0.26		ESD 94
Water Content (weight %)				
		0.1		ESD 94
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-6		ESD 94
10		54		ESD 94
21		> 95		ESD 94
35		> 95		ESD 94
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8591		ESD 94
	15	0.8483		ESD 94
	25	0.8412		ESD 94
10	0	0.8760		ESD 94
	15	0.8655		ESD 94
	25	0.8584		ESD 94
21	0	0.8869		ESD 94
	15	0.8762		ESD 94
	25	0.8692		ESD 94
35	0	0.8988		ESD 94
	15	0.8874		ESD 94
	25	0.8806		ESD 94
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-40		ESD 94
10		-28		ESD 94
21		-22		ESD 94
35		16		ESD 94

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	12		ESD 94
	15	7		ESD 94
	25	5		ESD 94
10	0	25		ESD 94
	15	11		ESD 94
	25	8		ESD 94
21	0	56		ESD 94
	15	21		ESD 94
	25	15		ESD 94
35	0	164		ESD 94
	15	51		ESD 94
	25	30		ESD 94
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
	Corexit 9500	29		ESD 00
	Corexit 9527	15		ESD 94
	Dasic LTS	15		ESD 94
	Enersperse 700	10		ESD 94
10	Corexit 9500	22		ESD 00
21		17		ESD 00
35		15		ESD 00

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	71		ESD 95
	Aromatics	25		ESD 95
	Resins	4		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	5		ESD 97
10	Saturates	71		ESD 95
	Aromatics	23		ESD 95
	Resins	6		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	4		ESD 98
21	Saturates	69		ESD 95
	Aromatics	24		ESD 95
	Resins	6		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	4		ESD 98
35	Saturates	67		ESD 95
	Aromatics	26		ESD 95
	Resins	7		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	5		ESD 98
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		8	<i>SD = 3</i>	ESD 95
10		10	<i>SD = 1</i>	ESD 95
21		22	<i>SD = 2</i>	ESD 95
35		41	<i>SD = 1</i>	ESD 95

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	720		ESD 94
	Toluene	2,650		ESD 94
	Ethylbenzene	760		ESD 94
	Xylenes	4,620		ESD 94
	C3-benzenes	5,700		ESD 94
	Total BTEX	8,740		ESD 94
	Total VOCs	14,440		ESD 94
10	Benzene	90		ESD 94
	Toluene	560		ESD 94
	Ethylbenzene	460		ESD 94
	Xylenes	2,820		ESD 94
	C3-benzenes	4,260		ESD 94
	Total BTEX	3,940		ESD 94
	Total VOCs	8,190		ESD 94
21	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	40		ESD 94
	C3-benzenes	820		ESD 94
	Total BTEX	40		ESD 94
	Total VOCs	860		ESD 94
35	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	27.9		ESD 94
	15	27.2		ESD 94
	25	26.3		ESD 94
10	0	29.3		ESD 94
	15	28.5		ESD 94
	25	25.4		ESD 94
21	0	30.1		ESD 94
	15	29.6		ESD 94
	25	28.8		ESD 94
35	0	30.9		ESD 94
	15	30.3		ESD 94
	25	29.5		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	16.0		ESD 94
	15	18.1		ESD 94
	25	14.7		ESD 94
10	0	18.5		ESD 94
	15	19.3		ESD 94
	25	17.6		ESD 94
21	0	18.5		ESD 94
	15	17.0		ESD 94
	25	16.5		ESD 94
35	0	16.0		ESD 94
	15	15.8		ESD 94
	25	14.1		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	19.3		ESD 94
	15	19.7		ESD 94
	25	17.8		ESD 94
10	0	20.7		ESD 94
	15	22.7		ESD 94
	25	20.3		ESD 94
21	0	21.4		ESD 94
	15	21.7		ESD 94
	25	18.9		ESD 94
35	0	18.5		ESD 94
	15	19.3		ESD 94
	25	18.1		ESD 94

