SANDVIK PERFORMANCE FLUIDS
LONG-LIFE COMPRESSOR OIL
SANDVIK OC5-H, OC10-H AND OC25-H

TECHNICAL SPECIFICATION

DESCRIPTION

Compressed air has become a major form of energy and the reliable generation of compressed air is vital. Operators require compressors to function perfectly over and beyond entire service intervals.

Sandvik Synthetic Compressor Oils were developed to meet the increased requirements of compressor manufacturers on the service life of compressor oils. Due to the function of compressors, intensive swirling of the cooling oil and air occurs. At high compression temperatures, the oils are subjected to a strong oxidative attack that accelerates ageing. The selection of special synthetic base oils and additive systems makes long, interruption-free operation possible. To ensure optimum performance of the oil separator, the air release properties and low foaming are characteristic for screw and turbo compressor oils. Sandvik Synthetic Compressor Oils offers long service life, and they fulfill the requirements mentioned above as well as the requirements according to DIN 51506 VDL

The most important functions of lubricating and cooling oils in screw compressors are:
* Cooling the compressed air
* Bearing lubrication
* Sealing the chambers
* Corrosion protection
* Preventing the formation of deposits.

Sandvik Synthetic Compressor Oils have especially been developed for the use in oil injected screw compressors and in turbo compressors.

KEY FEATURES

Excellent viscosity-temperature behaviour (high natural viscosity index), shear-stable
Excellent oxidation stability
Low evaporation losses
Excellent wear protection (EP/AW!)
Excellent FE8 performance
Good demulsifying properties
Excellent corrosion protection (steel and copper)
Good compatibility with elastomers
Low foaming / good air release
Suitable for high-temperature applications
Synthetic hydraulic fluids, excellent deep temperature flowability
Exceed DIN 51506 - VDL

APPLICATION

Sandvik Synthetic Compressor Oils are recommended for use in flooded or oil injection screw-type air compressors and turbo compressors.

Sandvik Synthetic Compressor Oils should always be used if mineral oil-based products are found to display insufficient thermal stability (resistance to ageing) or poor viscosity-temperature behaviour. Compared to mineral oil-based oils, Sandvik Synthetic Compressor Oils foam less, offer better demulsification and have superior air release properties.

The use of Sandvik Synthetic Compressor Oils are especially recommended in unfavourable conditions and at high temperatures in which other oils fail because they allow coke to form, thus leading to unacceptably short oil life. These oils are also recommended for compressors which are subject to extreme loads.

Compared to mineral oil products, the life of Sandvik Synthetic Compressor Oils are considerably longer, operational reliability is much improved and breakdowns are effectively reduced (service intervals can be extended).

EXCELLENT VISCOSITY-TEMPERATURE BEHAVIOUR (HIGH NATURAL VISCOSITY INDEX)

Sandvik Synthetic Compressor Oils display good "natural" viscosity-temperature behaviour. Compared to equiviscous mineral oils, the start-up viscosity of such oils at low temperatures is significantly less. This also ensures the fastest possible oil feed to bearings. Furthermore, compared to mineral oil-based products of the same ISO-VG, the viscosity of Sandvik Synthetic Compressor Oils at operating temperatures is higher. This ensures that an optimal lubricating film (higher viscosity) is always formed. Even at high loads and after long periods of use, no shearing losses (drop in VI) occur.

EXCELLENT OXIDATION STABILITY

When running, the lubricating oil in screw compressors comes into close contact with the oxygen in the air. Oxidation is accelerated by the large volumes of air along with the relatively large surfaces on the inside of such compressors. The temperature peaks encountered in screw compressors also subject the lubricating oil to thermal stress. The use of Sandvik Synthetic Compressor Oils, especially at high temperatures (caused by high pressures), avoids the formation of ageing by-products and coke. Moreover, they hinder the formation of corrosive oxidation by-products as well as rubbery or lacquer-like deposits. Sandvik Synthetic Compressor Oils reduce breakdowns and maintenance work, increase the life of filters and improve the performance of compressors. The outstanding oxidation resistance of the base oils used which is boosted by special oxidation inhibitors avoids the formation of ageing by-products, coke and other products which detrimentally affect performance. These features also significantly increase the life of the oil.

LOW EVAPORATION LOSSES

Mineral oil-based lubricants, especially at high operating temperatures, tend to evaporate their highly volatile components causing the viscosity to increase and oil mist pollution of the compressed air. The very low evaporation losses of the synthetic base oils used for Sandvik Synthetic Compressor Oils largely eliminate such problems.

EXCELLENT WEAR PROTECTION (EP)

The heat which is generated at high compressor outlet pressures often causes the oil film between the rotor flanks to become so thin that metal-tometal contact takes place and thus wear. Sandvik Synthetic Compressor Oils contain special AW/EP additives which enable a protective film to be formed even at extreme pressures. This minimizes bearing and rotor wear and thus significantly increases the operational reliability of the compressor. Sandvik Synthetic Compressor Oils tested in the FE8 test rig, with excellent results.

