

selling more base oils  
to the market than any other  
company on earth

aramco base oils

aramco base oils  
product catalog

**aramco base oils**  
your complete source  
of products to propel  
your business further

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## introducing aramco base oils



**Luberef** supplies base oils customers operating across the Middle East, East Africa, India and Pakistan. The strategically advantageous location of Luberef's refineries in Jeddah and Yanbu', in the Kingdom of Saudi Arabia, is combined with a consistent and reliable high quality supply of base oil, and an optimized grade mix to provide supply chain efficiencies to Luberef customers. Luberef's total capacity is 24,300 barrels per day (1.2 million tons per year).

For over 80 years, Saudi Aramco has been a reliable, trusted supplier of oil and gas to our customers across the world.

Through a series of joint ventures, we have been a major supplier of premium quality base oils around the world for over 40 years. Under the trusted company names of Luberef, Motiva, and S-OIL, we have collaborated with our customers to navigate market change, while delivering to them base oil solutions that meet their needs.

### MOTIVA

**Motiva** Base Oils are recognized for their quality and are key components in a broad spectrum of lubricants – including automotive, industrial, and functional fluid applications. Motiva's Port Arthur Refinery is the site of the largest base oil plant in North America, operating three lube hydroprocessing units that use Motiva-patented unit designs, to upgrade heavy gas oils into high quality premium base oils. With a world-class sales and supply logistics team, Motiva will consistently fulfill your Group II and Group III needs in the Americas and around the world. Motiva's total capacity is 40,300 barrels per day (2.0 million tons per year).



**S-OIL** is one of the world's top base oil producers, leading in South Korea since S-OIL's foundation in 1976 as the first local lube base oil refinery located in Ulsan. S-OIL's global presence has been successfully expanded into not only Asia, but also Europe and North America, by utilizing its full range of product portfolio from Group I to Group III, with a daily production capacity of 44,700 barrels per day (2.2 million tons per year).

## three new brand families for the products you trust

Aramco Base Oils is proud to present its high-performance, premium-quality base oils portfolio. Our broad portfolio of base oils will help you choose the right solution for whatever challenge you and your customers face so together you can innovate.

Aramco Base Oils is a new brand family, for the products you know, from the global name you trust.

### aramcoDURA®

#### API Group I

aramcoDURA API Group I base oils are used in a wide range of applications, including: passenger car and heavy duty engine oils, gear oils, and transmission fluids, as well as in industrial applications such as hydraulic oils, turbine oils, compressor oils, and marine oils.

- Consistency in the quality of base oils
- High quality brightstock for marine, driveline, and heavy viscosity applications

### aramcoPRIMA®

#### API Group II

aramcoPRIMA API Group II base oils give you the power to formulate the majority of automotive and industrial lubricating oils for heavy duty diesel engine oils, as well as driveline, industrial hydraulic, and turbine oils.

- Provide optimized automotive engine oil formulations, ranging from 5W-20 to 20W-50
- Wide performance and viscosity grade coverage for North & South American/Asian/Middle East/European automotive engine oils

### aramcoULTRA®

#### API Group III

aramcoULTRA API Group III base oils are used in applications that require high performance and efficiency, such as high performance engine oils, automatic/manual transmission fluids, and long-life industrial fluids.

# aramcoDURA<sup>®</sup>

aramcoDURA 60  
 aramcoDURA 150  
 aramcoDURA 500  
 aramcoDURA 600  
 aramcoDURA 150BS  
 aramcoDURA BS150

aramcoDURA API Group I base oils are used in a wide range of applications, including: passenger car and heavy duty engine oils, gear oils, and transmission fluids, as well as in industrial applications such as hydraulic oils, turbine oils, compressor oils, and marine oils.

