Shell Australia Lubricants Product Data Guide

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Consumer

V.1

Shell Helix Ultra Racing

10W-60 Fully synthetic motor oil.
Shell's unique formulation for racing and modified engines.

Founded on Shell technology and Formula 1 racetrack experience over many years, Shell Helix Ultra Racing 10W-60 has been tried, tested and proven even under the most extreme driving conditions.
Shell Helix Ultra Racing has been formulated with a higher viscosity, which provides better bearing protection under extreme performance and racing conditions compared to a conventional mineral oil.

Performance Features

Specially designed for racing and modified vehicles
- Greater bearing and wear protection under extreme performance and racing conditions.

Shell's ultimate active cleansing technology
- Five times as effective at removing sludge from dirty engines than a normal mineral oil.

Long-term oxidation stability
- Up to 37% more protection than other fully synthetic leading products tested.

Low viscosity, rapid oil flow and low friction
- Improved fuel efficiency.

High sheer stability
- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils
- Reduces oil volatility and therefore oil consumption. The need for oil top-up is reduced.

Minimises vibration and engine noise
- Smoother, quieter drive.

Extremely low chlorine content
- Meets environmental requirements

High Shear stability
- To maintain viscosity and stay in grade.

Catalyst and turbo
- Exceeds industry standards

Based on Formula 1 technology
- Proved at racetracks throughout the world.

Applications

- Suitable for fuel-injected petrol engines with emissions control technology and catalytic converters operating in all driving conditions.
- Also suitable for turbo-charged and inter-cooled direct injection high performance diesel engines fitted with exhaust gas recirculation.

Specifications, Approvals and Recommendations

API	SM/CF
ACEA	A3/B3/B4
Meets the requirements of:	
Ferrari approved	
VW	501.1 505.00
Mercedes Benz	229.1
Fiat	9.55535 H3
BMW	M

Typical Physical Characteristics

Shell Helix Ultra Racing			10W-60
Kinematic Viscosity	@ 40°C	cSt	151
	@ 100°C	cSt	22.8
Density	@ 15°C	kg/l	0.85
Flash Point		°C	215
Pour Point		°C	–39
HTHS Viscosity	@ 150°C	°C	5.42

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix Ultra Extra

5W-30 Fully synthetic motor oil. Advanced technology for modern engines.

Shell Helix Ultra Extra 5W-30 is a premium-grade, fully synthetic engine oil scientifically formulated to give you Shell's maximum engine clean up properties using special cleansing agents that actively help to continuously lock away harmful dirt and deposits for the respective vehicle specifications outlined below. Shell Helix Ultra Extra is a fully synthetic lubricant giving Shell's ultimate engine and exhaust after treatment protection including diesel particulate filters for performance motoring and is approved by leading car manufacturers such as Mercedes Benz, VW, Porsche and BMW in support of increased oil change intervals and exhaust after treatment device protection.

Performance Features

Low SAPS oil for emission system protection
- Provides long life for exhaust after treatment devices.

Shell's ultimate active cleansing technology
- Five times as effective at removing sludge from dirty engines than a normal mineral oil.

Long-term oxidation stability
- Up to 37% more protection than other fully synthetic leading brands tested.

Low viscosity, rapid oil flow and low friction
- Improved fuel efficiency and easier cold starting.

High shear stability
- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils
- Reduces oil volatility and therefore oil consumption. The need for oil top-up is therefore reduced.

Minimises vibration and engine noise
- Smoother, quieter drive.

Applications

- Suitable for fuel-injected petrol engines fitted with emissions control technology and catalytic converters.
- Also suitable for tubo-charged and inter-cooled direct injection high performance diesel engines fitted with exhaust gas recirculation and particulate filters.

Specifications, Approvals and Recommendations

Shell Helix Ultra Extra 5W-30 exceeds the requirements of most major car manufacturers and the following industry standards:

ACEA	A3/B4/C2/C3
BMW	LongLife-04
Mercedes Benz	229.51, 229.31
VW	504.00/507.00
Chrysler	MS-1106
Fiat	9.55535 S1
	meets requirements
Porsche	C30
PSA	B71 2290
	meets requirements

Typical Physical Characteristics

Shell Helix Ultra Extra			**5W-30**
Kinematic Viscosity @ 40°C	cSt	ASTM D 445	67.9
@ 100°C	cSt	ASTM D 445	11.8
Viscosity Index		ISO 2909	170
Flash Point	°C	ASTM D 4502	0.848
Pour Point	°C	ISO 3016	–39

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix Ultra

5W-40 Fully synthetic motor oil.
Cleans and protects for maximum performance.

Shell Helix Ultra is Shell's premium, fully synthetic motor oil scientifically formulated with Shell's ultimate active cleansing technology. It works harder to protect than conventional motor oils by continuously helping to prevent dirt and sludge from building up. For better responsiveness and improved performance, enabling your engine to operate at its full potential right up to the next scheduled oil change. Shell Helix Ultra helps to minimise engine noise, and conditions and protects engines from the extra stresses of driving in modern start-stop traffic conditions. Shell Helix Ultra is for performance motoring, and it rejuvenates and refreshes your engine. Shell Helix Ultra is the only motor oil recommended by Ferrari.

Performance Features

Shell's ultimate active cleansing technology

- Provides Shell's best engine protection by continuously helping to remove deposits from dirty engines.

Long-term oxidation stability

- Up to 37% more protection than other fully synthetic leading products tested.

Low viscosity, rapid oil flow and low friction

- Improved fuel efficiency and easier cold starting.

High shear stability

- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils

- Helps reduce oil volatility and therefore oil consumption. The need for oil top-up is reduced.

Minimises vibration and engine noise

- Smoother, quieter drive.

Applications

- Shell Helix Ultra is suitable for fuel-injected petrol engines fitted with emissions control technology and catalytic converters operating in all driving conditions.
- Also suitable for turbo-charged and inter-cooled direct injection high performance diesel engines fitted with blow-by recirculation and exhaust gas recirculation.

Specifications, Approvals and Recommendations

API Service Classification	SM/CF
ACEA	A3/B3/B4
Volkswagon	502.00, 505.00 503.01
Mercedes Benz	229.5
BMW	LL-01
Fiat	9.55535 Z2 RN 0700 and 0710
Other approvals	Porsche and Ferrari

Typical Physical Characteristics

Shell Helix Ultra			**5W-40**
Kinematic Viscosity	@ 40°C	cSt	74.4
	@ 100°C	cSt	13.1
Density	@ 15°C	kg/l	0.84
Flash Point		°C	215
Pour Point		°C	–39
HTHS Viscosity	@ 150°C		3.68

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX7

10W-40 Synthetic technology motor oil.
Cleans and protects for extra responsiveness.

Shell Helix HX7 has been formulated with special active cleansing technology. It works harder to protect than conventional motor oils by continuously helping to prevent dirt and sludge from building up. In addition to offering superior engine protection, Shell Helix HX7 helps to clean and protect for more responsiveness.

Performance Features

Special active cleansing technology

- Works harder to protect than conventional mineral oils by continuously helping to remove deposits from dirty engines.
- It is twice as effective as normal mineral oil at removing sludge from dirty engines.

Enhanced oxidation stability

- Up to 19% more protection than other synthetic technology leading brands tested.

Low viscosity, rapid oil flow and low friction

- Improved fuel efficiency and easier cold starting.

High shear stability

- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils

- Helps reduce oil volatility and therefore oil consumption. The need for oil top-up is reduced.

Minimises vibration and engine noise

- Smoother, quieter drive.

Applications

- Suitable or fuel-injected petrol engines fitted with catalytic converters.
- Also suitable for turbo-charged and intercooled direct injection diesel engines.

Specifications, Approvals and Recommendations

Shell Helix HX7 is suitable for use where the following specifications are called for:

API Service Classification	SM/CF
ACEA	A3/B4
JASO	SG+
Mercedes Benz	229.1
VW	502.00/ 505.00
Fiat	9.55535 G2
Renault	RN 0700

Typical Physical Characteristics

Shell Helix HX7			10W-40
Kinematic Viscosity	@ 40°C	cSt	92.1
	@ 100°C	cSt	14.4
Density	@ 15°C	kg/l	0.88
Flash Point		°C	220
Pour Point		°C	–39

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX7 K

15W-50 Synthetic technology motor oil.
Extra protection for engines with more than 100,000km.

Shell Helix HX7 K is thicker than ordinary oils and contains extra anti-wear agents. These help to reduce oil leaks and slow down engine wear to help protect and prolong the life of the engine.

Performance Features

Thicker oil that contains extra anti-wear agents
- Helps to reduce wear and oil consumption, and maintain cylinder compression.

Special active cleansing technology
- Twice as effective at removing sludge from dirty engines than a normal mineral oil.

Enhanced oxidation stability
- Up to 19% more protection than other synthetic technology leading brands tested.

Low viscosity, rapid oil flow and low friction
- Improved fuel efficiency.

High shear stability
- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils
- Helps reduce the oil volatility and therefore the oil consumption. The need for oil top-up is reduced.

Minimises vibration and engine noise
- Smoother, quieter drive.

Applications

- Suitable for fuel-injected petrol engines with emissions control technology and catalytic converters.
- Also suitable for turbo-charged and inter-cooled direct injection diesel engines.

