

High Viscosity Sealing Oils

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What are Apiezon J & K oils?

Apiezon J and K oils are high viscosity sealing oils which can be used in a variety of applications. These very high viscosities mean the oils are well suited for rotary glands in particular, a type of seal where the turning shaft protrudes through the inner diameter of the O-ring.

When should I use Apiezon J and K oils?

These oils are designed for use wherever a high viscosity oil is needed for sealing purposes. With low vapour pressures, these products can be used with confidence under vacuum environments and can provide an effective vacuum seal. The main difference between the two products is in the higher viscosity of K oil compared to J oil; if a thicker oil is needed then K oil is the preferred choice. These oils could also be used to seal fragile glassware in vibrational applications; however, they are liquid and should only be used in applications where the oil would have nowhere to flow to. We also offer a range of waxes which can be used in vibrational applications.

Easily removed

To remove the oil after use, scrape away larger amounts. Heat can be used to decrease the viscosity and make removal easier. Any deposits can then be dissolved away by using any aromatic hydrocarbon solvent (toluene, xylene), or removed using a vapour degreasing bath.

Apiezon sealing oils are not soluble in alcohols (ethanol, IPA) or ketones (acetone, MEK) so these cannot be used for cleaning.

What are the typical properties of Apiezon J and K Oils?

	Apiezon J Oil	Apiezon K Oil
Vapour pressure @ 20°C / 68°F, Torr	Approx. 8×10^{-9}	1×10^{-9}
Relative density @ 20°C / 68°F	0.95	0.94
Flash point, Cleveland Open Cup		
°C	> 350	> 350
°F	> 662	> 662
Fire point, Cleveland Open Cup		
°C	> 370	> 370
°F	> 698	> 698
Viscosity, kinematic, cSt		
@ 40°C / 104°F	3330	5710
@ 100°C / 212°F	107	177
Viscosity, dynamic, cSt @ 40°C / 104°F	3005	5160
Pour Point ASTM D97		
°C	-1	-1
°F	30	30
Thermal conductivity, W/mK	0.167	0.169
Specific heat @ 25°C/77°F		
cal/g	0.48	0.46
Joule/g	2.0	1.9

Compatibility

Apiezon J and K oils are silicone-free and are compatible with a wide range of O-ring materials including:

- ▶ Viton
- ▶ Silicone
- ▶ Nitrile (>30% nitrile content)
- ▶ Nylon
- ▶ Polyurethane
- ▶ Polyethylene
- ▶ Polypropylene

Due to their hydrocarbon base J & K oils are not compatible with:

- ▶ EPDM (ethylene propylene diene M-class rubber)
- ▶ EPR (ethylene propylene rubber)
- ▶ Butyl rubber
- ▶ PVC seals

Shelf life

The shelf life of J & K oils is ten years from date of manufacture, providing the product is in the original unopened packaging and has been stored at ambient (10 to 30°C) temperature.

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