

SHELL CORENA

AIR COMPRESSOR OILS

The Shell Corena range of air compressor oils is designed to help make it easy for equipment operators to select the Shell oil that will best deliver value to their operations through enhanced wear protection, long oil life and high system efficiency.

INCREASINGLY EFFICIENT PROTECTION

ADVANCED TIER 4
PREMIUM TIER 3
MAIN LINE TIER 2

THE SHELL CORENA 'R' RANGE

Rotary vane and screw air compressor oils for use in stationary and mobile air compressors

Shell Corena S4 R

SYNTHETIC

- Extra long life
- Improved efficiency
- Severe applications



Formulated for better protection, longer oil life and better system efficiency



Shell Corena S3 R

- Long life
- High efficiency



PRODUCT-NAME SUFFIX KEY

- P** = High pressure/reciprocating (piston) air compressors
R = Rotary vane and screw air compressors

THE SHELL CORENA 'P' RANGE

Reciprocating (piston) air compressor oils for safe and reliable operation in demanding high-pressure applications

Shell Corena S4 P

SYNTHETIC

- Extra long life
- Improved efficiency
- Severe applications



Formulated for better protection, longer oil life and better system efficiency



Shell Corena S2 P

- Reliable protection
- Standard life applications



APPLICATION ICON KEY

- Rotary vane and screw air compressors
- Factory/machine applications
- Mobile air compressors
- High temperature
- Reciprocating (piston) air compressors

OIL PRODUCT	REPLACEMENT PRODUCT	PERFORMANCE FEATURES	APPLICATIONS
Shell Corena AS	Shell Corena S4 R 46, 68	<ul style="list-style-type: none"> ■ Extra long life ■ System efficiency ■ Severe applications 	<ul style="list-style-type: none"> ■ Rotary vane and screw air compressors ■ Factory/machine applications ■ Mobile air compressors ■ High temperature
Shell Corena S	Shell Corena S3 R 46, 68	<ul style="list-style-type: none"> ■ Long life ■ System efficiency 	<ul style="list-style-type: none"> ■ Rotary vane and screw air compressors ■ Factory/machine applications ■ Mobile air compressors
Shell Corena AP	Shell Corena S4 P 68, 100	<ul style="list-style-type: none"> ■ Extra long life ■ System efficiency ■ Severe applications 	<ul style="list-style-type: none"> ■ Factory/machine applications ■ Reciprocating (piston) air compressors ■ High temperature
Shell Corena P	Shell Corena S2 P 68, 100, 150	<ul style="list-style-type: none"> ■ Reliable protection ■ Standard life applications ■ Severe applications 	<ul style="list-style-type: none"> ■ Factory/machine applications ■ Reciprocating (piston) air compressors

SHELL CORENA S2 P

RECIPROCATING (PISTON) AIR COMPRESSOR OIL

PREVIOUSLY SHELL CORENA P

DESIGNED TO MEET CHALLENGES

Shell Corena S2 P is a premium quality reciprocating air compressor lubricant. It is based on a blend of specially selected base oils to provide a level of performance approaching that of synthetic oils.

PERFORMANCE FEATURES

LONG OIL LIFE-MAINTENANCE SAVING

- Allows the service interval between valve and piston maintenance to be extended over normal service practices due to low deposits forming tendencies. Compressors can be kept in service for much longer periods, operating at a consistently high level of efficiency.

ENHANCED AIR-LINES SAFETY

- In discharge air-lines, the combination of rust particles, dispersed in carbonaceous deposits, coupled with heat from recently compressed air, can cause an exothermic reaction leading to the possibility of fires and explosion. Shell Corena S2 P helps to minimise the likelihood of this danger arising.

MAINTENANCE SYSTEM EFFICIENCY

- Resistant to the formation of carbon deposits and lacquer on valves and piston crowns, caused by the by-products of corrosion, such as ferric oxides and hydroxides, at high working temperatures and pressures. Such deposits can cause serious damage, lower compressor efficiency and increase maintenance costs.
- Shell Corena S2 P separates readily from water allowing excess water to be drained from the oil circulation system, thus preventing accelerated corrosion and a reduction in lubrication efficiency. This also helps to separate oil from condensate in oil/water separators and drier units.