EXCELLENT PERFORMANCE IN HYDRAULIC EQUIPMENT

Sandvik Synthetic Compressor Oils offer excellent wear protection in hydraulic equipment. RWTÜV Germany - a well-known independent institute - has done the Vickers Vane Pump Test with Sandvik Synthetic Compressor Oils, with excellent results. Extreme wear protection guarantees a long lifetime of the components.

GOOD DEMULSIFYING PROPERTIES

Water can get into compressors through condensation. Such moisture can accelerate the ageing of the oil. Furthermore, water in compressors can lead to bearing failure and to negative reactions And on top of that, water can wash out the watersoluble additives in the oil which again reduces lubricity. Condensation can also occur in compressors which are used intermittently or which are rarely run at full power. Moisture in the oil can create sludge or stable water-in-oil emulsions which can block oil passages, causing partial seizures. Any moisture which gets mixed with Sandvik Synthetic Compressor Oils separates-out and can be drained. This reduces the problems associated with the formation of emulsions which have to be disposed-of as special waste. All these features help reduce costs.

EXCELLENT CORROSION PROTECTION FOR STEEL AND NONFERROUS METALS

DIN ISO 7120 examines the corrosion protection properties of an oil and distilled water on a steel test panel. In this test, Sandvik Synthetic Compressor Oils caused no corrosion throughout the duration of the test. The same excellent results also apply to nonferrous metals (DIN EN ISO 2160). Practically, this means that all machine components remain well protected against corrosion.

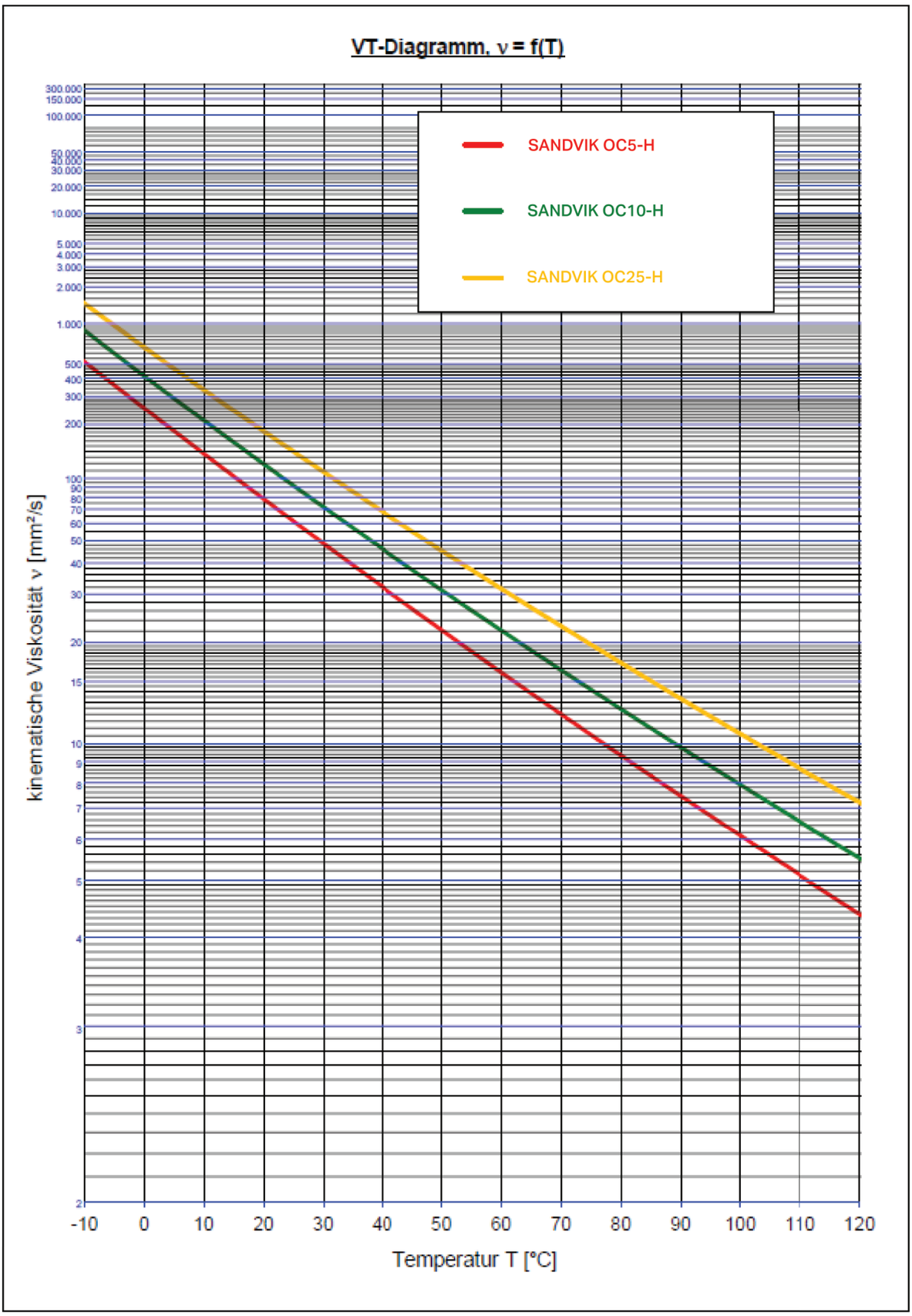
TYPICAL CHARACTERISTICS:

