

Aircol PD

Air Compressor Lubricants

Description

Castrol Aircol™ PD oils are a range of compressor lubricants, based upon highly refined mineral oils, which are intended for the lubrication of both reciprocating and rotary air compressors.

Application

Aircol™ PD grades are ashless oils recommended for the lubrication of rotors, bearings and gears in rotary compressors, especially the oil flooded screw type with lubricant drain cycles of up to 2000 hours under normal use. Normal use in screw type compressors is defined by a maximum air discharge temperature \leq 100°C as defined by ISO 6743-3:2003.

Aircol™ PD can be used for either normal or severe duty lubrication of reciprocating and rotary drip-feed air compressors, as defined by ISO 6743.

Normal duty is described as:-

- discharge temperatures \leq 165°C
- differential pressures \leq 2.5 MPa (25 bar)
- discharge pressures \leq 7.0 MPa (70 bar).

Severe Duty is described as:-

- discharge temperatures $>$ 165°C
- differential pressures $>$ 2.5 MPa (25 bar)
- discharge pressures $>$ 7.0 MPa (70 bar)

Aircol™ PD compressor oils exhibit low carbon forming tendencies and meet the requirements of the DIN 51506 VDL classification for reciprocating compressors having air discharge temperatures up to 220°C.

Selection of the required viscosity grade should be based upon the compressor manufacturers' recommendation.

However as a general guide Aircol PD 32 and 46 are suitable for oil flooded rotary compressors, whereas Aircol PD 68 and 100 would be selected for lubricating the crankcase and cylinders of reciprocating compressors. Aircol™ PD 150 is recommended for sliding-vane compressors, or for reciprocating units at high ambient temperatures.

The Aircol™ PD range is fully compatible with nitrile, silicone and fluoropolymer seal materials.

Aircol PD is classified as follows:

- DIN 51506 classification - VDL
- ISO 6743/3 - DAA and DAB for reciprocating air compressors, DAG for rotary air compressors

Aircol™ PD meets the requirements (for appropriate viscosity grade) of major compressor manufacturers such as Atlas Copco, Champion, Sullair, Compair/Broomwade, Ingersoll-Rand, Kaeser and Bauer.

Advantages

- Good water separation characteristics allows condensation to readily separate from the oil, minimising the risk of emulsions which could block the oil separator element.
- Fully inhibited against corrosion which enables protection even when operating under humid conditions.
- Good thermal stability, low volatility and low carbon formation reduces the risk of fire and explosion and leads to a longer operating life (up to 2000 hours).
- Low deposit forming tendencies extends oil change intervals and provides longer air filter life which contributes to a reduction in maintenance costs.
- Excellent coalescing properties mean little carry over of oil in the air stream.

Typical Characteristics

Name	Method	Units	68	100	150
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m ³	880	890	890
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm ² /s	68	100	150
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	8.6	11.4	14.5
Viscosity Index	ISO 2909 / ASTM D2270	-	100	98	98
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	30/0	30/0	30/0
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	232/ 450	253/ 487	256/ 493
Pour Point	ISO 3016 / ASTM D97	°C/°F	-21/-6	-12/10	-9/16
Water Separation @ 54°C / 129°F (40/37/3)	ISO 6614 / ASTM D1401	min	15	-	-
Water Separation @ 82°C / 180°F (40/37/3)	ISO 6614 / ASTM D1401	min	-	20	20
Rust test - synthetic seawater (24 hrs)	ISO 7120 / ASTM D665B	-	Pass	Pass	Pass
Carbon residue - Conradson test - after air ageing	DIN 51352-2	%wt	0.7	<3.0	<3.0
Oxidation Stability - Rotating Pressure Vessel test	ASTM D2272 / IP 229	min	270	-	-

Subject to usual manufacturing tolerances.

Additional Information

Castrol Aircol™ PD compressor oils are available in a wide range of viscosities, to suit different types of compressors operating in varying ambient temperatures. Selection of the required viscosity grade should be based upon the compressor manufacturers recommendations for the appropriate ambient temperature range, which will have been chosen to provide the best compromise between maintaining a fluid film between the working surface and minimising the amount of power absorbed by fluid friction in this oil film.

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