OUTSTANDING WEAR PROTECTION

- Effectively protects all metal surfaces from corrosion. Protects all sensitive machinery parts (e.g. housings, valves, bearings, from wear to help prolong the service intervals).

APPLICATIONS

RECIPROCATING AIR COMPRESSORS

- Industrial reciprocating air compressors operating with air discharge temperatures of up to 220°C.

BREATHING AIR COMPRESSORS

- Shell Corena S2 P may be used in breathing air compressors, provided subsidiary clean-up apparatus is used to ensure that the air produced is fit for breathing.

COMPATIBILITY AND MISCIBILITY

SEAL COMPATIBILITY

Shell Corena S2 P is compatible with all sealing materials commonly used in air compressors.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

- DIN 51506 VDL
- ISO 6743-3:2003 DAA Normal Duty.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	68	100	150
Kinematic Viscosity (ASTM D 445) @ 40°C mm ² /s	68	100	155
@ 100°C mm ² /s	7.8	9.2	12.1
Density @ 15°C kg/m ³	883	899	902
Flash Point (COC) °C (ASTM D 92)	235	240	240
Pour Point °C (ASTM D 97)	-33	-33	-30
Neutralisation Value mg KOH/g	0.3	0.3	0.3
Sulphated Ash % m	0.06	0.06	0.06
Oxidation Stability (delta-CCR) % m	1.8	2	2.3
Properties of the distillation residues 20% (DIN 51562) Carbon residue (CCR) %m	0.3	0.3	0.3
Rust Prevention Properties (steel) degrees (ASTM D 665-B)	Pass	Pass	Pass
Water Stability @ 54°C min (ASTM D 1401) @ 82°C min	30	-	-
	-	20	20

SHELL CORENA S3 R

PREMIUM ROTARY AIR COMPRESSOR OIL

PREVIOUSLY SHELL CORENA S

DESIGNED TO MEET CHALLENGES

Shell Corena S3 R is a premium quality lubricant developed for the lubrication of rotary sliding vane and screw air compressors. It is based on a blend of selected solvent refined base oils and carefully chosen additives.

PERFORMANCE FEATURES

LONG OIL LIFE-MAINTENANCE SAVING

- Shell Corena S3 R will allow for significant increases in oil drain intervals (compared to basic mineral compressor oil), where allowed by manufacturers – up to a maximum of 6,000 hours, even when operating at a continuous maximum discharge air temperature of up to 100°C.
- Resists formation of carbon deposits in sliding vane slots enabling them to move freely. Also resists deposit formation on rotating components of screw compressors. As a consequence high levels of compressor efficiency can be maintained for long periods in both types of compressor.
- Depending on intake air quality, duty cycle and ambient conditions, especially hot and humid type climates as found in the Asian and Pacific regions, a reduced oil drain period is recommended.

MAINTAINING SYSTEM EFFICIENCY

- The careful selection of base oils and additives provides rapid air release without excessive foaming to give excellent operation even under cycling conditions.
- The product is easily separated from water, keeping the system in good condition even when contaminated with water.
- Shell Corena S3 R is formulated to reduce sludge and deposit formation from the thermal degradation processes, even at very high temperatures, maintaining compressor efficiency.
- Coupled with the oil's long life capability is its ability to maintain internal surface cleanliness in service. This is important to maintain high levels of performance for the compressor and separator/coalescer.

OUTSTANDING WEAR PROTECTION

- Effectively protects all metal surfaces from corrosion. Protects all sensitive machinery parts (e.g. gears, screws, bearings, from wear to help prolong the service intervals).

APPLICATIONS

ROTARY SLIDING VANE AIR COMPRESSORS

- Oil flooded or oil injected, single or two-stage compressors, operating at pressures of up to 10 bar and with air discharge temperatures of up to 100°C.

SCREW AIR COMPRESSORS

- Oil flooded or oil injected, single or two-stage compressors, operating at pressures of up to 20 bar and with air discharge temperatures of up to 100°C.

