AP101 GREASE

Anti-seize Vacuum Grease

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Introduction

Apiezon AP101 is an excellent general-purpose, hydrocarbon grease, which is intended for a variety of industrial and scientific applications.

The key features of AP101 are shown in the table opposite.

The secret to anti-seize

Apiezon AP101 contains PTFE, which provides superior anti-seize properties and long-lasting lubrication ensuring smooth operation of stopcocks and taps. Coupled with easy separation of ground or polished glass joints, AP101 is an excellent general purpose grease for laboratory use.

Apiezon AP101 anti-seize properties are not limited to laboratory or glassware use, and are equally effective when used on metal equipment which may be subject to seizure or corrosion.

A small amount of Apiezon AP101 on fastenings provides protection when exposed to corrosive environments. Instead of jamming solid the fastenings can be effortlessly removed.

Apiezon AP101 is also ideal for use as a critical lubricant and can be used in stressed bearings or under load.

Under vacuum

Apiezon AP101 exhibits good vacuum properties in the low to medium vacuum range. Within the scope of its optimum working temperatures AP101 can be used under vacuum conditions down to 10^{-6} torr.

For full information on the vapour pressure of AP101 please refer to the vapour pressure curve opposite.

Apiezon AP101

◆ Anti-seize properties
◆ Critical lubricant
◆ Silicone free
◆ Solvent/chemical resistance
◆ Wide temperature range
◆ Easily removed

Solvent and chemical resistant

The lithium stearate gel and PTFE in AP101 are insoluble in most solvents, ensuring that AP101 exhibits resistance to:-

- water
- alcohols
- ketones
- esters

Also AP101 resists chemical attack from:-

- aqueous acid and alkali solutions
- alcoholic alkali solutions
- corrosive gases

Silicone free

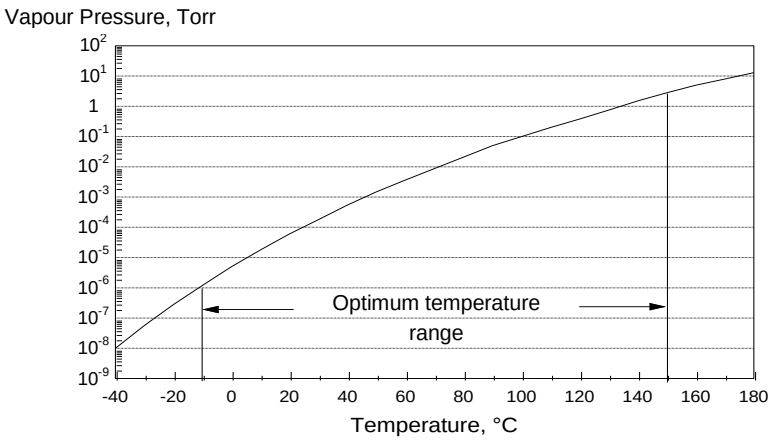
As a hydrocarbon based grease, Apiezon AP101 is highly resistant to "creep" or “carry over”, a phenomenon associated with silicone-based products. Silicone has a tendency to travel away from the area of application and contaminate adjacent surfaces.

The creep resistance of Apiezon AP101 benefits scientific users as it reduces sample contamination and the risk of interference in analytical techniques such as infra-red and mass spectrometry.

Silicone contamination is of particular concern in surface coating applications such as industrial paint or metal deposition processes, as trace amounts of silicone on surfaces prevent the adherence of paint and poor or incomplete coverage results. Likewise in semiconductor manufacture, yields can be severely affected by silicone contamination.

When using silicone-free Apiezon AP101 the problems associated with creep and contamination are avoided.

Vapour pressure over working temperature range



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Wide temperature range

AP101 is an excellent general purpose grease for sealing joints and can be used over a very wide range of temperatures, possessing its optimum consistency over the -15 to +150°C temperature range, but is useable down to -40°C and, for limited periods, up to +180°C.

"Gettering" action

Apiezon AP101 is manufactured from a unique feedstock containing a high proportion of branched and unsaturated hydrocarbons. These complex structures give AP101 a very high molecular weight and consequently strong powers of absorption, particularly for other hydrocarbon molecules.

Strong absorption properties ensure that Apiezon AP101 has a powerful "gettering" action, i.e. the power to absorb greasy or chemical impurities on metal and glass surfaces. This is of value in the electronics industry where scrupulous cleanliness is required.

AP101 has no contaminating effect on electrical equipment and is easily removed by hydrocarbon or chlorinated solvents, taking with it many trace impurities which are not removed by solvents alone.

Typical Properties

Typical working temperature range	*°C*	-40 to 180
	°F	-40 to 365
Dropping point - ASTM.D 566-02	*°C*	>200
	°F	>392
Vapour pressure @ 20°C / 68°F, Torr		$<10^{-5}$
Relative density @ 20°C / 68°F, Torr		0.981
Coefficient of expansion per °C over 20°C to 30°C		0.00066
Lubricity 4 Ball Test - ASTM.D 2596-97(2002)e1, kg		450

Easily removed

Apiezon AP101 is easily removed by wiping with a soft clean lint free cloth. Any residues of grease can be washed away with warm soapy water, by using any aromatic hydrocarbon solvent (toluene, xylene) or chlorinated hydrocarbons (trichloroethylene). For a more environmentally friendly solvent, we recommend Limonene.

Apiezon greases are not soluble in alcohols (ethanol, IPA) or ketones (acetone, MEK) so these cannot be used for cleaning. AP101 works when you want it to, but is easily removed when you don't.

Compatibility

Apiezon AP101 is compatible with a wide range of o-ring materials including:-

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

Due to its hydrocarbon base Apiezon AP101 is not compatible with:-

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

Shelf life

The shelf life of Apiezon AP101 is ten years from date of manufacture, providing the product is in the original unopened packaging and has been stored at ambient temperature.

Industry approvals

AP101 is highly regarded within the vacuum industry and has gained prestigious approvals from Marconi Radar and NATO.