

RENISO SYNTH 68

Fully synthetic PAO-based refrigeration oil,

- for highly stressed ammonia (NH₃) compressors
- for CO₂ (R744) applications - not miscible with CO₂.
- for applications with R1233zd(E)
- for hydrocarbon refrigerants, e.g. propane (R290)

Description

RENISO SYNTH 68 is based on polyalphaolefins (PAO) with excellent chemical and thermal stability. It was developed especially for applications where ammonia is used as refrigerant.

RENISO SYNTH 68 has a better lifetime compared to mineral oil-based refrigeration oils, lower evaporating losses due to the synthetic components and an excellent low temperature flowability.

RENISO SYNTH 68 is also especially suitable for applications with hydrocarbon refrigerants such as propane or propene.

RENISO SYNTH 68 can also be used in CO₂ systems - not miscible with CO₂.

RENISO SYNTH 68 is registered according to NSF H1. (NSF H1 describes lubricants of the highest quality and purity which can safely come into occasional contact with products - food or confectionary - during manufacturing.)

Advantages

- Extreme chemical and thermal stability with NH₃
- High stability with CO₂ (R 744) and hydrocarbons
- High viscosity index, good viscosity temperature behaviour
- Excellent low temperature flowability, excellent cold flowing properties (especially in evaporators)
- Extremely low pourpoint
- Low evaporating losses
- High flashpoint
- Good lubricity
- NSF H1 registration: registration no. 136600

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Application

RENISO SYNTH 68 is recommended instead of mineral oil based or alkylbenzene-based products especially in highly stressed ammonia applications and/or for deep evaporating temperatures. RENISO SYNTH 68 can be used in piston as well as in oil-injected screw compressors.

RENISO SYNTH 68 can also be used in CO₂ applications as a not miscible CO₂ refrigeration oil.

Specifications

RENISO SYNTH 68 meets and exceeds the requirements of DIN 51503-1, Category KAA: refrigeration oils which are not miscible with ammonia (NH₃).

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Typical technical data:

Product name		RENISO SYNTH 68	
Properties	Unit		Test method
Density at 15 °C	kg/m ³	835	DIN 51757
at 70 °C	kg/m ³	801	
Flashpoint, Cleveland open cup	°C	260	DIN ISO 2592
Colour		0	DIN ISO 2049
Kinematic viscosity at 40 °C	mm ² /s	68	DIN 51562-1
at 100 °C	mm ² /s	10.5	
Viscosity index	-	142	DIN ISO 2909
Pourpoint	°C	-57	DIN ISO 3016
U-tube flowing	°C	-41	DIN 51568
Neutralisation number	mgKOH/g	0.01	DIN 51558-1
Water content	mg/kg	25	DIN 51777-2

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Other measured values for RENISO SYNTH 68:

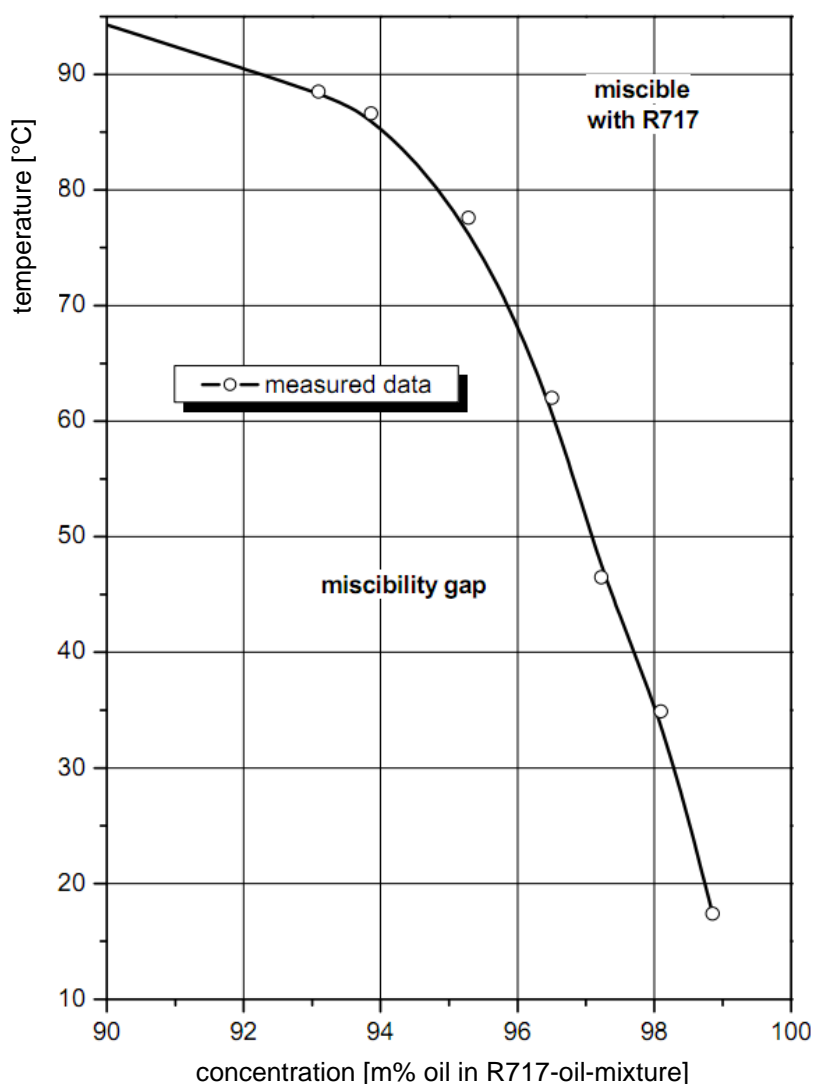
Unit [°C]	Kinematic viscosity [mm ² /s]	Specific heat [J/(g·K)]	Thermal conductivity [W/(m·K)]
20	183.0	2.075	0.157
30	108.0	2.109	0.155
40	68.0	2.144	0.154
50	45.2	2.179	0.152
60	31.5	2.213	0.151
70	22.9	2.248	0.149
80	17.0	2.283	0.148
90	13.3	2.317	0.146
100	10.5	2.352	0.145
110	8.5	2.387	0.143
120	7.0	2.421	0.142

