

PRODUCT SELECTION FOR COMPRESSOR OILS



Thermally stable oils, formulated for demanding applications

Use of compressors follows today's trends of all industrial equipment: extended oil lifetimes, reduced maintenance costs and downtime, more silent equipment delivering cleaner, hotter compressed gases.

The number one function of a compressor oil is to remove heat from compression. This is why thermo-oxidative stability and low coking propensity are key features of compressor oils. Other properties such as low volatility (to minimize oil carry over), water separation and air release (to facilitate removal of contaminants) are critical too.

23% of air compressors and 13% of gas compressors are currently based on synthetic esters.

Neopolyol esters remain the best option for the high performance requirements of the most severe applications, such as high pressure, high temperature compressors.

NYCO solutions include a range of superior performance synthetic neopolyol esters.

SYNTHETIC NEOPOLYOL ESTERS

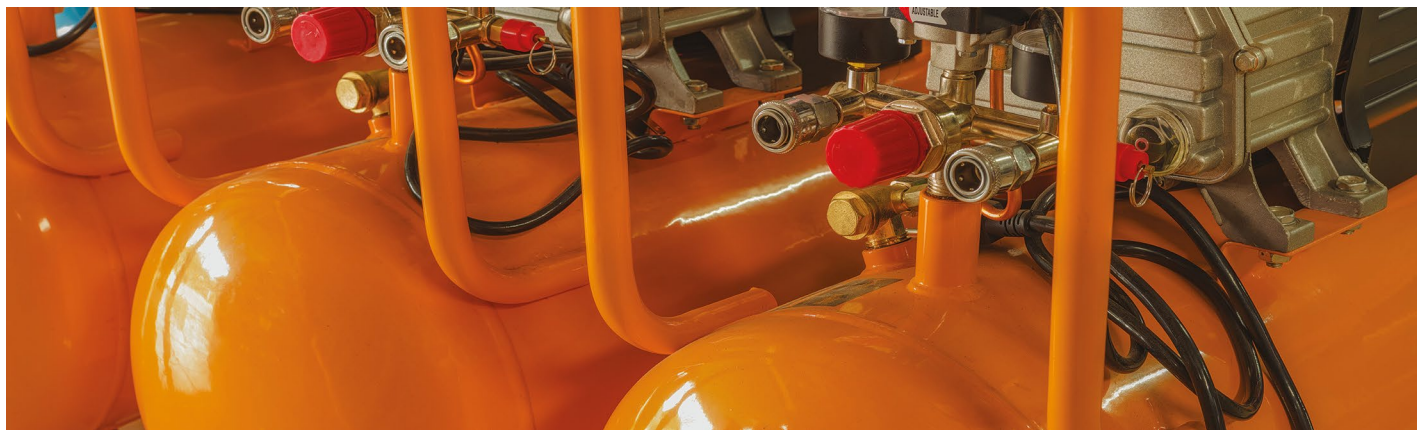
High performance, high temperature compressor oils exceeding DIN 51506 VD-L requirements and showing extended lifetimes (>16,000 h) can easily be formulated using neopolyol esters.

Such oils will demonstrate outstanding thermal stability and cleanliness features, and will improve energy efficiency.

Studies indicate that an average of 7.4% energy saving may be obtained on reciprocating compressors, and 9.3% on screw compressors, using synthetic esters. Oil consumption may also be reduced by up to 75% with neopolyol esters compared to conventional mineral oils.

ADVANTAGES AND BENEFITS

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|--|--|
| Superior resistance to thermo-oxidation | ➤ Extended oil lifetime |
| Very low deposit formation & excellent detergency features | ➤ Improved cleanliness and reduced fire or explosion hazards, lower maintenance costs and downtime |
| Low volatility | ➤ Reduced oil consumption and cleaner air |
| Good natural lubricity, friction modification | ➤ Better protection against wear, energy savings |



SYNTHETIC NEOPOLYOL ESTERS

REFERENCE	
Nycobase® 7300 Nycobase® 8103 Nycobase® 9300 Nycobase® 5750*	Low viscosity, low volatility, thermally stable neopolyol esters * May be used as a PAG / ester blend
Nycobase® 1040X Nycobase® 1060X	Branched neopolyol esters, showing outstanding oxidation stability, cleanliness and hydrolytic stability
Nycobase® 30409 FG Nycobase® 30401 FG	HX-1 certified low viscosity, low volatility, thermally stable neopolyol ester for incidental food contact applications
Nycobase® 32506 FG	HX-1 certified branched neopolyol ester, showing outstanding oxidation stability, cleanliness and hydrolytic stability for incidental food contact applications