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	100	1		ESD 94
	120	1		ESD 94
	140	3		ESD 94
	160	11		ESD 94
	180	18		ESD 94
	200	23		ESD 94
	250	37		ESD 94
	300	52		ESD 94
	350	66		ESD 94
	400	75		ESD 94
	450	84		ESD 94
	500	90		ESD 94
	550	94		ESD 95
	600	97		ESD 94
	650	99		ESD 94
10	120	1		ESD 95
	140	3		ESD 95
	160	6		ESD 95
	180	10		ESD 95
	200	14		ESD 95
	250	29		ESD 95
	300	47		ESD 95
	350	62		ESD 95
	400	72		ESD 95
	450	81		ESD 95
	500	88		ESD 95
	550	93		ESD 95
	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95
21	180	2		ESD 95
	200	4		ESD 95
	250	20		ESD 95
	300	39		ESD 95
	350	56		ESD 95
	400	68		ESD 95
	450	79		ESD 95
	500	86		ESD 95
	550	92		ESD 95
	600	96		ESD 95
	650	98		ESD 95

Mississippi Canyon Block 194

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
21	700	99		ESD 95
35	250	6		ESD 95
	300	27		ESD 95
	350	47		ESD 95
	400	62		ESD 95
	450	74		ESD 95
	500	83		ESD 95
	550	90		ESD 95
	600	94		ESD 95
	650	97		ESD 95
	700	99		ESD 95

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity		32.0		ESD 98
Equation(s) for Predicting Evaporation				
%Ev = (2.15 + 0.045T)ln(t)				ESD 99
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		0.39		ESD 99
9		0.36		ESD 99
18		0.40		ESD 99
26		0.48		ESD 99
Water Content (weight %)				
<u>Evaporation (weight %)</u>				
0		1.0		ESD 98
9		< 0.1		ESD 98
18		< 0.1		ESD 98
26		< 0.1		ESD 98
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		-5		ESD 98
9		41		ESD 98
18		82		ESD 98
26		> 95		ESD 98
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.8759		ESD 98
	15	0.8649		ESD 98
	25	0.8576		ESD 98
9	0	0.8942		ESD 98
	15	0.8827		ESD 98
	25	0.8759		ESD 98
18	0	0.9087		ESD 98
	15	0.8966		ESD 98
	25	0.8898		ESD 98
26	0	0.9210		ESD 98
	15	0.9095		ESD 98
	25	0.9025		ESD 98

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-28		ESD 98
9		-6		ESD 98
18		-1		ESD 98
26		1		ESD 98
Dynamic Viscosity (mPa s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	36		ESD 98
	15	16		ESD 98
	25	12		ESD 98
9	0	74		ESD 98
	15	34		ESD 98
	25	22		ESD 98
18	0	215	(a)	ESD 98
	15	76		ESD 98
	25	46		ESD 98
26	0	1,120	(b)	ESD 98
		2,686	(c)	ESD 98
		5,055	(d)	ESD 98
	15	195		ESD 98
	25	106		ESD 98
(a) slightly non-newtonian shear rate = (b) 100/s; (c) 100/s; (d) 1/s				
Emulsion Formation				
<u>Evaporation (weight%)</u>				
0	Visual stability	none		ESD 99
9		none		ESD 99
18		meso		ESD 99
	Viscosity (mPa·s)	4,899		ESD 99
	Complex modulus (mPa)	7,000		ESD 99
	Water content (wt %)	52		ESD 99
26	Visual stability	stable		ESD 99
	Viscosity (mPa·s)	32,990		ESD 99
	Complex modulus (mPa)	220,000		ESD 99
	Water content (wt %)	74		ESD 99
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	31		ESD 99
9		24		ESD 99
18		19		ESD 99
26		18		ESD 99