Specifications, Approvals and Recommendations

Shell Helix HX7 K exceeds the requirements of the following industry standards:

API Service Classification	SL/CF
ACEA	A3/A4
JASO	SG+

Typical Physical Characteristics

Shell Helix HX7 K			15W-50
Kinematic Viscosity	@ 40°C	cSt	145
	@ 100°C	cSt	19.1
Density	@ 15°C	kg/l	0.88
Flash Point		°C	220
Pour Point		°C	–27

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX7 AJ

10W-30 Synthetic technology motor oil.

Shell Helix HX7 AJ is the latest generation synthetic technology engine oil. Specifically designed to help provide better engine responsiveness, enabling it to operate at its full potential right up to the next scheduled oil change.

Performance Features

Enhanced oxidation stability

- Up to 19% more protection than other synthetic technology leading brands tested.

Low viscosity, rapid oil flow and low friction

- Improved fuel efficiency.

Special active cleansing technology

- Twice as effective at removing sludge from dirty engines than a normal mineral oil.

High shear stability

- To maintain viscosity and stay in grade throughout the oil drain period.

Specially selected synthetic base oils

- Reduces the oil volatility and therefore the oil consumption. The need for oil top-up is reduced.

Minimises vibration and engine noise

- Smoother, quieter drive.

Applications

- Synthetic Technology oil that is suitable for use in fuel-injected petrol engines and catalytic converters.
- Also suitable for turbo-charged and inter-cooled direct injection diesel engines fitted with catalytic converters.

Specifications, Approvals and Recommendations

Shell Helix HX7 AJ is suitable for use where the following specifications are called for:

API Service Classification	SM/CF
ILSAC	GF-4

Typical Physical Characteristics

Shell Helix HX7 AJ			10W-30
Kinematic Viscosity	@ 40°C	cSt	79.5
	@ 100°C	cSt	10.82
Density	@ 15°C	kg/l	0.88
Flash Point		°C	220
Pour Point		°C	–33

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX7 AF

Passenger car engine oil for modern cars.

Shell Helix HX7 AF is the latest generation synthetic technology engine oil designed specifically to meet the needs of all Ford petrol and diesel engines without particulate filters. Formulated for extra responsiveness right up to the next scheduled oil change.

Performance Features

Excellent engine protection

- Contains special active cleansing technology to continuously help prevent dirt and sludge from building-up. Formulated to provide extra protection and responsiveness right up to the next scheduled oil change.

Catalyst and turbo compatible

Fuel economy performance

- Low viscosity, rapid oil flow in starting condition and low friction help improve fuel efficiency.

Easy start up even with cold condition

- The rapid oil flow in starting condition assures an easy start and the engine protection in this severe phase.

Applications

- All naturally aspirated, fuel injected, turbocharged and multi-valve Ford passenger car engines that admit the use of fuel economy oils having a low viscosity in high temperature high shear rate conditions.
- Oils meeting WSS-M2C 913A&B have a mandatory recommendation for the following Ford models:

  Petrol engines 1999 model year onwards:

  > Vehicles with 20000km service interval

  > Focus 1.4/1.6 Zetec-SE, 1.8/2.0 Zetec-E

  > Mondeo 2001 – 1.8/2.0 Duratec-HE, 2.5 Duratec-VE

  > Transit (8/98) – 2.0/2.3 DOHC

  Diesel engines 1999 model year onwards:

  > Focus – 1.8 Endura-DI, 1.8 DuraTorq – TDCi

  > Mondeo – 2.0 DuraTorq DI

  > Transit – 2.0/2.4 DuraTorq DI

Specifications, Approvals and Recommendations

Shell Helix HX7 AF is suitable for use where the following specifications are called for:

API Service Classification	SJ
ILSAC	GF-2
ACEA	A1/B1
Ford Motor Company	Approved against WSS-M2C913A and WSS-M2C913B

Typical Physical Characteristics

Shell Helix HX7 AF				**5W-30**
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	57.4
	@ 100°C	cSt	ASTM D 445	9.5
Viscosity Index			ASTM D 2270	160
Density	@ 15°C	kg/l	ASTM D 1298	857
Flash Point		°C	ASTM D 93	192
Pour Point		°C	ASTM D 97	–45

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX5

15W-40 Premium multi-grade motor oil.
Cleans and protects, helping to reduce engine noise.

Shell Helix HX5 has been formulated with cleansing technology. It works harder to help protect than ordinary motor oils by continuously helping to prevent dirt and sludge from building up and helping to reduce engine noise.

Performance Features

Formulated with cleansing agent technology

- Up to 23% more effective at removing deposits from dirty engines than a normal mineral oil.

Good oxidation stability

- Resists oil degradation throughout the oil drain period.

High quality base oils

- Helps reduce the oil volatility and therefore the oil consumption.

Minimises vibration and engine noise

- Smoother, quieter drive.

Applications

Petrol and Diesel engines

- Shell Helix HX5 is suitable for fuel-injected petrol engines.
- Also suitable for naturally aspirated or turbo-charged indirect injection diesel engines.

Specifications, Approvals and Recommendations

Shell Helix HX5 is suitable for use where the following specifications are called for:

API Service Classification	SL/CF
ACEA	A2/B2

Typical Physical Characteristics

Shell Helix HX5			15W-40
Kinematic Viscosity	@ 40°C	cSt	105.4
	@ 100°C	cSt	13.9
Viscosity Index			132
Density	@ 15°C	kg/l	0.885
Flash Point		°C	220
Pour Point		°C	–30

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX5 G

15W-40 Premium multi-grade oil for gas vehicles. Cleans and protects, reducing engine noise.

Shell Helix HX5 G has been formulated with cleansing technology. It works harder to help protect than ordinary motor oils by continuously helping to prevent deposits from building up on engine surfaces and helping to reduce engine noise.

Performance Features

Formulated with cleansing technology

- Up to 23% more effective at removing deposits from dirty engines than a normal mineral oil.

Good oxidation stability

- Resists oil degradation throughout the oil drain interval.

High quality base oils

- Helps reduce the oil volatility and therefore the oil consumption.

Minimises vibration and engine noise

- Smoother, quieter drive.

Applications

Dual fuel petrol and gas

- Shell Helix HX5 G has been formulated with cleansing technology. It works harder to protect than ordinary motor oils by continuously helping to prevent deposits from building up on engine surfaces.
- Suitable for dual-fuelled petrol and LPG engines.

Specifications, Approvals and Recommendations

Shell Helix HX5 G is suitable for use where the following specifications are called for:

API Service Classification	SL/CF
ACEA	A2

Typical Physical Characteristics

Shell Helix HX5 G			15W-40
Kinematic Viscosity	@ 40°C	cSt	105.4
	@ 100°C	cSt	13.9
Viscosity Index			132
Density	@ 15°C	kg/l	0.885
Flash Point		°C	220
Pour Point		°C	–30

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix Diesel HX5

15W-40 Premium multi-grade motor oil.
Cleans and protects for reduced engine noise and vibration.

Shell Helix Diesel HX5 has been formulated with cleansing technology. It uses special active cleansing technology to help engines operate effectively for a smoother and quieter drive.

Performance Features

Formulated with cleansing technology

- Works harder to protect than ordinary motor oils by continuously helping to prevent soot deposits from building up on engine surfaces.

Good oxidation stability

- Resists oil degradation throughout the oil drain interval.

High quality base oils

- Helps reduce the oil volatility and therefore the oil consumption.

Minimises vibration and engine noise

- Smoother, quieter drive.

Application

Diesel engines

- Suitable for naturally aspirated or turbo-charged indirect injection diesel engines. These engines produce more power than older engines and therefore run hotter. Hotter engines can produce more dirt and sludge.

Specifications, Approvals and Recommendations

Shell Helix Diesel HX5 is suitable for use where the following specifications are called for:

API Service Classification	CF
ILSAC	A2/B2

Typical Physical Characteristics

Shell Helix Diesel HX5			15W-40
Kinematic Viscosity	@ 40°C	cSt	105.4
	@ 100°C	cSt	13.9
Viscosity Index			132
Density	@ 15°C	kg/l	0.885
Flash Point		°C	220
Pour Point		°C	–30

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX5 K

25W-60 Premium multi-grade motor oil.

Shell Helix HX5 K is a premium multi-grade engine oil. Specifically designed to help reduce engine noise, and enables the engine to operate at its full potential. It works harder to protect than ordinary motor oils by continuously helping to prevent dirt and sludge from building up.
Shell Helix HX5 K is thicker than ordinary oils and contains extra anti-wear agents. These help to reduce oil leaks and slow down engine wear to help protect and prolong the life of the engine.

Performance Features

Thicker oil that contains extra anti-wear agents

- Helps to reduce wear and oil consumption, and maintain cylinder compression.

Formulated with cleansing technology

- Up to 23% more effective at removing sludge from dirty engines than a normal mineral oil.

Good oxidation stability

- Resists oil degradation throughout the recommended oil drain interval.

High quality base oils

- Helps reduce the oil volatility and therefore the oil consumption.

Minimises vibration and engine noise

- Smoother, quieter drive.

Application

Petrol engines

- Fuel-injected vehicles. Also suitable for naturally aspirated or turbo-charged indirect injection diesel engines.

Specifications, Approvals and Recommendations

Shell Helix HX5 K is suitable for use where the following specifications are called for:

API Service Classification	SL/CF
ACEA	A2/B2

Typical Physical Characteristics

Shell Helix HX5 K			**25W-60**
Kinematic Viscosity	@ 40°C	cSt	199.0
	@ 100°C	cSt	22.5
Viscosity Index			137
Density	@ 15°C	kg/l	0.888
Flash Point		°C	250
Pour Point		°C	–15

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX5 AJ

10W-30 Premium multi-grade oil.
Cleans and protects, reducing engine noise.