- Consistency in the quality of base oils
- High quality brightstock for marine, driveline, and heavy viscosity applications

aramcoDURA <sup>®</sup>	60	150	500
API Base Oil Category	Group I		Group I

Properties	Method	Typical	Typical	Typical
Appearance	Visual	C & B	C & B	C & B
Kinematic Viscosity @ 40°C, cSt	D 445	7.92	28 - 31	91 - 101
Kinematic Viscosity @ 100°C, cSt	D 445	2.19	Report	Report
Viscosity Index	D 2270	71	101	97
Sulfur Content, ppm	D 5453	<10	1.0 <sup>‡</sup>	1.3 <sup>‡</sup>
Pour Point, °C	D 5950	-20	-12*	-6*
Density @ 15.6 °C, kg/L	D 4052	0.8751	Report	Report
Color, ASTM	D 1500	L 0.5	1.5	2.5
Flash Point, COC, °C	D 92	149	210	227
Flash Point, PMCC, °C	D 93		200+	210+
Furfural Content, ppm	M - 1414		5	5
Copper Strip Corrosion, 100°C, 3 hrs	D 130	1b	1a	1a
Conradson Carbon Residue, wt%	D 4530	<0.01	0.1	0.1
Neutralization No., mgKOH/g	D 974	<0.01	0.05	0.05
Ash, wt%	D 482		0.01	0.01
Manufacturing Site		Ulsan	Yanbu	Yanbu

Notes: \* - D 97 | ‡ - D 2622

aramcoDURA®		600	150BS	BS150
API Base Oil Category		Group I	Group I	Group I
Properties	Method	Typical	Typical	Typical
Appearance	Visual	C & B	C & B	C & B
Kinematic Viscosity @ 40°C, cSt	D 445	117	488.6	Report
Kinematic Viscosity @ 100°C, cSt	D 445	12.49	31.85	31.32
Viscosity Index	D 2270	98	96	95
Sulfur Content, ppm	D 5453	<100	<100	1.3 <sup>‡</sup>
Pour Point, °C	D 5950	-14	-14	-6*
Density @ 15.6 °C, kg/L	D 4052	0.8791	0.8929	0.894
Color, ASTM	D 1500	L 0.5	L 1.0	4.0
Flash Point, COC, °C	D 92	259	316	282
Flash Point, PMCC, °C	D 93			232
Furfural Content, ppm	M - 1414			5
Copper Strip Corrosion, 100°C, 3 hrs	D 130	1b	1b	1a
Conradson Carbon Residue, wt%	D 4530	0.01	0.2	0.7
Total Acid Number, mgKOH/g	D 974	<0.01	<0.01	0.05
Manufacturing Site		Ulsan	Ulsan	Yanbu

Notes: \* - D 97 | ‡ - D 2622

# aramcoPRIMA®

aramcoPRIMA® 100  
 aramcoPRIMA® 110  
 aramcoPRIMA® 150  
 aramcoPRIMA® 220  
 aramcoPRIMA® 230  
 aramcoPRIMA® 500  
 aramcoPRIMA® 600  
 aramcoPRIMA® 100S  
 aramcoPRIMA® 150S  
 aramcoPRIMA® 500S  
 aramcoPRIMA® DFF  
 aramcoPRIMA® 60  
 aramcoPRIMA® 70

These grades of aramcoPRIMA are not classified as API Group II. They are commonly used for non engine oil applications.

aramcoPRIMA API Group II base oils give you the power to formulate the majority of automotive and industrial lubricating oils for heavy duty diesel engine oils, as well as driveline, industrial hydraulic, and turbine oils.

- Provide optimized automotive engine oil formulations, ranging from 5W-20 to 20W-50
- Wide performance and viscosity grade coverage for North & South American/Asian/Middle East/European automotive engine oils



Properties	Method	Typical	Typical	Typical	Typical
Appearance	Visual	C&B	C&B	C&B	C&B
Kinematic Viscosity @ 40°C, cSt	D 445	3.7	8.74	10.6	11.4
Kinematic Viscosity @ 100°C, cSt	D 445		2.32	2.6	2.9
Viscosity Index	D 2270		67		83
Saturates, wt%	D 2007		>99		
Sulfur, wt ppm	D 5453	1 <sup>‡</sup>	<10	<10 <sup>‡</sup>	5 <sup>‡</sup>
Distillation	D 86				
IBP, °C		255	279		
FBP, °C		327	367		
Pour Point, °C	D 5950	-27 <sup>*</sup>	< -40	-35	-30 <sup>*</sup>
Density @ 15°C, Kg/L	D 4052		0.8700		
Saybolt Color	D 156	+30	+30	+30	
Color ASTM	D 1500		L 0.5	L0.5	0.5
Flash Point COC, °C	D 92	100	≥150	≥170	
Copper Corrosion 100°C 3hrs	D 130		1b		
Total Acid Number, mgKOH/g	D 974		<0.01		
Aromatic, wt%	D 2007	0.5	<1		1
Aniline Point, °C	D 611	91	87.2		
Manufacturing Site		Yanbu	Ulsan	Port Arthur	Yanbu