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	64		ESD 98
	Aromatics	27		ESD 98
	Resins	7		ESD 98
	Asphaltenes	2		ESD 98
9	Saturates	57		ESD 98
	Aromatics	33		ESD 98
	Resins	8		ESD 98
	Asphaltenes	2		ESD 98
18	Saturates	58		ESD 98
	Aromatics	32		ESD 98
	Resins	9		ESD 98
	Asphaltenes	2		ESD 98
26	Saturates	52		ESD 98
	Aromatics	34		ESD 98
	Resins	11		ESD 98
	Asphaltenes	3		ESD 98
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		12	<i>SD = 1</i>	ESD 98
9		22	<i>SD = 1</i>	ESD 98
18		40	<i>SD = 1</i>	ESD 98
26		39	<i>SD = 4</i>	ESD 98

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	235		ESD 98
	Toluene	1,567		ESD 98
	Ethylbenzene	859		ESD 98
	Xylenes	4,796		ESD 98
	C3-benzenes	6,261		ESD 98
	Total BTEX	7,457		ESD 98
	Total VOCs	13,718		ESD 98
9	Benzene	101		ESD 98
	Toluene	900		ESD 98
	Ethylbenzene	711		ESD 98
	Xylenes	4,216		ESD 98
	C3-benzenes	6,537		ESD 98
	Total BTEX	5,928		ESD 98
	Total VOCs	12,465		ESD 98
18	benzene	0		ESD 98
	Toluene	0		ESD 98
	Ethylbenzene	81		ESD 98
	Xylenes	737		ESD 98
	C3-benzenes	3,557		ESD 98
	Total BTEX	818		ESD 98
	Total VOCs	4,375		ESD 98
26	Benzene	0		ESD 98
	Toluene	2		ESD 98
	Ethylbenzene	0		ESD 98
	Xylenes	0		ESD 98
	C3-benzenes	27		ESD 98
	Total BTEX	2		ESD 98
	Total VOCs	29		ESD 98

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	27.8		ESD 98
	15	27.1		ESD 98
	25	26.2		ESD 98
9	0	29.2		ESD 98
	15	28.6		ESD 98
	25	27.6		ESD 98
18	0	30.4		ESD 98
	15	29.7		ESD 98
	25	28.7		ESD 98
26	0	31.1		ESD 98
	15	30.8		ESD 98
	25	29.5		ESD 98
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	26.5		ESD 98
	15	25.5		ESD 98
	25	25.4		ESD 98
9	0	28.1		ESD 98
	15	29.0		ESD 98
	25	28.2		ESD 98
18	0	27.3		ESD 98
	15	27.9		ESD 98
	25	26.3		ESD 98
26	0	NM		ESD 98
	15	21.8		ESD 98
	25	20.3		ESD 98
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	28.1		ESD 98
	15	27.1		ESD 98
	25	27.0		ESD 98
9	0	28.1		ESD 98
	15	29.1		ESD 98
	25	30.2		ESD 98
18	0	27.9		ESD 98
	15	28.3		ESD 98
	25	27.8		ESD 98
26	0	NM		ESD 98
	15	22.1		ESD 98
	25	20.9		ESD 98

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	40	1		ESD 99
	60	1		ESD 99
	80	2		ESD 99
	100	4		ESD 99
	120	7		ESD 99
	140	10		ESD 99
	160	13		ESD 99
	180	16		ESD 99
	200	20		ESD 99
	250	29		ESD 99
	300	39		ESD 99
	350	49		ESD 99
	400	59		ESD 99
	450	68		ESD 99
	500	76		ESD 99
	550	82		ESD 99
	600	87		ESD 99
	650	91		ESD 99
	700	94		ESD 99
9	100	1		ESD 99
	120	2		ESD 99
	140	5		ESD 99
	160	8		ESD 99
	180	11		ESD 99
	200	15		ESD 99
	250	25		ESD 99
	300	36		ESD 99
	350	48		ESD 99
	400	59		ESD 99
	450	69		ESD 99
	500	77		ESD 99
	550	85		ESD 99
	600	90		ESD 99
	650	95		ESD 99
18	700	98		ESD 99
	160	1		ESD 99
	180	4		ESD 99
	200	7		ESD 99
	250	17		ESD 99
	300	30		ESD 99
	350	43		ESD 99