Shell Helix HX5 AJ has been formulated with cleansing technology. It works harder to protect than ordinary motor oils by continuously helping to prevent dirt and sludge from building up.

Performance Features

Formulated with cleansing agent technology

- Up to 23% more effective at removing deposits from dirty engines than a normal mineral oil.

Good oxidation stability

- Resists oil degradation throughout the oil drain interval.

High quality base oils

- Helps reduce the oil volatility and therefore the oil consumption.

Minimises vibration and engine noise

- Smoother, quieter drive.

Low viscosity, rapid oil flow and low friction

- Improved fuel efficiency

Reduced phosphorus

- Longer catalyst life.

Applications

Passenger car engines

- Suitable for fuel-injected petrol engines fitted with emissions control technology and catalytic converters.
- Also suitable for naturally aspirated or turbo-charged indirect injection diesel engines.

Specifications, Approvals and Recommendations

Shell Helix HX5 AJ is suitable for use where the following specifications are called for:

API Service Classification	SL/CF
ILSAC	GF-3

Typical Physical Characteristics

Shell Helix HX5 AJ			10W-30
Kinematic Viscosity	@ 40°C	cSt	72.3
	@ 100°C	cSt	10.8
Viscosity Index			138
Density	@ 15°C	kg/l	0.88
Flash Point		°C	220
Pour Point		°C	–33

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Helix HX3

20W-50 Multi-grade motor oil. Cleans and protects older engines.

Shell Helix HX3 has been formulated with cleansing technology to help stop dirt and sludge building up and therefore help protect and prolong the life of the engine.

Performance Features

Formulated to remove engine deposits

- Helps to protect and prolong the life of the engine.

Oxidation resistance

- Resists oil degradation throughout the oil drain interval.

Multi-grade viscosity

- Easier cold starting compared with mono-grade oils.
- Helps reduce oil consumption.

Applications

Petrol and Diesel engines

- Shell Helix HX3 is suitable for petrol engines fitted with conventional carburettors.
- Also suitable for naturally aspirated or turbo-charged indirect diesel engines.
- Formulated with cleansing technology to help stop dirt and sludge building up.

Specifications, Approvals and Recommendations

Shell Helix HX3 is suitable for use where the following specifications are called for:

API Service Classification SJ/CF

Typical Physical Characteristics

Shell Helix HX3			20W-50
Kinematic Viscosity	@ 40°C	cSt	157.0
	@ 100°C	cSt	19.0
Viscosity Index			137
Density	@ 15°C	kg/l	0.888
Flash Point		°C	215
Pour Point		°C	–27

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance SX 2

Motorcycle 2-stroke engine oil

Shell Advance SX 2 is a premium quality lubricant for 2-stroke motorcycle engines. It is formulated for very good engine protection and cleanliness, reliable control against exhaust system blocking and helps to reduce exhaust smoke. Shell Advance SX 2 is suitable both for all oil-injection and premix systems and meets the requirements of leading manufacturers.

Performance Features

Very good engine protection and cleanliness

- The formulation has been specifically tested in 2-stroke engines in order to help prevent scuffing, ring sticking and deposit formation.

Reliable control against exhaust system blocking

- The formulation is designed to limit exhaust system deposits, helping to keep engine performance at the original level.

Reduced exhaust smoke

- The inclusion in the formulation of polyisobutylenes as carefully balanced components is designed to reduce exhaust smoke, helping to limit the environment impact.

Very good self mixing properties

- Shell Advance SX 2 contains a hydrocarbon diluent and it can therefore be used both in oil injection systems fitted to modern 2-stroke motorcycles and in premix systems.

Dyed red for easier recognition

Application

- 2-stroke motorcycle engines with oil injection or premix system.

Shell Advance SX 2 should not be used in outboard engines. The appropriate Shell Nautilus Oil is recommended for this application.

Specifications, Approvals and Recommendations

Shell Advance SX 2 exceeds the following international specifications:

API TC
JASO FB
ISO-L-EGB

and meets the requirements of leading motorcycle manufacturers.

Typical Physical Characteristics

Shell Advance SX 2				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	63.1
	@ 100°C	cSt	ASTM D 445	8.9
Viscosity Index			ISO 2909	116
Density	@ 15°C	kg/m^3	ASTM D 4052	872
Flash Point		°C	ISO 2592	122
Pour Point		°C	ISO 3016	–20

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Ultra 2

Shell's ultimate performance 2-stroke motorcycle oil

Shell Advance Ultra 2 is a unique, Shell technology, fully synthetic oil for Shell's ultimate performance and protection of 2-stroke motorcycle engines. It is a combination of polyisobutylenes and Shell XHVI synthetic base fluids blended with proven additives to give superior performance in all 2-stroke engines, even those subjected to the most extreme conditions.

Performance Features

- Extremely low smoke
- Shell's ultimate lubrication at peak performance levels
- Improved engine responsiveness compared to mineral oil products.
- Outstanding engine cleanliness
- Shell's maximum protection against scuffing and ring sticking
- Ultra low combustion and exhaust system deposits
- Helps to extend engine life
- Excellent mixing with leaded and unleaded petrol
- Dyed red for easier recognition

Applications

- All 2-stroke motorcycle engines with oil injection or premix system.
- Recommended for high-performance air and water cooled 2-stroke engines including race tuned.

Shell Advance Ultra 2 should not be used in outboard engines. The appropriate Shell Nautilus Oil is recommended for this application.

Specifications, Approvals and Recommendations

Shell Advance Ultra 2 exceeds the requirements of all major motorcycle manufacturers and the following international specifications:

API TC
JASO FD
Exceed proposed ISO EGD

Self-Mixing Properties

Shell Advance Ultra 2 is a self-mixing oil containing hydrocarbon diluent. It is blended to the correct viscosity for use in oil injection systems fitted to modern 2-stroke motorcycles.

Typical Physical Characteristics

Shell Advance Ultra 2			
Kinematic Viscosity	@ 40°C	cSt	68.9
	@ 100°C	cSt	9.0
Density	@ 15°C	kg/l	0.855
Flash Point		°C	102
Pour Point		°C	–20
Total Base Number		mg KOH/g	2.17
Sulphated Ash			0.11

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance 2T

Motorcycle 2-stroke engine oil

Shell Advance 2T is a premium quality lubricant for 2-stroke motorcycle engines. It is formulated for very good engine protection and cleanliness and reliable control against exhaust system blocking, and helps reduce exhaust smoke. Shell Advance 2T is suitable both for all oil-injection and premix systems and meets the requirements of leading manufacturers.

Performance Features

Very good engine protection and cleanliness

- The formulation has been specifically tested in 2-stroke engines in order to help prevent scuffing, ring sticking and deposit formation.

Reliable control against exhaust system blocking

- The formulation is designed to limit exhaust system deposits, helping to keep engine performance at the original level.

Reduced exhaust smoke

- The inclusion in the formulation of polyisobutylenes as carefully balanced components is designed to reduce exhaust smoke, helping to limit the environment impact.

Very good self mixing properties.

- Shell Advance 2T contains a hydrocarbon diluent and it can therefore be used both in oil injection systems fitted to modern 2-stroke motorcycles and in premix systems.

Application

Two stroke motorcycle engines with oil injection or premix system

- Shell Advance 2T should not be used in outboard engines. The appropriate Shell Nautilus Oil is recommended for this application.

Specifications, Approvals and Recommendations

Shell Advance 2T exceeds the following international specifications:

API TC

JASO FC

ISO-L-EGC

and meets the requirements of leading motorcycle manufacturers.

Typical Physical Characteristics

Shell Advance 2T				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	67.0
	@ 100°C	cSt	ASTM D 445	9.14
Viscosity Index			ISO 2909	130
Density	@ 15°C	kg/m^3	ASTM D 4052	863
Flash Point		°C	ISO 2592	132
Pour Point		°C	ISO 3016	–20

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance ST Sport 2T

2-stroke motorcycle engine oil (undyed/prediluted)

Shell Advance ST Sport 2T offers advanced engine protection and performance in 2-stroke motorcycle engines. Shell Advance ST Sport 2T is suitable for all oil-injection and premix systems. Shell Advance ST Sport 2T contains Shell's advanced additive boost system, helping to deliver more enjoyment from your bike.

Performance Features

Engine protection and cleanliness

The advanced formulation is carefully balanced and specifically tested in 2-stroke engines to prevent piston scuffing, ring sticking and deposits, in order to help prolong the engine life and maintain its original performance level.

Very good self mixing properties

- Shell Advance ST Sport 2T contains a hydrocarbon diluent and can therefore be used, both in oil injection systems fitted to modern 2-stroke motorcycles and in premix systems.

Application

- All 2-stroke motorcycle engines with oil injection or premix system.

Specifications, Approvals and Recommendations

Shell Advance ST Sport 2T exceeds the following international specifications:

JASO	FC
ISO	EGC

Typical Physical Characteristics

Shell Advance ST Sport 2T				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	67
	@ 100°C	cSt	ASTM D 445	9.14
Viscosity Index			ISO 2909	130
Density	@ 15°C	kg/m^3	ASTM D 4052	863
Flash Point		°C	ISO 2592	140
Pour Point		°C	ISO 3016	–5

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance S 4

Quality 4-stroke motorcycle oil

Shell Advance S 4 is a quality 20W-50 4-stroke motor cycle oil, based on a careful blend of high viscosity index mineral oils and proven additives to provide a good 'all-year-round' performance in 4-stroke motorcycle engines.

