# Arabian Light

**Origin:** Saudi Arabia
**Synonyms:** Berri

Data from OGJ 99 were originally published in 1991 as part of a series entitled "Export Crudes for the '90s".

| | | | Reference ID |
|---|---|---|---|
| **API Gravity** | | | |
| | | 33.4 | OGJ 99 |
| | | 31.8 | ESD 92 |
| **Equation(s) for Predicting Evaporation** | | | |
| %Ev = (2.52 + 0.037T)ln(t) | | | |
| Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes) | | | |
| | | | ESD 96 |
| **Sulphur (weight %)** | | | |
| Evaporation | | | |
| (volume %) | | | |
| 0 | | 1.77 | OGJ 99 |
| | | 1.84 | ESD 93 |
| 12 | | 1.85 | |
| 24 | | 2.06 | |
| **Water Content (weight %)** | | | |
| Evaporation | | | |
| (volume %) | | | |
| 0 | | 0.1 | ESD 98 |
| 12 | | <0.1 | |
| 24 | | <0.1 | |
| **Flash Point (°C)** | | | |
| Evaporation | | | |
| (volume %) | | | |
| 0 | | -20 | ESD 92 |
| 12 | | 44 | |
| 24 | | 89 | |
| **Density (g/mL)** | | | |
| Evaporation | Temperature | | |
| (volume %) | (°C) | | |
| 0 | 0 | 0.8781 | ESD 92 |
| | 15 | 0.8658 | |
| | | 0.8581 | OGJ 99 |
| 12 | 0 | 0.9039 | ESD 92 |
| | 15 | 0.8921 | |
| 24 | 0 | 0.9225 | |
| | 15 | 0.9111 | |
| **Pour Point (°C)** | | | |
| Evaporation | | | |
| (volume %) | | | |
| 0 | | -53 | OGJ 99 |
| | | -28 | ESD 92 |
| 12 | | -13 | |
| 24 | | -12 | |
| **Dynamic Viscosity (mPa·s or cP)** | | | |
| Evaporation | Temperature | | |
| (volume %) | (°C) | | |
| 0 | 0 | 31 | ESD 92 |
| | 15 | 14 | |

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| **Dynamic Viscosity (mPa·s or cP)** | | | |
| Evaporation (volume %) | Temperature (°C) | | |
| 12 | 0 | 116 | ESD 92 |
| | 15 | 33 | |
| 24 | 0 | 406 | |
| | 15 | 94 | |
| **Kinematic Viscosity (mm²/s or cSt)** | | | |
| | Temperature (°C) | | |
| | 16 | 12 | OGJ 99 |
| **Emulsion Formation** | | | |
| Evaporation (volume %) | | | |
| 0 | Visual stability | stable | ESD 98 |
| | Viscosity (mPa·s) | 23000 | |
| | Complex modulus (Pa) | 470 | |
| | Water content (wt %) | 87 | |
| 12 | Visual stability | stable | |
| | Viscosity (mPa·s) | 46000 | |
| | Complex modulus (Pa) | 400 | |
| | Water content (wt %) | 89 | |
| 24 | Visual stability | stable | |
| | Viscosity (mPa·s) | 48000 | |
| | Complex modulus (Pa) | 510 | |
| | Water content (wt %) | 85 | |
| **Chemical Dispersibility (volume %)** | | | |
| Evaporation (volume %) | | | |
| 0 | Corexit 9500 | 21 | ESD 98 |
| | Corexit 9527 | 25 | EETD 89 |
| | Dasic LTS | 25 | |
| | Enersperse 700 | 10 | |
| 12 | Corexit 9500 | 17 | ESD 98 |
| 24 | | 14 | |
| **Hydrocarbon Groups (weight %)** | | | |
| Evaporation (volume %) | | | |
| 0 | Saturates | 51 | ESD 95 |
| | Aromatics | 39 | |
| | Resins | 6 | |
| | Asphaltenes | 3 | |
| | Waxes | 5 | ESD 98 |
| 12 | Saturates | 49 | ESD 96 |
| | Aromatics | 37 | |
| | Resins | 8 | |
| | Asphaltenes | 5 | |
| | Waxes | 5 | ESD 97 |
| 24 | Saturates | 46 | ESD 96 |
| | Aromatics | 39 | |
| | Resins | 10 | |
| | Asphaltenes | 6 | |
| | Waxes | 5 | ESD 98 |

