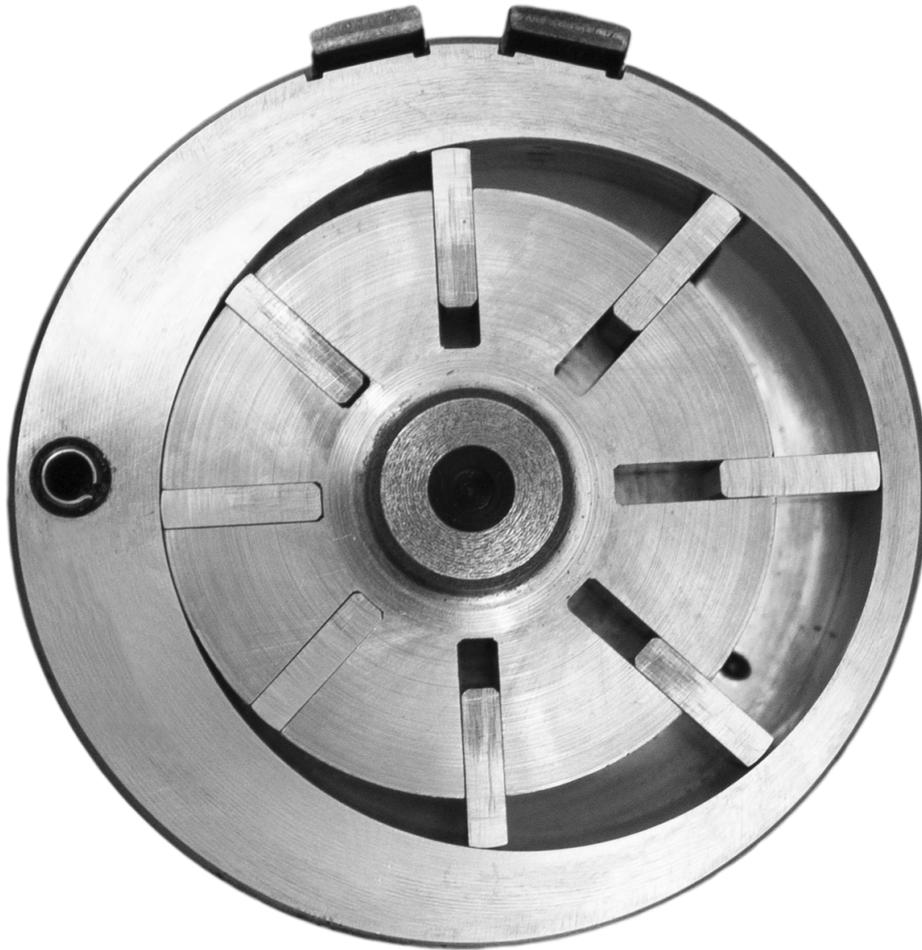


QUALITY LUBRICATES.



Anderol® Syncomp DE HSL 100

A newly launched high performance Diester based Hazard Label Free Reciprocating and Vane Compressor / Vacuum pump oil. Anderol® Syncomp DE HSL 100 is a BAM registered hazard label free diester vacuum oil. anderol.com

X Anderol®

QUALITY WORKS.

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SYNCOMP DE HSL 100

Sustainability and eco-friendliness is important, but it should not compromise on performance. Anderol B.V. has formulated a Hazard label free version of its best selling vacuum pump/ reciprocating and vane compressor oil, Anderol® 555.

Close partnership working with compressor and vacuum pump original equipment manufacturers (OEMs) has been crucial to the successful formulation of Anderol® Syncomp DE HSL 100 which meets the needs of the compressors and vacuum pumps whilst helping to lessen the environmental impact.



Label elements

The hazard label information can be found in a products Material Safety Data Sheet an on the packaging back label. It contains the product identifier / classification (**REGULATION (EC) No 1272/2008** for Chemicals), and may contain the hazard statements, appropriate precautionary statements and obligatory supplemental information and additional labelling.

Current Compressor/Vacuum pump oil

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling

EUH208 Contains N-1-naphthylaniline. May produce an allergic reaction.

New Anderol® Syncomp DE HSL 100

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

TEST RESULTS

THERMAL OXIDATION STABILITY

The compressor/ vacuum pump oil gets hot and it is exposed to high volumes of air. The heat and air combination increases the rate of lubricant degradation through oxidation. The oxidation stability of the oil is very important in relationship to oil service life and the formation of deposits. That is why the results of oxidation testing are essential. It is also necessary to test if the oil tends to oxidize in lacquer, sludge, carbon deposits and residue. Longer oil life and lower maintenance costs are the benefits of a lubricant with outstanding thermal oxidation stability. Thermal oxidation stability is tested with Thermal Gravimetric Analysis and Pressure Differential Scanning Calorimetry.