Performance Features

- Reliable engine protection
- Fully compatible with leaded and unleaded petrol.

Applications

- Standard four-stroke motorcycle engines
- 2-stroke motorcycle gearboxes.

Specifications, Approvals and Recommendations

Shell Advance S 4 is suitable for use where the following specification is called for:

API SG
Viscosity 20W-50

Health and Safety

Shell Advance S 4 is unlikely to present any significant health or safety hazard when properly used in the recommended application, and good standards of industrial and personal hygiene are maintained.

Avoid contact with skin. After skin contact, wash immediately with soap and water.

For further guidance on Product Health and Safety refer to the appropriate Shell Product Safety Data Sheet.

Protect the environment

Take used oil to an authorised collection point. Do not discharge into drains, soil or water

Typical Physical Characteristics

Shell Advance S 4			20W-50
Kinematic Viscosity	@ 40°C @ 100°C	cSt cSt	161.0 18.1
Viscosity Index			120
Density	@ 15°C	kg/l	0.891
Flash Point	°C		218
Pour Point	°C		–27
Total Base Number	mg KOH/g		9.7
Sulphated Ash			1.0

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance SX 4

Premium motorcycle oil

Shell Advance SX 4 is a premium quality lubricant based on a blend of high viscosity index mineral oils and proven additives. Specifically formulated for motorcycle engine performance and protection, Shell Advance SX 4 meets the 'all-the-year-round' requirements of 4-stroke motorcycle engines.

Performance Features

- Meets JASO MA for smooth gear shift and clutch performance.
- Helps to keep engine and gearbox clean.
- Helps to sustain engine power and life.

Application

- All 4-stroke motorcycle engines.

Available Viscosities

SAE 10W-40 and 15W-50.

Specifications, Approvals and Recommendations

Advance SX 4 is suitable for use where the following specification is called for:

API	SJ
JASO	MA

Typical Physical Characteristics

Shell Advance SX 4			10W-40	15W-50
Kinematic Viscosity	@ 40°C	cSt	103.0	128.5
	@ 100°C	cSt	14.8	17.8
Viscosity Index			150	154
Density	@ 15°C	kg/l	0.870	0.882
Flash Point		°C	208	210
Pour Point		°C	–30	–27
Total Base Number		mg KOH/g	9.7	9.7
Sulphated Ash			1.0	1.0

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Ultra 4

Fully synthetic motorcycle 4-stroke engine oil

Shell Advance Ultra 4 is a unique, fully synthetic lubricant for Shell's ultimate engine protection and superior clutch and gearbox operation for high performance 4-stroke motorcycles.
The technology has been proven in race and endorsed by leading motorcycle manufacturers.

Performance Features

Shell's ultimate protection

- Exceptional protection in the hardest driving conditions due to the unique formulation based on synthetic base oils and components specifically tested for motorcycles, in order to help prolong engine life and maintain its original performance level.

Ultra smooth clutch and superior gearbox operation

- Free-flowing, "jerk-free" gear changes appreciated by the discerning motorcyclist.

Shell's ultimate performance even in racing application

- The low friction technology used promotes quick engine response and increases the power output and it has been proven in racing environment. For bikers especially interested in the highest power output the 10W-40 viscosity grade version is suggested.

All year and weather condition

- The formulation allows the use of the same product all over the year and in all typical weather conditions. The product is anyway available in two different viscosity grades so that the biker can select the most suitable to their driving habits and conditions.

Applications

- High-performance air and water-cooled 4-stroke motorcycle engines, including race-tuned and the ones with gearboxes and wet clutches.
- Motorcycle gearboxes that must be lubricated by engine oils, including some gearboxes present in 2-stroke bikes and scooters.

Specifications, Approvals and Recommendations

Shell Advance Ultra 4 is available in two different viscosity grades:

SAE J 300 10W-40.

Both the formulations exceed the following international specification:

API SG
JASO MA
and are endorsed by Ducati and KTM.

Shell Advance Ultra 4 exceeds the requirements of all Japanese and European motorcycle manufacturers.

Typical Physical Characteristics

Shell Advance Ultra 4			10W-40
Kinematic Viscosity	@ 40°C	cSt	98.6
	@ 100°C	cSt	15.8
Viscosity Index			172
Density	@ 15°C	kg/m^3	858
Flash Point		°C	230
Pour Point		°C	–36

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance VSX 4

Synthetic based motorcycle 4-stroke engine oil

Shell Advance VSX 4 is a synthetic based lubricant specifically developed for 4-stroke motorcycles, offering excellent engine protection and superior clutch and gearbox operation.

Performance Features

Excellent protection

- Balanced formulation blended specifically for motorcycles. It is designed to prolong the engine life and maintain the original performance level throughout the life of the engine.

Superior smooth clutch and gearbox operation

- Free-flowing, "jerk-free" gear changes appreciated by the discerning motorcyclist.

Low oil consumption

- The carefully balanced formulation of additives and base oil produces a product with naturally low consumption properties.

All year and weather condition

- The formulation allows the use of the same product all over the year and in all typical weather conditions.

Applications

- High-performance air and water-cooled 4-stroke motorcycle engines, including race-tuned and those with gearboxes and wet clutches.
- Motorcycle gearboxes that must be lubricated by engine oils, including some gearboxes present in 2-stroke bikes and scooters.

Specifications, Approvals and Recommendations

The product exceeds the following international specification:

SAE J 300	10W-40 15W-50
API	SG
JASO	MA

Shell Advance VSX 4 exceeds the requirements of all Japanese and European motorcycle manufacturers.

Typical Physical Characteristics

Shell Advance VSX 4			10W-40	15W-50
Kinematic Viscosity	@ 40°C	cSt	94.2	14.2
	@ 100°C	cSt	14.46	19.5
Viscosity Index			159	157
Density	@ 15°C	kg/m^3	871	870
Flash Point		°C	228	218
Pour Point		°C	–33	–27

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance 4T

Motorcycle 4-stroke engine oil

Shell Advance 4T is a quality 15W-40 petrol engine oil for 4-stroke motorcycle engines and gearbox/transmission systems of either 2 or 4-stroke motorcycles.

Performance Features

Shell Advance 4T is formulated from highly refined high viscosity index base oils. It contains additives carefully selected to promote excellent piston and piston ring cleanliness, at the same time controlling oxidation and the harmful by-products of combustion.

Shell Advance 4T is formulated to provide the following benefits:

- Reduced engine deposits
- Resistance to oil oxidation
- Protection of components against wear
- Resistance to rust and corrosion
- Good gearbox performance without clutch slippage

Applications

- 4-stroke motorcycle engines.
- Gearbox/transmission systems of 2-stroke and 4-stroke motorcycles.

Specifications, Approvals and Recommendations

Shell Advance 4T meets the following performance specifications:

API	SF
JASO	MA
Viscosity	15W-40

Typical Physical Characteristics

Shell Advance 4T			15W-40
Kinematic Viscosity	@ 40°C	cSt	119.5
	@ 100°C	cSt	15.5
Viscosity Index			136
Density	@ 15°C	kg/l	0.885
Flash Point		°C	225
Pour Point		°C	–33

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance ST Sport 4T

Motorcycle 4-stroke engine oil

Shell Advance ST Sport 4T is a quality 15W-50 4-stroke motorcycle and gearbox/transmission systems oil. It meets API SJ and JASO MA performance specifications and contains Shell Advance DPA I advanced additive boost technology, helping to deliver more enjoyment from your bike.

Performance Features

Shell Advance ST Sport 4T is formulated from highly refined high viscosity index base oils. It contains additives carefully selected to promote excellent piston and piston ring cleanliness, at the same time controlling oxidation and the harmful by-products of combustion.

Shell Advance ST Sport 4T is formulated to provide the following benefits:

- Reduced engine deposits.
- Resistance to oil oxidation.
- Protection of components against wear.
- Resistance to rust and corrosion.
- Good gearbox performance without clutch slippage.
- More enjoyment from your bike through Shell's Advanced DPA I additive boost.

Applications

- 4-stroke motorcycle engines.
- Gearbox/transmission systems of 4-stroke motorcycles.

Specifications, Approvals and Recommendations

Shell Advance ST Sport 4T meets the following performance specifications:

API	SJ
JASO	MA
Viscosity	15W-50

Typical Physical Characteristics

Shell Advance ST Sport 4T				**15W-50**
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	145.0
	@ 100°C	cSt	ASTM D 445	18.45
Viscosity Index			ISO 2909	143
Density	@ 15°C	kg/l	ASTM D 4052	0.88
Flash Point		°C	ISO 2592	235
Pour Point		°C	ISO 3016	–27

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Racing M

Castor based racing oil

Shell Advance Racing M is a castor based racing oil with synthetic components. It has been developed especially for 2-stroke karts. It is also recommended for 4-stroke speedway motorcycles and other engines burning alcohol. Shell Advance Racing M is a race proven technology (kart sport world championship) and is not recommended for day to day road usage.

Performance Features

Exceptional engine protection

- Exceptional protection in the most severe racing conditions even at the highest revving condition of 2-stroke karts. The unique formulation based on castor oil and synthetic components specifically tested for 2-stroke racing engines helps to prevent scuffing, ring sticking and deposit formation, making the engine reliable while maximising power output.

Improved acceleration and power output

- The ease of burning allows fast adaptation to mixture adjustment helping to improve acceleration performance and power output versus mineral oil. Also the very low ash content minimises spark plug fouling, helping to keep their efficiency high.