Notes: \* - D 97 | ‡ - D 2622

API Base Oil Category

Properties	Method	Typical	Typical	Typical
Appearance	Visual			
Kinematic Viscosity @ 40°C, cSt	D 445	20.94	30.47	95.86
Kinematic Viscosity @ 100°C, cSt	D 445	4.236	5.189	11.24
Viscosity Index	D 2270	107	101	96
Saturates, wt%	D 2007	>90	>90	>90
Sulfur, wt ppm	D 5453	<10	<100	<100
Pour Point, °C	D 5950	-15	-12	-14
Density @ 15°C, Kg/L	D 4052	0.854	0.863	0.8731
Saybolt Color	D 156			
Color ASTM	D 1500	L 0.5	L 0.5	L 0.5
Flash Point COC, °C	D 92	210	212	258
Copper Corrosion 100°C 3hrs	D 130	1b	1b	1b
Total Acid Number, mgKOH/g	D 974	<0.01	<0.01	<0.01
Aromatics, wt%	D 2007	<2	<2	<2
Manufacturing Site		Ulsan	Ulsan	Ulsan

API Base Oil Category

		100	110	150
		Group II	Group II	Group II
Properties	Method	Typical	Typical	Typical
Appearance	Visual	C&B	C&B	C&B
Kinematic Viscosity @ 40°C, cSt	D 445	20.5	23.3	29.7
Kinematic Viscosity @ 100°C, cSt	D 445	4.17	4.6	5.2
Viscosity Index	D 2270	105	113	105
Saturates, wt%	D 2007		98	99
Sulfur, wt ppm	D2622	<10	10	<10 <sup>‡</sup>
Noack Volatility, wt% (Procedure B)	D 5800	23.0	14.0	15.8
CCS Viscosity @ -20°C, mPa-s	D 5293		900	1,620
CCS Viscosity @ -25°C, mPa-s	D 5293	1,238	1,500	2,760
Pour Point, °C	D 5950	-15	-18*	-18
Brookfield @ -40°C	D 2983	12,500		
Density @ 15°C, Kg/L	D 4052	0.8495	0.8510	0.8590
Saybolt Color	D 156		+30	+30
Color ASTM	D 1500	L 0.5	L 0.5	L 0.5
Flash Point COC, °C	D 92	207	224	218
Copper Corrosion 100°C 3hrs	D 130		1a	1b
Total Acid Number, mgKOH/g	D 974		0.01	< 0.01
Aromatics, wt%	D 2007		1	<1
Manufacturing Site		Port Arthur	Yanbu	Ulsan

220	230	500	500	600
Group II	Group II	Group II	Group II	Group II
Typical	Typical	Typical	Typical	Typical
C&B	C&B	C&B	C&B	C&B
42.3	43.5	84.5	96.4	109.4
6.5	6.65	10.75	11.3	12.0
104	105	112	104	98
	98.5	98	99	
<10	2	1	2 <sup>‡</sup>	<25
11.0	8	2.0	6.9	2.0
3,080	3,100	8,300	14,550	
	5,500	16,000	26,000	
-15	-18*	-16*	-18	-15
0.8640	0.8625	0.8620	0.8720	0.8741
	+30		+30	
L 0.5	L 0.5	L0.5	L0.5	L 0.5
226	230	250	240	263
	1b	1b	1b	
	0.01	0.02	< 0.01	
	1.5	2	< 1	
Port Arthur	Yanbu	Yanbu	Ulsan	Port Arthur

Notes: \* - D 97 | ‡ - D 5453

# aramcoULTRA<sup>®</sup>

aramcoULTRA<sup>®</sup> 4  
 aramcoULTRA<sup>®</sup> 6  
 aramcoULTRA<sup>®</sup> 8

aramcoULTRA API Group III base oils are used in applications that require high performance and efficiency, such as high performance engine oils, automatic/manual transmission fluids, and long-life industrial fluids.

aramcoULTRA<sup>®</sup> 2  
 aramcoULTRA<sup>®</sup> 3

These grades of aramcoULTRA are not classified as API Group III.