Mississippi Canyon Block 72

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
18	400	54		ESD 99
	450	65		ESD 99
	500	75		ESD 99
	550	83		ESD 99
	600	89		ESD 99
	650	94		ESD 99
	700	97		ESD 99
26	200	1		ESD 99
	250	9		ESD 99
	300	22		ESD 99
	350	36		ESD 99
	400	49		ESD 99
	450	62		ESD 99
	500	72		ESD 99
	550	81		ESD 99
	600	88		ESD 99
	650	94		ESD 99
	700	97		ESD 99

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
API Gravity		27.5		ESD 98
Equation(s) for Predicting Evaporation				
%Ev = (2.05 + 0.045T)ln(t)				ESD 99
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				
Sulphur (weight %)				
<u>Evaporation (weight %)</u>				
0		2.19		ESD 99
9		2.13		ESD 99
16		2.31		ESD 99
26		2.51		ESD 99
Water Content (weight %)				
<u>Evaporation (weight %)</u>				
0		0.2		ESD 98
9		< 0.1		ESD 98
16		< 0.1		ESD 98
26		< 0.1		ESD 98
Flash Point (°C)				
<u>Evaporation (weight %)</u>				
0		< -30		ESD 98
9		29		ESD 98
16		75		ESD 98
26		> 95		ESD 98
Density (g/mL)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	0.9010		ESD 98
	15	0.8894		ESD 98
	25	0.8830		ESD 98
9	0	0.9292		ESD 98
	15	0.9187		ESD 98
	25	0.9118		ESD 98
16	0	0.9481		ESD 98
	15	0.9375		ESD 98
	25	0.9310		ESD 98
26	0	0.9683		ESD 98
	15	0.9582		ESD 98
	25	0.9501		ESD 98

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Pour Point (°C)				
<u>Evaporation (weight %)</u>				
0		-34		ESD 98
9		-33		ESD 98
16		-26		ESD 98
25		-5		ESD 98
Dynamic Viscosity (mPa s or cP)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	81		ESD 98
	15	41		ESD 98
	25	29		ESD 98
9	0	369		ESD 98
	15	127		ESD 98
	25	74		ESD 98
16	0	1,727		ESD 98
	15	491		ESD 98
	25	235		ESD 98
26	0	20,110		ESD 98
	15	3,454		ESD 98
	26	1,387		ESD 98
Emulsion Formation				
<u>Evaporation (weight%)</u>				
0	Visual stability	meso		ESD 99
	Viscosity (mPa·s)	6,199		ESD 99
	Complex modulus (mPa)	10,150		ESD 99
	Water content (wt %)	60		ESD 99
9	Visual stability	meso		ESD 99
	Viscosity (mPa·s)	10,130		ESD 99
	Complex modulus (mPa)	19,500		ESD 99
	Water content (wt %)	68		ESD 99
16	Visual stability	stable		ESD 99
	Viscosity (mPa·s)	17,850		ESD 99
	Complex modulus (mPa)	54,500		ESD 99
	Water content (wt %)	68		ESD 99
26	Visual stability	stable		ESD 99
	Viscosity (mPa·s)	33,640		ESD 99
	Complex modulus (mPa)	160,000		ESD 99
	Water content (wt %)	65		ESD 99

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Chemical Dispersibility (volume %)				
<u>Evaporation (weight %)</u>				
0	Corexit 9500	19		ESD 99
9		17		ESD 99
16		0		ESD 99
26		0		ESD 99
Hydrocarbon Groups (weight %)				
<u>Evaporation (weight %)</u>				
0	Saturates	47		ESD 98
	Aromatics	35		ESD 98
	Resins	12		ESD 98
	Asphaltenes	6		ESD 98
9	Saturates	39		ESD 98
	Aromatics	41		ESD 98
	Resins	13		ESD 98
	Asphaltenes	7		ESD 98
16	Saturates	39		ESD 98
	Aromatics	41		ESD 98
	Resins	13		ESD 98
	Asphaltenes	7		ESD 98
26	Saturates	31		ESD 98
	Aromatics	43		ESD 98
	Resins	18		ESD 98
	Asphaltenes	8		ESD 98
Adhesion (g/m²)				
<u>Evaporation (weight %)</u>				
0		29	<i>SD = 3</i>	ESD 98
9		33	<i>SD = 2</i>	ESD 98
16		32	<i>SD = 5</i>	ESD 98
26		54	<i>SD = 7</i>	ESD 98