Applications

- 2-stroke karts with very high revving 2-stroke racing engines
- 4-stroke speedway motorcycles
- Racing engines burning alcohol mixture

Shell Advance Racing M is not ideally suited for "on-road use". Shell Advance Ultra 2 or Shell Advance VSX 2 or Scooter Plus 2 or Scooter 2 are the preferred grades for "on-road" 2-stroke engines.

Shell Advance Racing M is non-diluted therefore it is suggested to use it in premixing system with a mixing ratio of 1:16 for karts and 1:25 for motorcycles unless otherwise recommended by engine manufacturer.

Shell Advance Racing M should not be used in outboard engines. The appropriate Shell Nautilus Oil is recommended for this application

Specifications, Approvals and Recommendations

Shell Advance Racing M is approved by FIM/FIA-CIK and it has been kart sport world championship proven.

It meets SAE J 300 30 viscosity grade requirements.

Castor based oils like Shell Advance Racing M must never be mixed with conventional mineral oils.

Typical Physical Characteristics

Shell Advance Racing M				30
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	108.0
	@ 100°C	cSt	ASTM D 445	12.0
Viscosity Index			ISO 2909	100
Density	@ 15°C	kg/m^3	ASTM D 4052	0.893
Flash Point		°C	ISO 2592	272
Pour Point		°C	ISO 3016	–9

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Racing X 2T

Fully Synthetic Racing 2-stroke engine oil

Shell Advance Racing X 2T is a unique, fully synthetic lubricant for Shell's ultimate engine protection and performance in 2-stroke racing motorcycle engines and karts with manual gearboxes.
Shell Advance Racing X 2T is a race proven technology (Grand Prix, off-road world championships and kart sports) and it is not recommended for day to day on road usage.

Performance Features

Exceptional engine protection

- Exceptional protection in the most severe racing conditions. The unique formulation based on synthetic base oils and components specifically tested for 2-stroke racing engines helps prevent scuffing, ring sticking and deposit formation making the engine reliable while maximising power output.

Excellent throttle response

- Superb lubrication and low friction provide this essential quality for racing engines.

Applications

World championship competition engines in Grand Prix, motocross, road racing, kart and other 2-stroke motorcycle racing engines.

Shell Advance Racing X 2T is not ideally suited for "on-road use". Shell Advance Ultra 2 or VSX 2 are the preferred grades for "on-road" 2-stroke engines.

Shell Advance Racing X 2T is non-diluted therefore it is suggested to use it in premixing system with a mixing ratio of 1:40 unless otherwise recommended by engine manufacturer.

Shell Advance Racing X 2T should not be used in outboard engines. The appropriate Shell Nautilus Oil is recommended for this application.

Specifications, Approvals and Recommendations

Shell Advance Racing X 2T is approved by FIM/FIA-CIK.

Typical Physical Characteristics

Shell Advance Racing X 2T				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	173.6
	@ 100°C	cSt	ASTM D 445	19.93
Viscosity Index			ISO 2909	135
Density	@ 15°C	kg/m^3	ASTM D 4052	918
Flash Point		°C	ISO 2592	292
Pour Point		°C	ISO 3016	–37

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Fork 5, 10 and 15

A range of high performance suspension fluids

Shell Advance Fork is carefully designed to meet the varying viscosity requirements of motorcycle forks, dampers and suspension.

Performance Features

Consistent fork operation over wide temperature range

- When the correct viscosity grade for the application has been identified, the formulation of the products allow for consistent fork operation over a wide temperature range.

All Shell Advance Fork fluids can be mixed in whatever combination to fine tune suspension performance

- The formulations below are fully compatible with each other. Therefore it is possible to create the optimum fluid for your own application and expectation.

Controlled seal swell

- The additives used control seal swell.

Long life

- The products maintain performance level for a long period allowing long oil drain intervals.

Applications

- All motorcycle front forks including upside down forks.
- Rear damper units.

Specifications, Approvals and Recommendations

The products meet the SAE viscosity grade included in the product name.

Typical Physical Characteristics

Shell Advance Fork			5	10	15
Kinematic Viscosity					
@ 40°C	cSt	ASTM D 445	15	32	46
@ 100°C	cSt	ASTM D 445	3.8	6.4	8.2
Viscosity Index		ISO 2909	153	153	154
Density @ 15°C	kg/m^3	ASTM D 4052	884	870	873
Flash Point	°C	ISO 2592	145	195	200
Pour Point	°C	ISO 3016	<–51	–42	–39

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Chain

High quality lubricant for motorcycle chains and linkages

Performance Features

Shell Advance Chain has been developed with a concern for the environment. It contains no chlorinated solvents, and will not fling off, unless applied in excessive quantities.

Shell Advance Chain should be applied by running a thin bead of oil along the inside of the chain whilst the chain is moving slowly with the motorcycle out of gear and the rear wheel up. Let the oil distribute well over the surface of the chain and sprockets by letting the wheel turn for a minute or two before riding the motorcycle.

Shell Advance Chain will cling to the chain and sprocket. The high staying power will ensure good lubrication and help extend the life of the chain as well as eliminate fling off.

- Helps to protect against wear and corrosion.
- Excellent penetration and adhesion.
- Extreme film strength to minimise friction.
- Withstands high pressure and temperatures.
- Does not attack 'O' rings.
- All angle aerosol pack with adaptor tube for hard to get at places.
- Available in a convenient 250ml squeeze bottle.

Typical Physical Characteristics

Shell Advance Chain				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	3000
	@ 100°C	cSt	ASTM D 445	140
Viscosity Index			ISO 2909	–
Density	@ 15°C	kg/l	ASTM D 4052/D1298	0.903
Flash Point		°C	ISO 2592	–
Pour Point		°C	ISO 3016	–

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Advance Gear

Low viscosity motorcycle gear oil

Shell Advance Gear 15W-40 is a mineral motorcycle gear oil.

Performance Features

Maximum power transfer through gearbox

- The low viscosity helps maximise the power transfer through the gearbox.

Smooth gearshift and clutch performance

- The carefully selected formulation is designed to deliver good performance of the clutch and the gearshift.

Superior protection when hot, easy start when cold

- The formulation, and specifically the wide Viscosity Grade, delivers the right balance between protection in high temperature conditions, usually achieved after long run, and easy start when the oil is cold.

Long oil life and long gear life

- The carefully selected components render a very good antioxidant and anticorrosion performance.

Applications

- 2-stroke motorcycle gearboxes where an API GL3 product is required.
- Separate 4-stroke gearboxes where an API GL3 product is required.

Specifications, Approvals and Recommendations

The product exceeds API Service Classification GL3.

The product meets SAE 15W-40 specification.

Typical Physical Characteristics

Shell Advance Gear				15W-40
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	168
	@ 100°C	cSt	ASTM D 445	14.3
Viscosity Index			ISO 2909	141
Density	@ 15°C	kg/m^3	ASTM D 4052	882
Flash Point		°C	ISO 2592	224
Pour Point		°C	ISO 3016	–36

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Nautilus Marine Grease

Heavy duty grease for general marine applications

Shell Nautilus Marine Grease is a multipurpose, lead-free, extreme-pressure grease ideally suited for universal use on boats and trailers.

Performance Features

Outstanding mechanical stability

- Maintains its excellent lubrication properties even when subjected to severe vibration. Helps to prevent grease breakdown and leakage.

Excellent anti-wear and service life

- Long bearing life.

Good adhesive properties

- In conditions of heavy load and shock.

Excellent water wash-out resistance

- Helps to prevent corrosion. An essential quality for use in wet environments.

Good oil separation

- Helps to provide effective lubrication over long periods.

Safe handling

- Product does not require labelling.

Nautilus Marine Grease is dyed blue to provide visual check of application

Applications

- General purpose grease applications.
- Trailer wheel bearings.

Typical Physical Characteristics

Shell Nautilus Marine Grease		
Kinematic Viscosity @ 40°C @ 100°C	cSt cSt	160 15.5
Soap Type		Lithium/ Calcium
Base Oil Type		Mineral oil
NLGI Consistency		2
Dropping Point	°C	184

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Nautilus Premium Outboard Oil

2-stroke premium outboard oil

Shell Nautilus Premium Outboard Oil is a high performance lubricant for the superior protection of all two-stroke gasoline outboard motors.

Performance Features

Nautilus Premium Outboard Oil exceeds the requirements of all major outboard motor manufacturers and all industry specifications.

Application

- All 2-stroke gasoline outboard motors with or without separate oil tanks.

Specifications, Approvals and Recommendations

Certified by NMMA (National Maritime Manufacturers' Association) for service TC-W3 at the manufacturer's recommended fuel/oil ratio (up to 100:1)

Typical Physical Characteristics

Shell Nautilus Premium Outboard Oil			
Kinematic Viscosity	@ 40°C	cSt	38.0
	@ 100°C	cSt	7.0
Sulphated Ash			0.01
Density	@ 15°C	kg/l	0.871
Flash Point		°C	70
Pour Point		°C	–35

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Nautilus Premium 4-stroke

Premium protection for all 4-stroke petrol and diesel marine in-board engines

Shell Nautilus Premium 4 Stroke Oil is formulated with high quality base oils and synthetic, performance enhancing additives, giving excellent performance in both petrol and diesel engines used in marine application (inboard and outboard).

Performance Features

Long Oil Life

- High thermal stability for long oil life particularly in turbo charged engines

Engine cleanliness and low combustion residues

- Maintains cleaner pistons and resists ring sticking for consistent performance and oil control.