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| **Adhesion (g/m²)** | | | | |
| Evaporation (volume %) | | | | |
| 0 | | 14 | SD = 2 | ESD 96 |
| 12 | | 18 | SD = 2 | |
| 24 | | 21 | SD = 2 | |
| **Volatile Organic Compounds (ppm)** | | | | |
| Evaporation (volume %) | | | | |
| 0 | Benzene | 680 | | ESD 94 |
| | Toluene | 1980 | | |
| | Ethylbenzene | 1560 | | |
| | Xylenes | 3750 | | |
| | C3-benzenes | 7450 | | |
| | Total BTEX | 7970 | | |
| | Total VOCs | 15420 | | |
| 12 | Benzene | 140 | | |
| | Toluene | 1550 | | |
| | Ethylbenzene | 1270 | | |
| | Xylenes | 3050 | | |
| | C3-benzenes | 6710 | | |
| | Total BTEX | 6010 | | |
| | Total VOCs | 12720 | | |
| 24 | Benzene | 0 | | |
| | Toluene | 50 | | |
| | Ethylbenzene | 0 | | |
| | Xylenes | 90 | | |
| | C3-benzenes | 2430 | | |
| | Total BTEX | 140 | | |
| | Total VOCs | 2570 | | |
| **Surface Tension (mN/m or dynes/cm)** | | | | |
| Evaporation (volume %) | Temperature (°C) | | | |
| 0 | 0 | 27.1 | | ESD 92 |
| | 15 | 26.6 | | |
| 12 | 0 | 28.9 | | |
| | 15 | 28.0 | | |
| 24 | 0 | 30.2 | | |
| | 15 | 28.5 | | |
| **Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)** | | | | |
| Evaporation (volume %) | Temperature (°C) | | | |
| 0 | 0 | 16.8 | | ESD 92 |
| | 15 | 20.4 | | |
| 12 | 0 | 14.8 | | |
| | 15 | 17.3 | | |
| 24 | 0 | 19.3 | | |
| | 15 | 20.2 | | |
| **Oil/Fresh Water Interfacial Tension (mN/m or** | | | | |
| Evaporation (volume %) | Temperature (°C) | | | |
| 0 | 0 | 19.8 | | ESD 92 |
| | 15 | 22.6 | | |
| 12 | 0 | 15.1 | | |

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**Oil/Fresh Water Interfacial Tension (mN/m or**

| Evaporation (volume %) | Temperature (°C) | | Reference ID |
|---|---|---|---|
| 12 | 15 | 17.2 | ESD 92 |
| 24 | 0 | 29.0 | |
| | 15 | 21.9 | |

**Boiling Point Distribution (weight %)**

| Evaporation (volume %) | Boiling Point (°C) | Weight % | |
|---|---|---|---|
| 0 | 40 | 2 | ESD 94 |
| | 60 | 2 | |
| | 80 | 4 | |
| | 100 | 7 | |
| | 120 | 9 | |
| | 140 | 12 | |
| | 160 | 15 | |
| | 180 | 19 | |
| | 200 | 22 | |
| | 250 | 31 | |
| | 300 | 40 | |
| | 350 | 49 | |
| | 400 | 57 | |
| | 450 | 66 | |
| | 500 | 73 | |
| | 550 | 79 | |
| | 600 | 85 | |
| | 650 | 89 | |
| | 700 | 92 | |
| 12 | 100 | 1 | ESD 96 |
| | 120 | 2 | |
| | 140 | 4 | |
| | 160 | 7 | |
| | 180 | 11 | |
| | 200 | 15 | |
| | 250 | 25 | |
| | 300 | 35 | |
| | 350 | 47 | |
| | 400 | 57 | |
| | 450 | 67 | |
| | 500 | 75 | |
| | 550 | 83 | |
| | 600 | 89 | |
| | 650 | 94 | |
| | 700 | 98 | |
| 24 | 180 | 2 | |
| | 200 | 5 | |
| | 250 | 14 | |
| | 300 | 26 | |
| | 350 | 38 | |
| | 400 | 49 | |
| | 450 | 59 | |
| | 500 | 68 | |
| | 550 | 76 | |
| | 600 | 83 | |
| | 650 | 88 | |
| | 700 | 92 | |