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
<u>Evaporation (weight %)</u>				
0	Benzene	220		ESD 98
	Toluene	994		ESD 98
	Ethylbenzene	821		ESD 98
	Xylenes	3,971		ESD 98
	C3-benzenes	5,810		ESD 98
	Total BTEX	6,006		ESD 98
	Total VOCs	11,816		ESD 98
9	Benzene	160		ESD 98
	Toluene	659		ESD 98
	Ethylbenzene	775		ESD 98
	Xylenes	3,819		ESD 98
	C3-benzenes	6,264		ESD 98
	Total BTEX	5,413		ESD 98
	Total VOCs	11,676		ESD 98
16	Benzene	0		ESD 98
	Toluene	126		ESD 98
	Ethylbenzene	219		ESD 98
	Xylenes	1,407		ESD 98
	C3-benzenes	4,832		ESD 98
	Total BTEX	1,752		ESD 98
	Total VOCs	6,584		ESD 98
26	Benzene	0		ESD 98
	Toluene	0		ESD 98
	Ethylbenzene	0		ESD 98
	Xylenes	0		ESD 98
	C3-benzenes	13		ESD 98
	Total BTEX	1		ESD 98
	Total VOCs	14		ESD 98

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	26.8		ESD 98
	15	26.4		ESD 98
	25	23.4		ESD 98
9	0	29.1		ESD 98
	15	28.5		ESD 98
	25	27.5		ESD 98
16	0	31.1		ESD 98
	15	30.1		ESD 98
	25	28.9		ESD 98
26	0	NM		ESD 98
	15	32.0		ESD 98
	25	30.1		ESD 98
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	26.7		ESD 98
	15	23.3		ESD 98
	25	24.0		ESD 98
9	0	26.7		ESD 98
	15	25.0		ESD 98
	25	22.1		ESD 98
16	0	25.6		ESD 98
	15	20.5		ESD 98
	25	20.1		ESD 98
26	0	NM		ESD 98
	15	NM		ESD 98
	25	NM		ESD 98
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (weight %)</u>	<u>Temperature (°C)</u>			
0	0	27.7		ESD 98
	15	25.9		ESD 98
	25	26.8		ESD 98
9	0	28.8		ESD 98
	15	26.3		ESD 98
	25	24.5		ESD 98
16	0	28.9		ESD 98
	15	24.9		ESD 98
	25	21.9		ESD 98
26	0	NM		ESD 98
	15	NM		ESD 98
	25	NM		ESD 98

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
0	40	2		ESD 99
	60	3		ESD 99
	80	4		ESD 99
	100	7		ESD 99
	120	9		ESD 99
	140	12		ESD 99
	160	15		ESD 99
	180	18		ESD 99
	200	21		ESD 99
	250	28		ESD 99
	300	36		ESD 99
	350	45		ESD 99
	400	53		ESD 99
	450	62		ESD 99
	500	69		ESD 99
	550	76		ESD 99
	600	82		ESD 99
	650	88		ESD 99
	700	92		ESD 99
9	100	2		ESD 99
	120	4		ESD 99
	140	6		ESD 99
	160	9		ESD 99
	180	12		ESD 99
	200	15		ESD 99
	250	23		ESD 99
	300	32		ESD 99
	350	42		ESD 99
	400	50		ESD 99
	450	59		ESD 99
	500	68		ESD 99
	550	75		ESD 99
	600	82		ESD 99
	650	88		ESD 99
16	700	93		ESD 99
	140	1		ESD 99
	160	3		ESD 99
	180	5		ESD 99
	200	8		ESD 99
	250	16		ESD 99
	300	26		ESD 99