Superior viscosity retention

- High 'VI' (Viscosity Index) ensures adequate oil film strength at all operating temperatures.

Corrosion Protection

- Inhibits internal rust and corrosion.

Applications

4-stroke Marine Engines

- Shell Nautilus Premium 4-stroke helps to provide premium protection for all 4-stroke outboard engines as well as 4-stroke petrol and diesel marine inboard engines. It is suitable for petrol engines running on leaded and unleaded fuel and for all 4-stroke high speed marine diesel engines (but not Detroit) including turbo charged units.

Specifications, Approvals and Recommendations

Shell Nautilus Premium 4-stroke 10W-40 is suitable for use where the following specifications are called for:

API service classification SL/CF

Typical Physical Characteristics

Shell Nautilus Premium 4-stroke			10W-40
Kinematic Viscosity	@ 40°C	cSt	–
	@ 100°C	cSt	14.5
Viscosity Index			140
Density	@ 15°C	kg/l	0.88
Flash Point		°C	210
Pour Point		°C	–33

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Transaxle Oil

Synthetic high performance gear oil

Shell Transaxle Oil is particularly designed to fulfil the highest requirements of extremely loaded passenger car drive train systems.

Performance Features

Outstanding gear protection and synchromesh performance

- Careful choice of base oils combined with new additive technologies achieve Shell's highest level of performance in the particular "transaxle" transmission type designs, where gear protection and high and stable synchromesh compatibility are required.

Longer equipment life

- High shear stable formulation and durable extreme pressure (EP) performance allow an excellent protection against gear wear and pitting, helping to prevent premature failure, and assisting with longer component and lubricant life. Outstanding thermal and oxidation resistance also helps to prevent damage to seals from deposit formation.

Improved drive train efficiency

- Transaxle Oil reduces friction losses in the drive train, helping to improve efficiency and performance.
- As synthetic lubricant it ensures optimal lubrication at low and high temperature.

Environmentally friendly

- Excellent seal compatibility protects against leaks.
- Low-chlorine formulation and extended drain interval capability contributes to less environmental impact.

Recognised and used by leading sport car manufacturers

- Transaxle oil benefits have been recognised by a number of leading sport car manufacturers who are using it as initial and service fill gear oil.

Part of the Shell Synthetic Lubricants team

- Use in conjunction with other Shell synthetic lubricants for maximum benefit.

Applications

Transaxle transmissions

- Heavily loaded "transaxle" transmission where hypoid axle and gearbox are in the same housing and lubricated by the same product. Particularly in sport passenger car drive train systems.

Automotive transmissions

- Heavily loaded axle drives, synchronised and non-synchronised gearboxes.

Specifications, Approvals and Recommendations

API Service Classification	GL-4/5
Ferrari	Approved
Porsche	Approved

Typical Physical Characteristics

Shell Transaxle Oil				
Kinematic Viscosity	@ 40°C	cSt	ISO 3104	81.0
	@ 100°C	cSt	ISO 3014	14.9
Dynamic Viscosity	@ –40°C	mPa's	ISO 9262	35,000
Viscosity Index			ISO 2909	194
Density	@ 15°C	kg/m^3	ISO 12185	879
Flash Point		°C	ISO 2592	205
Pour Point		°C	ISO 3016	–45

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Brake and Clutch Fluid, DOT 4 Super

Shell Brake and Clutch Fluid, DOT 4 Super is a high performance glycol ether brake fluid designed to meet the performance requirements of Ford and Holden as well as other manufacturers requiring a high performance DOT 4 fluid. It offers superior dry and wet boiling points and maintains viscosity in cold and hot environments.

Properties

Shell Brake and Clutch Fluid, DOT 4 Super has superior Dry and Wet Equilibrium Reflux Boiling Points (ERBP) to meet the requirements of Ford and Holden in Australia and New Zealand. The product contains borate esters to scavange water and maintain ERBP as the fluid ages.

Miscibility

- Though miscible with other brake fluids meeting AS/NZS 1960.1, intermixing of brake fluids of different grades is not recommended. Always consult the vehicle manufacturer's recommendations before adding fluid. Intermixing may impact braking performance of some brake systems.
- This product is not miscible with silicone based brake fluids including those meeting AS/NZS 1960.2. Mixing will result in an emulsion within the brake system and may cause seal failure.
- This product is not compatible with any mineral or synthetic oil based fluids. Use or contamination at even ppm levels of brake systems in most vehicles will result in seal failure, leakage, and subsequent loss in brake performance.

Storage Stability

Shell Brake and Clutch Fluid, DOT 4 Super is suitable for sale and use up to two years after packaging in sealed, individual containers. Storage time is up to three years in sealed, metal, bulk containers. Protection should be provided to prevent any moisture contamination. Moisture contamination will result in a 5–10°C boiling point drop for each 0.1% of water absorbed

Specifications, Approvals and Recommendations

Aust./NZ	AS/NZS 1960.1, Grade 3
USA	FMVSS, No. 116, DOT 4
SAE	J1703 and J 1704
Ford	ESZ-M6C55-A
Holden	HN1796

Shell Brake and Clutch Fluid, DOT 4 Super is suitable to use wherever a DOT 4 fluid is required.

Typical Physical Characteristics

Shell Brake and Clutch Fluid, DOT 4 Super			
Kinematic Viscosity @ 40°C	cSt	ISO 3104	1150–1300
@ 100°C	cSt	ISO 3014	1.5
Dry ERBP			280°C minimum
Wet ERBP			170°C minimum
pH			7.5
Reserve Alkalinity	0.1 N HCl/10ml		58ml
Boron			1.30 mass%
Water			0.2% maximum
Appearance Undyed			Colourless to amber, free of foreign matter
Colour Dyed			Green (alternative colours can be made available)

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Power Steering Fluid

Advanced automatic power steering fluid

Shell Power Steering Fluid is a premium quality fluid designed to provide high performance in power steering systems.

Applications

Shell Power Steering Fluid is a premium quality fluid designed to provide high performance in power steering systems. It has been formulated to reduce power steering pump squeal even under severe conditions.

Shell Power Steering Fluid offers high performance for virtually all power steering systems (see Specifications, Approvals and Recommendations) including those specifying the use of automatic transmission fluids.

Shell Power Steering Fluid helps to prolong the life of power steering units. ATF is often used as Power Steering Fluid. Recommended for complete fluid replacement or top-off in most passenger cars and light duty trucks.

Performance Features

- Helps protect power steering unit components against wear.
- Helps prevent rust and corrosion.
- Helps to protect against seal and hose deterioration.

Specifications, Approvals and Recommendations

Meets the service requirements for:

DaimlerChrysler	MS5931
Ford	ESW-M2C128-C and D
GM	9985010
Volkswagen	TL-VW-570-26
Navistar	TMS6810

Also suitable for use in Mazda, Mercedes-Benz, Subaru and Volvo.

Note: Do not use in power steering systems which require Honda Part No. 08208-99961. The owner's service manual specifications should be followed for all applications.

Typical Physical Characteristics

Shell Power Steering Fluid			**30**
Kinematic Viscosity	@ 40°C	cSt	39.5
	@ 100°C	cSt	7.9
Viscosity Index			177
API Gravity	@ 15.6°C		29.5
Flash Point		°C	178
Pour Point		°C	–42

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell ATF III

High performance automatic transmission fluid

Shell ATF III is a premium quality automatic transmission fluid based on high viscosity index mineral oils and carefully selected additives. It is blended to meet the stringent requirements of leading automotive transmission manufacturers.

Performance Features

Friction modified

- Formulated to provide consistent, reliable, smooth and trouble free operation of automotive transmission systems.

Exceptionally high oxidation resistance

- Resistant to oil degradation and helps to keep automatic transmissions clean.

Excellent shear-stability

- A special 'VI' improver minimises the changes in viscosity with operating temperature.

Dependable anti-wear and gear protection

- Long component life.

Low temperature performance

- Excellent oil fluidity at low temperatures.

Shell ATF III is dyed red for identification purposes

Applications

- Passenger car automatic transmissions.
- Heavy duty automatic transmissions.
- Power steering units.
- Certain hydraulic applications calling for oils meeting ISO VG 32-46-68 viscosity requirements.

Specifications, Approvals and Recommendations

- Suitable for use in all vehicles where GM Dexron® III, Ford Mercon® or Allison C-4 fluids are required.
- Do not use where GM Dexron®I or Ford Mercon® V/Mercon® SP/Mercon® LV fluids are specified
- Dexron® is a trademark in many countries belonging to General Motors Company.
- Mercon® is a trademark in many countries belonging to Ford Motor Company.

Typical Physical Characteristics

Shell ATF III				
Kinematic Viscosity	@ 40°C	cSt	ISO 3104	33.8
	@ 100°C	cSt	ISO 3014	7.3
Viscosity Index			ISO 2909	175
Density	@ 15°C	kg/m^3	ISO 12185	864
Flash Point		°C	ISO 2592	180
Pour Point		°C	ISO 3016	–48

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell ATF XTR

Specifically developed for use in Ford 4-speed automatic transmissions

Performance Features

To help the transmission function to its full capacity, Shell ATF XTR provides:

- excellent gear durability
- good shift feel
- excellent thermal and chemical stability

Shell ATF XTR was developed by Shell for BTR, prior to the release of the Ford 4 Speed Automatic Transmission. When the transmission was introduced, BTR had tested and fully approved the use of Shell ATF XTR.