## aramcoULTRA<sup>®</sup>

2

3

Properties	Method	Typical	Typical
Appearance	Visual	C&B	C&B
Kinematic Viscosity @ 40°C, cSt	D 445	7.62	14.0
Kinematic Viscosity @ 100°C, cSt	D 445	2.25	3.38
Viscosity Index	D 2270	103	115
Saturates, wt%	D 2007	>99	>99
Sulfur, wt ppm	D 5453	1	1
Pour Point, °C	D 5950	-36	-27
Density @ 15°C, Kg/L	D 4052	0.8300	0.8323
Saybolt Color	D 156	+30	+30
Color ASTM	D 1500	L0.5	L0.5
Flash Point COC, °C	D 92	158	202
Copper Corrosion 100°C 3hrs	D 130	1b	1b
Total Acid Number, mgKOH/g	D 974	<0.01	<0.01
Aromatics, wt%	D 2007	<1	<1
Manufacturing Site		Ulsan	Ulsan



aramco**ULTRA**<sup>®</sup>

API Base Oil Category

4

Group III

4

Group III

6

Group III

6

Group III

8

Group III

Properties	Method	Typical	Typical
Appearance	Visual	C&B	C&B
Kinematic Viscosity @ 40°C, cSt	D 445	19.7	20.4
Kinematic Viscosity @ 100°C, cSt	D 445	4.27	4.40
Viscosity Index	D 2270	124	126
Saturates, wt%	D 2007	>99	
Sulfur, wt ppm	D 5453	1	<10 <sup>‡</sup>
Noack Volatility, wt% (Procedure B)	D 5800	14.7	14.4
CCS Viscosity @ -30°C, mPa-s	D 5293	1,500	1,500
Pour Point, °C	D 5950	-20	-20
Density @ 15°C, Kg/L	D 4052	0.8350	0.8360
Saybolt Color	D 156	+30	
Color ASTM	D 1500	L0.5	L0.5
Flash Point COC, °C	D 92	220	220
Copper Corrosion 100°C 3hrs	D 130	1b	
Total Acid Number, mgKOH/g	D 974	L0.01	
Aromatics, wt%	D 2007	<1	<1
Manufacturing Site		Ulsan	Port Arthur

Typical	Typical	Typical
C&B	C&B	C&B
32.54	32.4	41.10
6.04	5.9	7.1
134	125	134
>99		>99
<1.0	<10 <sup>‡</sup>	<1.0
6.4	7.6	4.0
3,850	4,050	6,300
-16	-15	-14
0.8398	0.8400	0.8425
+30		+30
L0.5	L0.5	L0.5
240	230	250
1b		1b
L0.01		L0.01
<1		<1
Ulsan	Port Arthur	Ulsan

Notes: ‡ - D 2622

# meeting API and ACEA requirements

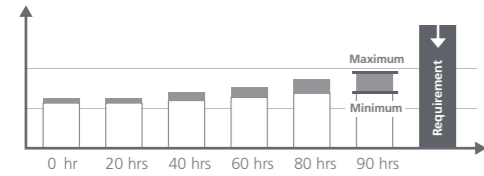
## Interchangeable and linked group II base oils

In accordance with API and ACEA protocols, Saudi Aramco has successfully completed test programs that demonstrated the interchangeability and linkage between Group II base oils from our global manufacturing sites. The extensive testing programs covered API SN/GF-5, API CJ-4 and ACEA A3/B4 automotive engine oils together with demonstration in industrial and gear oils applications. Engine tests to meet ACEA E7 and E9 are currently underway with completion expected Q1 2019.