Mississippi Canyon Block 807

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
<u>Evaporation (weight %)</u>	<u>Boiling Point (°C)</u>			
16	350	36		ESD 99
	400	46		ESD 99
	450	56		ESD 99
	500	65		ESD 99
	550	73		ESD 99
	600	80		ESD 99
	650	87		ESD 99
	700	92		ESD 99
26	200	1		ESD 99
	250	6		ESD 99
	300	15		ESD 99
	350	27		ESD 99
	400	38		ESD 99
	450	49		ESD 99
	500	59		ESD 99
	550	69		ESD 99
	600	77		ESD 99
	650	84		ESD 99
	700	90		ESD 99

	Data	Notes	Reference ID
Origin: North Sea, UK			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
API Gravity	40.1		OGJ 99
Sulphur (weight %)	0.23		OGJ 99
Reid Vapour Pressure (kPa)	28		OGJ 99
Pour Point (°C)	-9		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
	<u>Temperature (°C)</u>		
	20	5	OGJ 99
	38	3	OGJ 99
Yield on Crude (volume %)			
	<u>Boiling Range (°C)</u>		
	C1-C4	2	OGJ 99
	Gasoline (C5-93)	12	OGJ 99
	Naphtha (93-149)	15	OGJ 99
	Kerosene (149-204)	9	OGJ 99
	Gas oil (204-343)	25	OGJ 99
	Residue (>343)	37	OGJ 99
Metals (ppm)			
	Nickel	2	OGJ 99
	Vanadium	2	OGJ 99

Mousse Mix (Petawawa)

	Data	Notes	Reference ID
This oil was used during the May 1993 airborne oil spill sensor test program carried out at Canadian Forces Base Petawawa. The program was sponsored by the Emergencies Science Division of Environment Canada and the Marine Spill Response Corporation, Washington, D.C.. Six aircraft from across North America participated in the program.			Brown 94
Mousse Mix is a 50/50 volume % mixture of Alberta Sweet Mixed Blend and Bunker C.			
API Gravity	25.6		ESD 93
Sulphur (weight %)	1.32		ESD 93
Flash Point (°C)	-1		ESD 93
Density (g/mL)			
	<u>Temperature (°C)</u>		
	0	0.9124	ESD 93
	15	0.9001	ESD 93
Pour Point (°C)	-12		ESD 93
Dynamic Viscosity (mPa·s or cP)			
	<u>Temperature (°C)</u>		
	0	122	ESD 93
	15	43	ESD 93
Hydrocarbon Groups (weight %)			
	Asphaltenes	6	ESD 93
	Waxes	7	ESD 93
Surface Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	0	22.6	ESD 93
	15	21.6	ESD 93
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	0	18.5	ESD 93
	15	15.8	ESD 93
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)			
	<u>Temperature (°C)</u>		
	0	19.6	ESD 93
	15	17.2	ESD 93

Mousse Mix (Petawawa)

	Data	Notes	Reference ID
Boiling Point Distribution (weight %)			
<u>Boiling Point (°C)</u>			
40	1		ESD 94
60	1		ESD 94
80	2		ESD 94
100	4		ESD 94
120	5		ESD 94
140	7		ESD 94
160	8		ESD 94
180	10		ESD 94
200	12		ESD 94
250	20		ESD 94
300	33		ESD 94
350	47		ESD 94
400	57		ESD 94
450	63		ESD 94
500	67		ESD 94
550	70		ESD 94
600	76		ESD 94
650	83		ESD 94
700	88		ESD 94

Mubarek

	Data	Notes	Reference ID
Origin: United Arab Emirates			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
API Gravity	37.0		OGJ 99
Sulphur (weight %)	0.62		OGJ 99
Reid Vapour Pressure (kPa)	33		OGJ 99
Pour Point (°C)	-12		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
	<u>Temperature (°C)</u>		
	38	3	OGJ 99
	50	3	OGJ 99
Yield on Crude (volume %)			
	<u>Boiling Range (°C)</u>		
	Gas	1	OGJ 99
	Light straight run (IBP-104)	13	OGJ 99
	Light naphtha (104-149)	9	OGJ 99
	Heavy naphtha (149-182)	7	OGJ 99
	Kerosene (182-260)	18	OGJ 99
	Light gas oil (260-371)	21	OGJ 99
	Residue (>371)	31	OGJ 99