Thermal Gravimetric Analysis

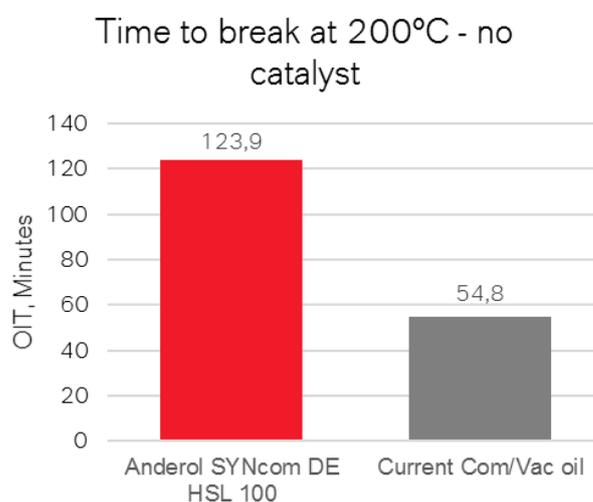
Thermal gravimetric analysis (TGA) is an analytical technique used to determine a material's thermal stability and its fraction of volatile components by monitoring the weight change that occurs as a specimen is heated. The new label free product Anderol[®] Syncomp DE HSL 100 not only has a higher onset temperature but shows less tendency to form deposit formations.

Sample	Onset Temperature (°C)	Residue at 500 °C (%)
Anderol [®] Syncomp DE HSL 100	301.77	3.49
Current PAO FG com/vac oil	295.88	4.67

Pressure Differential Scanning Calorimetry

The thermal oxidation stability P DSC test shows equally impressive results. High pressure differential scanning calorimetry is a thermal analytical method that allows for a fast and reliable determination of the thermal oxidation stability of the lubricant. The PDSC curve is used to determine the beginning of oxidative degradation. The time from the first exposure to air or oxygen, until the onset of the oxidation is called the oxidation induction time. The longer it takes until oxidation occurs the better the quality of the product.

The conditions are: 3-6 mg, 200°C heat rate 100°C / min, 500 psi air.



ANDEROL®

SYNCOMP DE HSL 100

BAM recommended

Safety investigations of Anderol® Syncomp DE HSL 100 were undertaken for vacuum pumps for oxygen at pressures up to 2 bar.

The determination of the ignition temperature is always necessary when the material is at temperatures above 60 °C. In the present case, the ignition temperature of Anderol® Syncomp DE HSL 100 was determined at 2 bar oxygen in order to characterize the material in terms of safety.

The ignition temperature is a safety parameter and indicates the temperature at which the material ignites by itself in the presence of oxygen without an ignition source. It is therefore decisive for the maximum operating temperature, which is usually set at 100 °C below the ignition temperature

Trial number	Oxygen start pressure [bar]	Oxygen pressure [bar]	Ignition temperature °C
1	1	2.3	212
2	1	2.3	209
3	1	2.4	222
4	1	2.3	205
5	1	2.3	207

Five trials were conducted where the average oxygen pressure was 2.3 bar, the average ignition temperature 211°C, and the temperature deviation was +- 7°C.

Based on the test results, Anderol® Syncomp DE HSL 100 is safe in gaseous oxygen under operating conditions of 100 °C at 2 bar.

Conclusion Anderol® Syncomp DE HSL 100

- Anderol® Syncomp DE HSL 100 has a very high thermal oxidation stability necessary for obtaining long oil life
- Equally important is the low deposits resulting in clean machine lubrication, which is clearly visible after several cycles
- A low pour point and high flash point means that the product can operate at a wide temperature range
- The product has excellent foam performances, low foam and very low air release
- Importantly because the product is BAM recommended it is an excellent vacuum oil suitable for safe working conditions
- Its competitive advantage is that only a very low number of Diester based products (especially label-free) are BAM registered



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Unless specified to the contrary, the values given have been established or standardized test specimens. The figures should be regarded as guide values and not as binding minimum values. Kindly note that the results refer exclusively to the specimens tested. Under certain conditions, the test results established can be affected to a considerable extent by the processing conditions and manufacturing process.

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