COMPATIBILITY AND MISCIBILITY

SEAL COMPATIBILITY

- Shell Corena S3 R is compatible with all sealing materials commonly used in air compressors.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

- ISO 6743-3A-DAJ.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	46	68
Kinematic Viscosity (ASTM D 445) @ 40°C mm ² /s	46	68
@ 100°C mm ² /s	6.9	8.9
Density @ 15°C kg/m ³ (ASTM D 1298)	868	873
Flash Point °C (COC) (ASTM D 92)	230	248
Pour Point °C (ASTM D 97)	-30	-30
Water Separability @ 54°C min. (ASTM D 1401)	15	15

SHELL CORENA S4 R

ADVANCED SYNTHETIC ROTARY AIR COMPRESSOR OIL

PREVIOUSLY SHELL CORENA AS

Shell Corena S4 R is an advanced air compressor lubricant using unique additive technology, capable of giving outstanding performance in oil-flooded air compressors of screw or vane design. Based on specially selected PAO base fluids, Shell Corena S4 R provides long oil life and effective lubrication in severe applications.

PERFORMANCE FEATURES

LONG OIL LIFE-MAINTENANCE SAVING

- Shell Corena S4 R will allow for significant increases in oil drain intervals (compared to mineral compressor oil) with oil analysis, where allowed by manufacturers – up to a maximum of 12,000 hours, even when operating at a continuous maximum discharge air temperature in excess of 100°C. Depending on intake air quality, duty cycle and ambient conditions, especially in hot and humid type climates as found in the Asian and Pacific regions, a reduced oil drain period is recommended.
- Shell Corena S4 R is formulated to reduce sludge and deposit formation from thermal degradation processes, even at very high temperatures, maintaining compressor efficiency.
- Reduced change of viscosity with change in operating temperature in comparison to conventional mineral oil-based products. This provides low starting viscosity together with higher viscosity at operating temperature.

OUTSTANDING RESISTANCE TO OXIDATION

- Shell Corena S4 R is designed to resist the formation of carbon deposits and the formation of sludge in all moving parts of sliding vane and screw compressors, helping to ensure maximum output of the machine throughout the service interval.

OUTSTANDING WEAR PROTECTION

- Effectively protects all metal surfaces from corrosion. Protects all sensitive machinery parts (e.g. gears, screws, bearings, from wear to help prolong the service intervals).

MAINTAINING SYSTEM EFFICIENCY

- Resulting in a low foaming tendency and very good air release and water shedding properties. This helps to separate oil from air and water in two-stage compressor intercoolers, oil/water separators and drier units.
- The product is easily separated from water, keeping the system in good condition even when contaminated with water.
- Shell Corena S4 R has low volatility and oil carry over to provide reduced oil top-up requirements in combination with increased air quality.

APPLICATIONS

ROTARY SLIDING VANE AND SCREW AIR COMPRESSORS

- Oil flooded/oil-injected single and two-stage compressors, in particular those operating with higher output pressures of up to 25 bar and with air discharge temperatures higher than 100°C (including intermittent operation under these conditions).

EQUIPMENT RUNNING UNDER ARDUOUS CONDITIONS

- May also be used where exceptionally high ambient temperatures are found, when the oil temperature cannot be reduced to normal levels.

ABB TURBOCHARGERS

- Recommended for use in ABB turbochargers fitted to low and medium speed diesel engines used in marine and power generation applications.

COMPATIBILITY AND MISCIBILITY

MISCIBILITY

- Shell Corena S4 R is fully miscible with mineral oils, although dilution with mineral lubricants will markedly reduce its performance. Care must be taken to ensure that Shell Corena S4 R is not mixed with other types of synthetic fluids.

SEAL COMPATIBILITY

- Shell Corena S4 R is compatible with all sealing materials commonly used in air compressors.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

- ABB for use in VTR turbochargers, with a maximum oil change interval of 5,000 hours (HZTL 90617, List 3).
- ISO 6743-3A-DAJ.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	46	68
Kinematic Viscosity (ASTM D 445)		
@ 40°C mm ² /s	46	68
@ 100°C mm ² /s	7.7	10.2
Viscosity Index (ISO 2909)	135	135
Density @ 15°C kg/m ³ (ASTM 1298)	843	848
Flash Point °C (COC) (ASTM D 92)	230	248
Pour Point °C (ASTM D 97)	-45	-45
Air Release minutes	2	4
Rust Prevention Properties (ASTM D 665-B)	Pass	Pass
Water Separability mins (ASTM D 1401)	10	10
Rotating Pressure Vessel Oxidation mins (ASTM D 2272)	2200	2200
FZG Load Carrying Test	>12	>12

SHELL CORENA S4 P

ADVANCED SYNTHETIC RECIPROCATING (PISTON) AIR COMPRESSOR OIL

PREVIOUSLY SHELL CORENA AP

DESIGNED TO MEET CHALLENGES

Shell Corena S4 P is an advanced reciprocating air compressor lubricant and is based on specially selected synthetic ester fluids. It incorporates the latest additive technology to provide outstanding performance.