The synthetic base oil and additives combine to make a high performance Transmission Fluid which gives exceptional gear durability.

The chemical and thermal stability of this fluid makes it ideally suited for long distance towing in hot weather. The synthetic base fluid also ensures that ATF XTR is shear stable, and will perform well for the life of the transmission.

Applications

Shell ATF XTR is an approved service fill for the Ford 4-speed automatic transmissions made by BTR (both the 95LE in V8 and the 85LE in 6 cylinder models).

Shell ATF XTR is not recommended for use in any other transmissions.

Specifications, Approvals and Recommendations

Ford 4-speed automatic transmission

Approved Service Fill for:

85LE (Used With The 6 Cylinder Engine)
and
95LE (Used With The V8 Engine)

Note: Although Shell ATF XTR has specifications satisfying the requirements of Dexron® II, it is not a Dexron® II qualified product. It was formulated to meet the frictional requirements of the 85/95 LE transmissions, which are at the low end of the Dexron® II frictional properties. Shell ATF XTR is only recommended for Ford 4-speed automatic transmissions.

Typical Physical Characteristics

Shell ATF XTR				
Kinematic Viscosity	@ 40°C	cSt	ASTM D 445	31
	@ 100°C	cSt	ASTM D 445	7.5
Viscosity Index			ASTM D2270	170
Viscosity	@ –40°C	cSt	ASTM D 2983	34,000
Density	@ 15°C	kg/l	ASTM D 4052	0.85
Flash Point		°C	ASTM D93	148
Pour Point		°C	ASTM D97	–42
Copper Corrosion		3H/100°C	ASTM D 130	1A

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Long Life-OAT Pre-Diluted 33/67

Premium Antifreeze, Anti-boil and Anti-corrosion pre-diluted coolant product ready to use directly in cooling systems

Shell Long Life-OAT Pre-Diluted 33/67 is a pre-diluted glycol based engine coolant with a corrosion inhibitor package that is based on a balanced mixture of organic corrosion inhibitors. Shell Long Life-OAT Pre-Diluted 33/67 is suitable for all passenger cars, 4WDs, and light duty diesel vehicles, requiring use of an OAT coolant. Shell Long Life-OAT Pre-Diluted 33/67 is pre-diluted with good quality water and needs no further water addition; it is ready to use directly in cooling systems.

Performance Features

Shell Long Life-OAT Pre-Diluted 33/67 provides the following advantages:

- Recommended for automotive, 4WD, and light duty diesel applications requiring use of an OAT coolant (check specific OEM requirements prior to use to ensure the best fit).
- Silicate free, which therefore avoids silicate gelation or fallout issues.
- Amine, borate, nitrate and nitrite free and as such meets most basic Asian vehicle OEM chemistry requirements.
- Phosphate free, which therefore meets most basic European OEM chemistry requirements.
- Excellent wet sleeve liner cavitation protection as determined via the Deere and Company Engine Cavitation Test.
- Provides wet sleeve liner cavitation protection without an initial charge of SCA or coolant extender.
- Compatible with nitrite and molybdate corrosion inhibitor chemistry in SCAs.
- Compatible with other similarly formulated OAT engine coolant technology.
- Provides appropriate corrosion protection to all coolant system metals including copper, solder, brass, steel, cast iron and aluminum.
- Excellent shelf stability, 5 years.
- Long Life-OAT typically provides up to 5 years, 250,000km when used during complete drain and fill.

Shell Long Life-OAT Pre-Diluted 33/67 is pre-diluted with deionised water.

- Hassle-free use as it eliminates the need for complex solution mixing
- Guaranteed water quality and is especially important in areas of poor/hard water
- Guaranteed ratios of corrosion inhibition additives and glycol

Applications

- Shell Long Life-OAT Pre-Diluted 33/67 is suitable for use in all passenger cars, 4WDs, and light utility vehicles, requiring use of an OAT coolant.
- This product is already pre-diluted with water and needs no further water addition. Before using any coolant, please ensure that you have consulted your automobile owner's manual and your automobile manufacturer's recommendations prior to use.
- Shell Long Life-OAT Pre-Diluted 33/67 does not contain any amine, borate, nitrate, nitrite, phosphate or silicate corrosion inhibitor technology and is fully compatible with other similarly formulated OAT engine coolants.

Product Usage Recommendations

This product is already pre-diluted and DOES NOT NEED ANY FURTHER ADDITION OF WATER!

This product is to be applied directly into cooling systems.

Adding too much water to the coolant system without sufficient corrosion inhibitor will create corrosion performance issues in any engine coolant system.

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Shell Long Life-OAT Pre-Diluted 33/67

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Specifications, Approvals and Recommendations

Shell Long Life-OAT Pre-Diluted 33/67 meets the performance requirements of the following industry and OEM engine coolant specifications:

ASTM	D3306 / D4985
Ford	WSS-M97B44-D
GM	1825M / 1899M / 6277M
JIS	K 2234
AS/NZS	2108.1:1997
SAE	J1034 / J1941
Nissan	NES 5059 LLC
Volkswagen	VW/Audi/Porsche TL 774F
US Federal	A-A-870-A
AFNOR	NFR 15-601

Typical Physical Characteristics

Shell Multi-Vehicle Coolant/Antifreeze Concentrate		
Colour and Odor	Visual	Violet
pH. 50% with water, °C	ASTM D 1287	7.5—9.5
Specific Gravity (20°C)	ASTM D 1122	1.045—1.060
Reserve Alkalinity, ml	ASTM D 1121	1.6—2.3
Freeze Point (20°C)	ASTM D 1177	–18 max.
Water Content (% wt)		67

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Long Life-OAT Antifreeze/Coolant Concentrate

Premium antifreeze, anti-boil and anti-corrosion coolant

Shell Long Life-OAT Antifreeze/Coolant Concentrate is a glycol based engine coolant/antifreeze with a corrosion inhibitor package based on a balanced mixture of organic corrosion inhibitors. It does not contain any amine, borate, nitrate, nitrite, phosphate or silicate corrosion inhibitor technology and is fully compatible with other similarly formulated engine coolants. Shell Long Life-OAT Antifreeze/Coolant Concentrate is suitable for all passenger cars, 4WDs and light, medium and heavy duty diesel vehicles, requiring the use of an OAT coolant.

Performance Features

Shell Long Life-OAT Antifreeze/Coolant Concentrate provides the following advantages:

- Recommended for application in both automotive and heavy duty diesel applications requiring the use of an OAT coolant (check specific OEM requirements prior to use to ensure the best fit).
- Silicate free, which therefore avoids silicate gelation or fallout issues.
- Amine, borate, nitrate and nitrite free and as such meets most basic Asian vehicle OEM chemistry requirements.
- Phosphate free which meets most basic European OEM chemistry requirements.
- Excellent wet sleeve liner cavitation protection as determined via the Deere and Company Engine Cavitation Test.
- Compatible with nitrite and molybdate corrosion inhibitor chemistry in SCAs.
- Compatible with other similarly formulated OAT engine coolant technology.
- Provides appropriate corrosion protection to all coolant system metals including copper, solder, brass, steel, cast iron and aluminium.
- Excellent shelf stability, five years.
- Long Life-OAT typically provides up to five years, 250,000km when used during complete drain and fill.

Applications

Shell Long Life-OAT Antifreeze/Coolant Concentrate is suitable for use in all passenger cars, 4WDs, and light utility vehicles. The product can also be used in diesel passenger cars and medium and heavy road transport vehicles.

Before using any coolant, please ensure that you have consulted your automobile owner's manual and your automobile manufacturer's recommendations prior to use.

Shell Long Life-OAT Antifreeze/Coolant Concentrate is compatible with Supplemental Coolant Additives (SCA) required by some heavy duty OEMs.

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Shell Long Life-OAT Antifreeze/Coolant Concentrate

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Product Dilution Recommendations

The best dilution for most applications is 1 part coolant to 1 part water. The product may be diluted with water in ratio of 1 part Long Life-OAT to 2 parts water (33% inhibited glycol coolant solution) up to 3 parts Long Life-OAT to 2 parts water (60% inhibited glycol coolant solution).

Over-dosing will impact freeze protection or under-dosing (adding too much water to the coolant system without sufficient corrosion inhibitor) **will** create corrosion performance issues in any engine coolant system. Do not dilute this product with more than 66% water.

Required freeze point level should be considered in determining appropriate dilution for engine coolant.

Only use good quality water (soft or demineralised).

Specifications, Approvals and Recommendations

Shell Long Life-OAT Antifreeze/Coolant Concentrate (when pre-diluted under the guidelines described above) meets the performance requirements of the following industry and OEM engine coolant specifications:

ASTM	D3306/D4985
Ford	WSS-M97B44-D
GM	1825M/1899M/6277M
JIS	K 2234
AS/NZ	2108.1:1997
SAE	J1034/J1941
Nissan	NES 5059 LLC
VW	VW/AUDI/PORSCHE TL 774D
US Federal	A-A-870-A
AFNOR	NFR 15-601

Typical Physical Characteristics

Shell Long Life-OAT Antifreeze/Coolant Concentrate				
Colour				Violet
pH	50%		ASTM D 1287	7.8–8.5
Reserve Alkalinity	ml 0.1N HCl		ASTM D 1121	3.0 minimum
Specific Gravity	20°C		ASTM D 1122	1.110–1.135
Freeze Point	50% by volume		ASTM D 1177	–37°C
Foaming Properties	Volume	ml	ASTM D 1881	50 maximum
	Break Time	sec.	ASTM D 1881	5 maximum
Flash Point		°C	ASTM D 92	116°C minimum
Ash Content	% w/w		ASTM D 1119	5.0 maximum
Chloride	ppm		ASTM D 3634	25 maximum

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Multi-Vehicle Coolant/Antifreeze 33/67

Shell Multi-Vehicle Antifreeze and Coolant 33/67 is a premium quality, pre-diluted antifreeze/coolant that has been tested to be chemically and corrosion protection compatible with all automotive and light duty truck antifreeze/coolant products available in the market today. When used in a flush and refill service of the cooling system, the product will typically provide five years, or 240,000 kilometers of service (which ever occurs first). Shell Multi-Vehicle Antifreeze and Coolant not only guards against freezing and boil-over, it also provides critical protection against corrosion forming on system components, including aluminium.