### Automotive Engine Tests

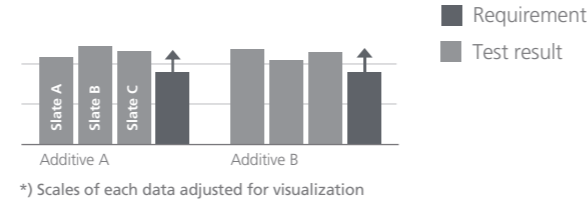
#### Sequence IIH Engine Test (API SN/GF-5)

Viscosity increase (cSt@40°C)



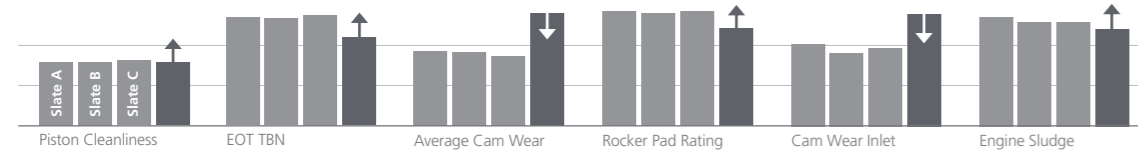
#### Sequence IIH Engine Test (API CJ-4)

Weighted Piston Deposit (merit rating)



\*) Scales of each data adjusted for visualization

### European Engine Test (ACEA A3/B4)



#### Volkswagen TDi (CEC L-78-T-99)

4 cyl., 1.9L, turbocharged, direct injection

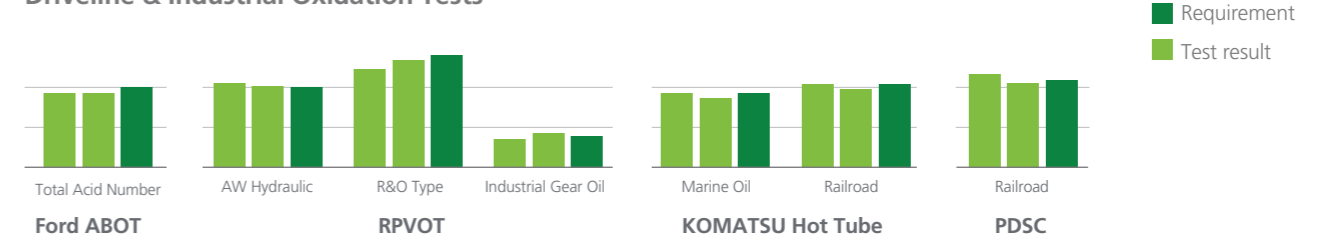
#### Peugeot TU3M (CEC L-38-A-94)

OHC, 4 cyl., gasoline, 1,360cc

#### Mercedes Benz OM646LA (CEC L-099-08)

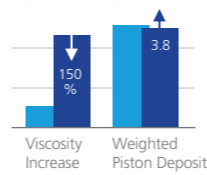
4 cyl., 2.2L, VTG turbocharged, direct injection

### Driveline & Industrial Oxidation Tests

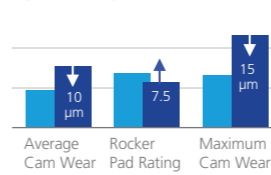


The Group II base oils show satisfactory performance in various API and ACEA engine tests across a number of metrics including oxidation, anti-wear, piston cleanliness, and sludge formation resistance using suitable additive technologies.

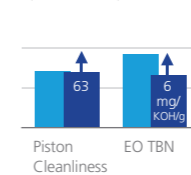
#### Sequence IIH (API SN/GF-5)



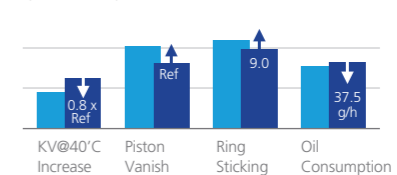
#### Peugeot TU3M (ACEA A3/B4)



#### Volkswagen TDi (ACEA A3/B4)



#### Peugeot TU5JP-L4 (ACEA A3/B4)



# contact us

“We leverage our 14% base oil market share, tremendous base oil industry experience spanning several decades, globally recognized base oil brands, and technical excellence to meet the needs of our customers.

Our consistent product quality and reliability of supply from three of the most advanced and complex manufacturing sites across the globe ensure that we will always be a dependable choice of base oils.”

## Said Al-Hadrami

Vice President

Saudi Aramco International Operations

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your customers will  
know that you can offer  
them consistency, reliability,  
and high quality, no matter  
what they need or where  
they are in the world