PERFORMANCE FEATURES

LONG OIL LIFE-MAINTENANCE SAVING

- Developed specifically for heavy-duty reciprocating air compressors. This includes reciprocating air compressors subjected to overloading, intermittent or continuous operation. Shell Corena S4 P is designed to provide safe, reliable and effective lubrication for extended service periods where mineral compressor lubricants are unsatisfactory.
- The extreme low tendency for deposit build-up ensures continued high compressor performance over long periods. It enables the normal valve maintenance period, typically between 250 and 1,000 hours of operation using conventional mineral oils, to be extended to 2,000, or even 4,000 hours.

ENHANCED AIR-LINE SAFETY

- The absence of deposit formation has a very important safety related benefit. In discharge air-lines, the combination of rust particles, dispersed in carbonaceous deposits, coupled with heat from recently compressed air, can cause an exothermic reaction leading to the possibility of fires and explosion. Shell Corena S4 P helps to minimise the likelihood of this danger arising.

OUTSTANDING WEAR PROTECTION

- Effectively protects all metal surfaces from corrosion. Protects all sensitive machinery parts (e.g. gears, screws, bearings, from wear to help and prolong the service intervals).

MAINTAINING SYSTEM EFFICIENCY

- Resistant to the formation of carbon deposits and lacquer on valves and piston crowns, caused by the by-products of corrosion such as ferric oxides and hydroxides, at high working temperatures and pressures. Such deposits can cause serious damage, lower compressor efficiency and increase maintenance costs.
- Separates readily from water preventing accelerated corrosion and facilitating separation from condensate.

APPLICATIONS

RECIPROCATING AIR COMPRESSORS

- All industrial reciprocating air compressors, in particular up to and above air discharge temperatures of 220°C with continuous high delivery pressures.

BREATHING AIR COMPRESSORS

- Shell Corena S4 P may be used in breathing air compressors, provided subsidiary clean-up apparatus is used to ensure that the air produced is fit for breathing.

COMPATIBILITY AND MISCIBILITY

SEAL COMPATIBILITY

- Shell Corena S4 P, in common with other ester-based lubricants, is not compatible with all seal materials, and some older compressors may need to have the seals changed before they can be run on the new grades.

MISCIBILITY

- Shell Corena S4 P oils are fully miscible with mineral oils, although dilution with mineral lubricants will markedly reduce its performance.

COMPATIBILITY GUIDE

Acceptable	High nitrile content (SE85)	>36% acrylonitrile
Majority Acceptable	Medium nitrile content (SE70)	30–36% acrylonitrile
Not Acceptable	Low nitrile content	<30% acrylonitrile

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

- DIN 51506 VDL
- ISO/DP 6521-L-DAB – medium duty
- ISO 6743-3:2003 DAB – severe duty
- EN 12021.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	68	100
Kinematic Viscosity (ASTM D 445) @ 40°C mm ² /s	68	100
@ 100°C mm ² /s	8.5	10.2
Density @ 15°C kg/m ³ (ASTM D 445)	990	988
Flash Point °C (COC) (ASTM D 92)	250	260
Pour Point °C (ASTM D 97)	–51	–39
Sulphated Ash %m (DIN 51575)	<0.02	0.02
Rust Prevention Properties (24 hours)	Pass	Pass
Copper Corrosion (100°C / 3 hours) (ASTM D 130)	1b	1b
Water Separability @ 54°C min. (ASTM D 1401)	30	–
@ 82°C min.	–	25

WANT TO INCREASE PRODUCTIVITY?



Shell Corena S4 R

ADVANCED SYNTHETIC OIL FOR SLIDING-VANE
AND SCREW ROTARY AIR COMPRESSORS

- Enhanced compressor efficiency and availability for increased productivity.
- Designed to extend oil and equipment life.
- Keeps high-temperature and high-pressure equipment working efficiently for longer.

Part of the Shell Corena air compressor oil range
– designed to help you make the right choice

DESIGNED TO MEET CHALLENGES