# Arabian Light

| | | | Reference ID |
|---|---|---|---|
| **Boiling Point Distribution (°C)** | | | |
| Evaporation (volume %) | Weight % | Boiling Point (°C) | |
| 0 | 5 | | ESD 94 |
| | 10 | | |
| | 15 | | |
| | 20 | | |
| | 25 | | |
| | 30 | | |
| | 35 | | |
| | 40 | | |
| | 45 | | |
| | 50 | | |
| | 55 | | |
| | 60 | | |
| | 65 | | |
| | 70 | | |
| | 75 | | |
| | 80 | | |
| | 85 | | |
| | 90 | | |
| 12 | 5 | | ESD 96 |
| | 10 | | |
| | 15 | | |
| | 20 | | |
| | 25 | | |
| | 30 | | |
| | 35 | | |
| | 40 | | |
| | 45 | | |
| | 50 | | |
| | 55 | | |
| | 60 | | |
| | 65 | | |
| | 70 | | |
| | 75 | | |
| | 80 | | |
| | 85 | | |
| | 90 | | |
| | 95 | | |
| 24 | 5 | | |
| | 10 | | |
| | 15 | | |
| | 20 | | |
| | 25 | | |
| | 30 | | |
| | 35 | | |
| | 40 | | |
| | 45 | | |
| | 50 | | |
| | 55 | | |
| | 60 | | |
| | 65 | | |
| | 70 | | |
| | 75 | | |
| | 80 | | |

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| | | | | Reference ID |
|---|---|---|---|---|
| **Boiling Point Distribution (°C)** | | | | |
| Evaporation (volume %) | Weight % | Boiling Point (°C) | | |
| 24 | 85 | | | ESD 96 |
| | 90 | | | |
| **Yield on Crude (volume %)** | | | | |
| | Boiling Range (°C) | | | |
| | 20-175 | 23 | | OGJ 99 |
| | 175-295 | 23 | | |
| | 295-343 | 8 | | |
| | 343-565 | 30 | | |
| | 565-816 | 15 | | |
| **Metals (ppm)** | | | | |
| Evaporation (volume %) | | | | |
| 0 | Barium | <0.3 | | Cao 92 |
| | Chromium | <1.5 | | |
| | Copper | 1.6 | | |
| | Iron | <3 | | |
| | Lead | <3 | | |
| | Magnesium | 5.6 | | |
| | Molybdenum | 0.9 | | |
| | Nickel | 2.5 | | |
| | Titanium | <0.6 | | |
| | Vanadium | 16.0 | | |
| | Zinc | <0.6 | | |
| 24 | Aluminum | <5 | | |
| | Barium | 0.4 | | |
| | Cadmium | <0.5 | | |
| | Calcium | 34.9 | | |
| | Chromium | <1.5 | | |
| | Cobalt | <1 | | |
| | Copper | 2.4 | | |
| | Iron | 6.3 | | |
| | Lead | 3.9 | | |
| | Magnesium | 2.7 | | |
| | Manganese | <0.3 | | |
| | Mercury | <15 | | |
| | Molybdenum | <0.6 | | |
| | Nickel | 3.3 | | |
| | Selenium | <15 | | |
| | Strontium | <0.2 | | |
| | Tin | <15 | | |
| | Titanium | <0.6 | | |
| | Vanadium | 19.6 | | |
| | Zinc | 5.1 | | |
| **Other Elements (weight %)** | | | | |
| | Nitrogen | 0 | | OGJ 99 |
| **Aqueous Solubility (mg/L)** | | | | |
| | Room temperature | 19 | (a) | ESD 91 |

(a) fresh water

# Arabian Light

**Acute Toxicity of Water Soluble Fraction (mg/L)**

| | Test Organism | | | Reference ID |
|---|---|---|---|---|
| 48h LC50 | Daphnia magna | 11 | (a) | Harris 94 |

(a) results based on GC headspace analysis