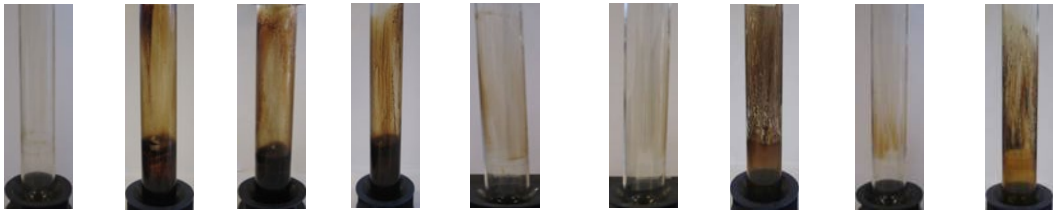
Typical properties

PRODUCT NAME	Viscosity @ 40°C mm ² /s	Viscosity @ 100°C mm ² /s	Viscosity Index	Pour Point °C	Flash Point °C
Nycobase® 7300	13.8	3.4	124	-66	235
Nycobase® 5750	24	5	140	-59	260
Nycobase® 1040X	94	10.2	88	-27	264
Nycobase® 1060X	245	19.6	92	-25	296
Nycobase® 30409 FG	21.2	4.6	141	-48	255
Nycobase® 30401 FG	20	4.5	143	-45	255
Nycobase® 32506 FG	380	25.3	89	-20	295


PERFORMANCE TESTS SUMMARY

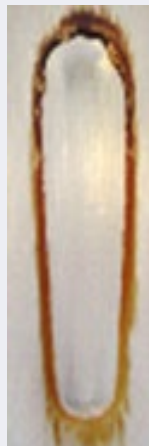
Resistance to oxidation (ASTM D4636, 72 h at 204 °C)

		NYCOBASE 7300	PAO 4	GROUP III	ALK. NAPHTH.	NYCOBASE 5750	NYCOBASE 1040X	ALK. NAPHTH.	NYCOBASE 32506 FG	PAO 40
KV 100		3.43	3.95	4.25	4.82	4.98	10.3	12.5	25.6	39.5
KV 40		13.8	17.3	19.7	28.7	24	94.1	113	377	403
Acid number change	mgKOH/g	1.71	7.73	8.13	8.56	0.92	0.43	12	0.18	5.69
KV 40 change	%	15	17	21.5	56.9	14.7	22.5	127	29.6	39.5
Metal weight change :	mg/cm ²									
Steel		0	0.28	0.46	0.08	-0.03	-0.05	1.3	0.05	0.04
Silver		-0.05	0.24	0.41	0.1	-0.05	-0.06	-0.02	-0.06	0.04
Aluminium		-0.01	0.33	0.49	-2.3	-0.01	-0.08	0.79	-0.02	0.02
Magnesium		-0.01	-0.93	-1.09	-0.45	-0.04	-0.06	0.3	-0.02	0.02
Copper		0.14	0.69	1.24	0.38	0.07	0.06	-0.04	-0.02	0.06
Deposits		0.9	438	2872	1674	0.83	0.9	Clogged	1.7	Clogged



Coking propensity (GFC-Lu-27-A-13, micro-coking test 230-280 °C, 90 min)

NYCOBASE 32506 FG	
KV 40	380
Deposit temperature	273°C
Average merit	8.8
Metal plate	

PAO 40	
KV 40	396
Deposit temperature	<230°C
Average merit	6.6
Metal plate	

PERFORMANCE TESTS SUMMARY

ISO VG 46 air compressor oil – DIN 51506 VD-L

PROPERTIES	UNITS	TEST METHODS	RESULTS		DIN 51506 VD-L
Composition	%	-	Nycobase 8311: Nycobase 1040X : Additives :	36.15 62.00 1.85	-
Kinematic Viscosity 40° C 100° C	mm ² /s	ISO 3104	48.5 7.3		41.4 – 50.6
Acid number	mg KOH/g	ISO 6619	0.56		As agreed
Sulfated ash	%	DIN 51575	None		As agreed
Flash Point	°C	ISO 2592	262		min. 195
Pour Point	°C	ISO 3016	-36		max. -9
Water content	mg/kg	ISO 12937	330		max. 1000
Conradson Carbon after ageing with Fe ₂ O ₃	%	DIN 51352-2	0.34		max. 2.5
Evaporation	%		1.55		-
Conradson Carbon after 80% distillation	%	DIN 51356	0.15		max. 0.30
Ratio KV/KV fresh oil	-	DIN 51551	1.13		max. 5.00
Copper corrosion	-	ISO 2160	1b		-
Steel corrosion – sea water	-	ISO 7120 B	Pass		-
Water separation	min	ISO 6614	15		-
Foaming 24°C	ml/ml	ISO 6247	0/0		-
4 ball Wear Scar	mm	ASTM D4172	0.46		-



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