PRODUCT NAME		OC5-H	OC10-H	OC25-H	
PROPERTIES	**UNIT**				**TEST METHOD**
ISO VG		32	46	68	DIN51519
Colour Index		0	0	0	DIN ISO 2049
Kinematic viscocity:					DIN EN ISO 3104
at – 20 °C	mm^2/s	1200	2000	3500	
at 0 °C	mm^2/s	260	400	660	
at 40 °C	mm^2/s	32	46	68	
at 100 °C	mm^2/s	6.1	7.9	10.6	
Viscosity index		138	141	146	DIN ISO 2909
Density at 15 °C	kg/m3	838	841	845	DIN 51757
Flashpoint, COC	°C	240	260	260	DIN ISO 2592
Pourpoint	°C	< - 60	< - 60	- 54	DIN ISO 3016
Copper corrosion	Degree of corr.		1-100 A3		DIN EN ISO 2160
Steel/ferrous corrosion protection properties	Degree of corr.	0-A 0-B	0-A 0-B	0-A 0-B	DIN ISO 7120
Neutralization number	mgKOH/g	0.2	0.2	0.2	ISO 6618
Water content	% mass		not detectable		DIN ISO 3733
Demulsification at 54 °C	min	10	10	15	DIN ISO 6614
Demulsification at 82 °C	min	-	-	-	DIN ISO 6614
Air release at 50 °C	min	1	2	5	DIN ISO 9120
Air release at 75 °C	min	-	-	-	DIN ISO 9120
Foaming, Seq. I: 24 °C Seq. II: 93.5 °C Seq. III: 24 °C after 93.5 °C	 ml ml ml	 0/0 0/0 0/0	 0/0 0/0 0/0	 0/0 0/0 0/0	ASTM D 892

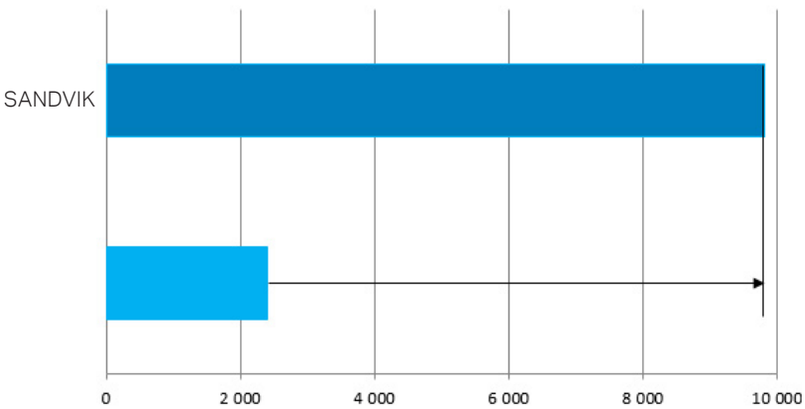
* RWTÜV report is available for Sandvik OC10-H

SPECIFICATION

The Sandvik Synthetic Compressor Oils fulfill and surpass the requirements according to
DIN 51506: VDL
L-DAA,L-DAB (reciprocating compressors)
L-DAG,L-DAH, L-DAJ (rotating compressors)
DIN 51524-2:HLP, DIN 51524-3:HLP,
ISO 6743-3


VT-Diagramm, ν = f(T)
SANDVIK OC5-H
SANDVIK OC10-H
SANDVIK OC25-H
kinematische Viskosität ν [mm²/s]
300.000
150.000
100.000
50.000
40.000
30.000
20.000
10.000
5.000
4.000
3.000
2.000
1.000
500
400
300
200
100
90
80
70
60
50
40
30
20
15
10
9
8
7
6
5
4
3
2
-10
0
10
20
30
40
50
60
70
80
90
100
110
120
Temperatur T [°C]

RELATIVE OIL LIFE (HOURS) IN RECOGNIZED INDUSTRY TESTS



With Sandvik Synthetic Compressor Oils you can extend the oil drain intervals considerably: Up to 4 times longer oil life

Sandvik Mining and Rock Technology reserves the right to make changes to the information on this data sheet without prior notification to users. Please contact a Sandvik representative for clarification on specifications and options.

ROCKTECHNOLOGY.SANDVIK