Performance Features

- Suitable for all makes and models of passenger cars and light duty trucks requiring the use of an OAT coolant (check specific OEM requirements prior to use to ensure the best fit).
- Typically provides up to five years/240,000 kilometers service life when used during complete drain and fill.
- Excellent protection during high operating temperatures.
- Protects against water pump cavitation.
- Protects against corrosion.
- Green colour is compatible with other green and yellow coolants. Use with orange, red or violet/purple coolants may produce an unusual colour that does not affect corrosion protection.

Applications

Shell Multi-Vehicle Antifreeze and Coolant 33/67 is recommended for all automotive and light duty truck cooling systems not requiring the use of SCA's, regardless of colour. When used as is (pre-diluted 33/67 ratio of antifreeze to deionized water), the solution will provide protection over a temperature range of –18°C to +124°C with a system using a 15-psi radiator cap.

Specifications, Approvals and Recommendations

Shell Multi-Vehicle Antifreeze and Coolant 33/67 meets or exceeds ASTM D-3306 and JIS K 2234, and has been evaluated against:

- ASTM D-4340 Hot Service Aluminum Protection
- ASTM D-1384 Corrosion Protection
- ASTM D-2809 Water Pump Cavitation
- ASTM D-1881 Foaming Characteristics
- ASTM D-2570 Metal Protection

Recommended Applications

- General Motors
- Ford
- Honda
- Chrysler
- Mercedes-Benz
- Toyota
- VW
- Nissan
- Hyundai
- Provides corrosion protection in mixtures with all major coolant types for service fill (colour of product may be affected).

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Shell Multi-Vehicle Extended Life Coolant/Antifreeze 33/67

…continued

Typical Physical Characteristics

Shell Multi-Vehicle Coolant/Antifreeze Concentrate		
Colour and Odor	Visual	Green; Characteristic odor
Specific Gravity, 60/60 °F	ASTM D 1122	1.06—1.09
pH, 50% Solution	ASTM D 1287	8.3
Freeze Pt., as is, °C	ASTM D 1177	–18 oC
Boiling Point, °C	ASTM D 1120	+106 oC
Flash Point, °C	ASTM D-92	None
Auto Finish Effect	ASTM D 1882	No Effect
Ash Content, weight %	ASTM D 1119	0.399
Reserve Alkalinity, mL	ASTM D 1121	1.6
Foaming Tendencies	ASTM D 1881	30 ml max, <1 sec break time

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell Multi-Vehicle Coolant/Antifreeze Concentrate

Shell Multi-Vehicle Antifreeze and Coolant Concentrate is a premium quality antifreeze/coolant that has been tested to be chemically and corrosion protection compatible with all automotive and light duty truck antifreeze/coolant products available in the market today. When used in a flush and refill service of the cooling system, the product will typically provide five years, or 240,000 kilometers of service (which ever occurs first). Shell Multi-Vehicle Antifreeze and Coolant not only guards against freezing and boil-over, it also provides critical protection against corrosion forming on system components, including aluminium.

Performance Features

- Suitable for all makes and models of passenger cars and light duty trucks requiring the use of a conventional or hybrid coolant (check specific OEM requirements prior to use to ensure the best fit).
- Typically provides up to five years/240,000 kilometers service life when used during complete drain and fill.
- Excellent protection during high operating temperatures.
- Protects against water pump cavitation.
- Protects against corrosion.
- Green colour is compatible with other green and yellow coolants. Use with orange, red or violet/purple coolants may produce an unusual colour that does not affect corrosion protection.

Applications

- Shell Multi-Vehicle Antifreeze and Coolant Concentrate is recommended for all automotive and light duty truck cooling systems not requiring the use of SCA's, regardless of colour.
- Product requres dilution prior to use.
- The solution will provide protection over a temperature range of –37°C to +125°C with a system using a 15-psi radiator cap and a 50:50 dilution with high quality water.

Specifications, Approvals and Recommendations

Shell Multi-Vehicle Antifreeze and Coolant Concentrate meets or exceeds ASTM D-3306 and JIS K 2234, and has been evaluated against:

- ASTM D-4340 Hot Service Aluminum Protection
- ASTM D-1384 Corrosion Protection
- ASTM D-2809 Water Pump Cavitation
- ASTM D-1881 Foaming Characteristics
- ASTM D-2570 Metal Protection

Recommended Applications

- General Motors
- Ford
- Honda
- Chrysler
- Mercedes-Benz
- Toyota
- VW
- Nissan
- Hyundai
- Provides corrosion protection in mixtures with all major coolant types for service fill (colour of product may be affected)

Product requires dilution with high quality water (de-ionized or distilled preferred) prior to use. Do not use less than 33% water (1 parts water to 2 parts coolant) or more than 67% water (2 parts water to 1 part coolant) or corrosion and freeze protection loss will occur.

Poor dilution water quality can impact performance.

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Shell Multi-Vehicle Coolant/Antifreeze Concentrate

…continued

Typical Physical Characteristics

Shell Multi-Vehicle Coolant/Antifreeze Concentrate		
Colour and Odor	Visual	Green; characteristic odor
Specific Gravity 60/60°F	ASTM D 1122	1.122
pH. 50% with water, °C	ASTM D 1287	8.3
Freeze Pt., 50% with water, °C	ASTM D 1177	–18
Boiling Point, °C	ASTM D 1120	+173
Auto Finish Effect	ASTM D 1882	No effect
Ash Content, weight %	ASTM D 1119	0.798
Reserve Alkalinity, ml	ASTM D 1121	3.0
Foaming Tendencies	ASTM D 1881	30ml max, <1 sec. break time

Cooling System Capacity

Litres	**Litres of Shell Multi-Vehicle Coolant/Antifreeze Concentrate *required for protection to temperature (°C) shown***							
	3	**4**	**5**	**6**	**7**	**8**	**9**	**10**
8	–21	–37						
9	–18	–29	–45					
10		–24	–37					
11		–21	–30	–44				
12		–18	–26	–37	–49			
13			–23	–32	–43			
14			–21	–28	–37	–48		
15			–18	–24	–32	–42	–52	
16				–22	–28	–37	–47	
17				–20	–26	–33	–41	–50
18				–18	–23	–29	–37	–46
19					–22	–27	–33	–41

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell 2T

2-stroke engine oil

Shell 2T is a quality oil specifically blended for all standard 2-stroke gasoline engines.
Based on a high viscosity index mineral oil, it contains carefully selected additives to help provide long and trouble-free performance.

Performance Features

- Reliable and consistent performance.
- Self-mixing with leaded and unleaded petrol.

Application

Standard two-stroke engines with oil injection or premix systems

- For use in many standard 2-stroke small engine applications including various types of lawn mowers, chainsaws, garden equipment, small generators and small inboard engines.
- Shell 2T should not be used in outboard engines. The appropriate Nautilus Oil is recommended for this application.

Specifications, Approvals and Recommendations

Meets requirements of JASO FA (obsolete)

'Petroil' Mixture Systems

In engines lubricated by 'petroil' mixture systems, the engine manufacturers' recommended fuel/oil ratios should be strictly observed.

Typical Physical Characteristics

Shell 2T			Undiluted	Diluted
Kinematic Viscosity	@ 40°C	cSt	98.0	26.0
	@ 100°C	cSt	11.0.	4.4
Viscosity Index			102	–
Density	@ 15°C	kg/l	0.892	0.872
Flash Point		°C	246	98
Pour Point		°C	–9	–27
Total Base Number		KOH/g	201	1.8
Sulphated Ash			0.27	0.23

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Shell 4T

4-stroke engine oil

Shell 4T is a quality gasoline engine oil for small 4-stroke engines and gearbox/transmission systems of either 2 or 4-stroke motorcycles.

Performance Features

Shell 4T is formulated from highly refined high viscosity index base oils. It contains additives carefully selected to promote excellent piston and piston ring cleanliness, at the same time controlling oxidation and the harmful byproducts of combustion.

Shell 4T is formulated to provide the following benefits:

- Reduce engine deposits.
- Resistance to oil oxidation.
- Protection of components against wear.
- Resistance to rust and corrosion.
- Good gearbox performance without clutch slippage.

Applications

- Small 4-stroke motorcycle engines, such as lawnmowers, garden trimmers, edgers, bar mowers and cultivators.
- Gearbox/transmission systems of 2-stroke and 4-stroke motorcycles.

Specifications, Approvals and Recommendations

Shell 4T meets the following performance specifications: API SF

Typical Physical Characteristics

Shell 4T			30
Kinematic Viscosity	@ 40°C	cSt	91.73
	@ 100°C	cSt	10.84
Viscosity Index			102
Density	@ 15°C	kg/l	0.892
Flash Point		°C	222
Pour Point			–9

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

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