		Data	Notes	Reference ID
Origin: United Arab Emirates				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity		40.5		OGJ 99
Sulphur (weight %)		0.78		OGJ 99
Reid Vapour Pressure (kPa)		24		OGJ 99
Density (g/mL)				
<u>Evaporation (volume %)</u>	<u>Temperature (°C)</u>			
0	0	0.8380		Mackay 82a
	5	0.8320		Mackay 82a
	10	0.8300		Mackay 82a
	15	0.8280		Mackay 82a
	20	0.8240		Mackay 82a
	25	0.8220		Mackay 82a
10	20	0.8420		Mackay 82a
20		0.8550		Mackay 82a
Pour Point (°C)				
<u>Evaporation (volume %)</u>				
0		-3		Mackay 82a
		-24		OGJ 99
10		0		Mackay 82a
20		15		Mackay 82a
Dynamic Viscosity (mPa·s or cP)				
<u>Evaporation (volume %)</u>	<u>Temperature (°C)</u>			
0	0	40		Mackay 82a
	5	22		Mackay 82a
	10	12		Mackay 82a
	15	7		Mackay 82a
	20	4		Mackay 82a
	25	4		Mackay 82a
Kinematic Viscosity (mm²/s or cSt)				
	<u>Temperature (°C)</u>			
	40	3		OGJ 99

Murban

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
<u>Evaporation (volume %)</u>				
0	Saturates	81		Mackay 82a
	Aromatics	17		Mackay 82a
	Resins	1		Mackay 82a
	Asphaltenes	1		Mackay 82a
	Waxes	6		Mackay 82a
10	Saturates	76		Mackay 82a
	Aromatics	18		Mackay 82a
	Resins	2		Mackay 82a
	Asphaltenes	4		Mackay 82a
	Waxes	7		Mackay 82a
20	Saturates	74		Mackay 82a
	Aromatics	19		Mackay 82a
	Resins	2		Mackay 82a
	Asphaltenes	4		Mackay 82a
	Waxes	7		Mackay 82a
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
<u>Evaporation (volume %)</u>	<u>Temperature (°C)</u>			
0	Room temperature	16.3		Mackay 82a
10		16.4		Mackay 82a
20		14.3		Mackay 82a
Yield on Crude (volume %)				
	<u>Boiling Range (°C)</u>			
	Naphtha (20-165)	27		OGJ 99
	Kerosene (150-220)	17		OGJ 99
	Diesel (220-350)	26		OGJ 99
	Residue (>350)	32		OGJ 99
Metals (ppm)				
	Nickel	0.7		OGJ 99
	Vanadium	< 0.1		OGJ 99
Aqueous Solubility (mg/L)				
	<u>Temperature (°C)</u>			
	Room temperature	29	(a)	Bobra 83
<i>(a) double-distilled</i>				
Acute Toxicity of Water Soluble Fraction (mg/L)				
	<u>Test Organism</u>			
48h LC50	Daphnia magna	7		Bobra 83

	Data	Notes	Reference ID
Origin: North Sea, UK			
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".			
API Gravity	38.0		OGJ 99
Sulphur (weight %)	0.27		OGJ 99
Reid Vapour Pressure (kPa)	62		OGJ 99
Pour Point (°C)	7		OGJ 99
Kinematic Viscosity (mm²/s or cSt)			
Temperature (°C)			
38	4		OGJ 99
Yield on Crude (volume %)			
Boiling Range (°C)			
C1-C4	3		OGJ 99
Naphtha (30-191)	31		OGJ 99
Kerosene (191-271)	14		OGJ 99
Heavy distillate (271-371)	21		OGJ 99
Gas oil (371-549)	21		OGJ 99
Residue (>549)	12		OGJ 99
Metals (ppm)			
Nickel	0.7		OGJ 99
Vanadium	3		OGJ 99