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- for CO_2 (R744) applications - not miscible with CO_2 .
- for applications with R123zd(E)
- for hydrocarbon refrigerants, e.g. propane (R290)

Miscibility behaviour (miscibility gap): RENISO SYNTH 68 and ammonia, R717



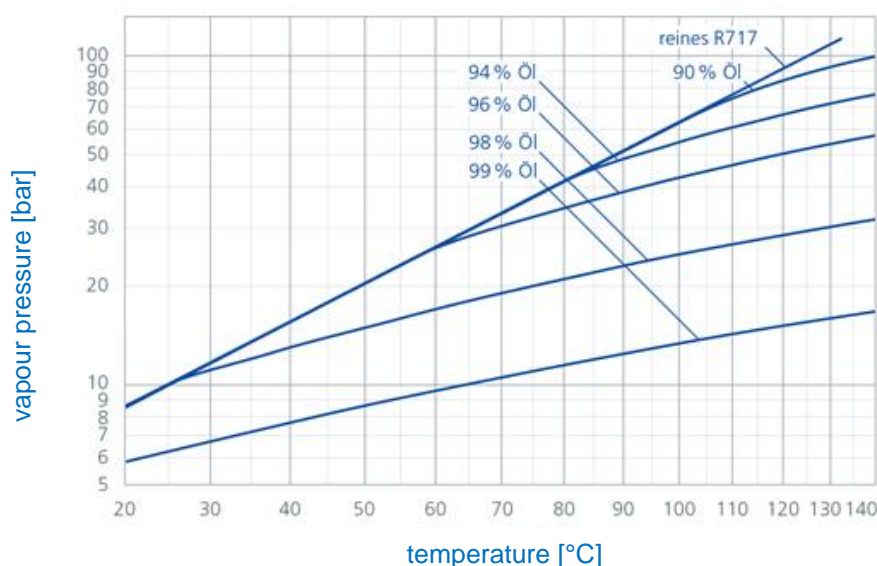
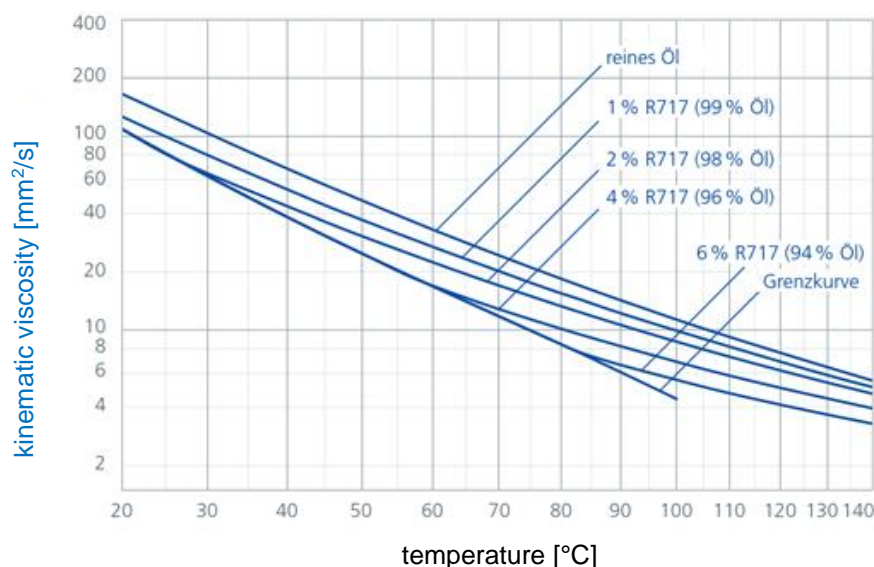
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Kinematic viscosity and vapour pressure: RENISO SYNTH 68 and ammonia, R717



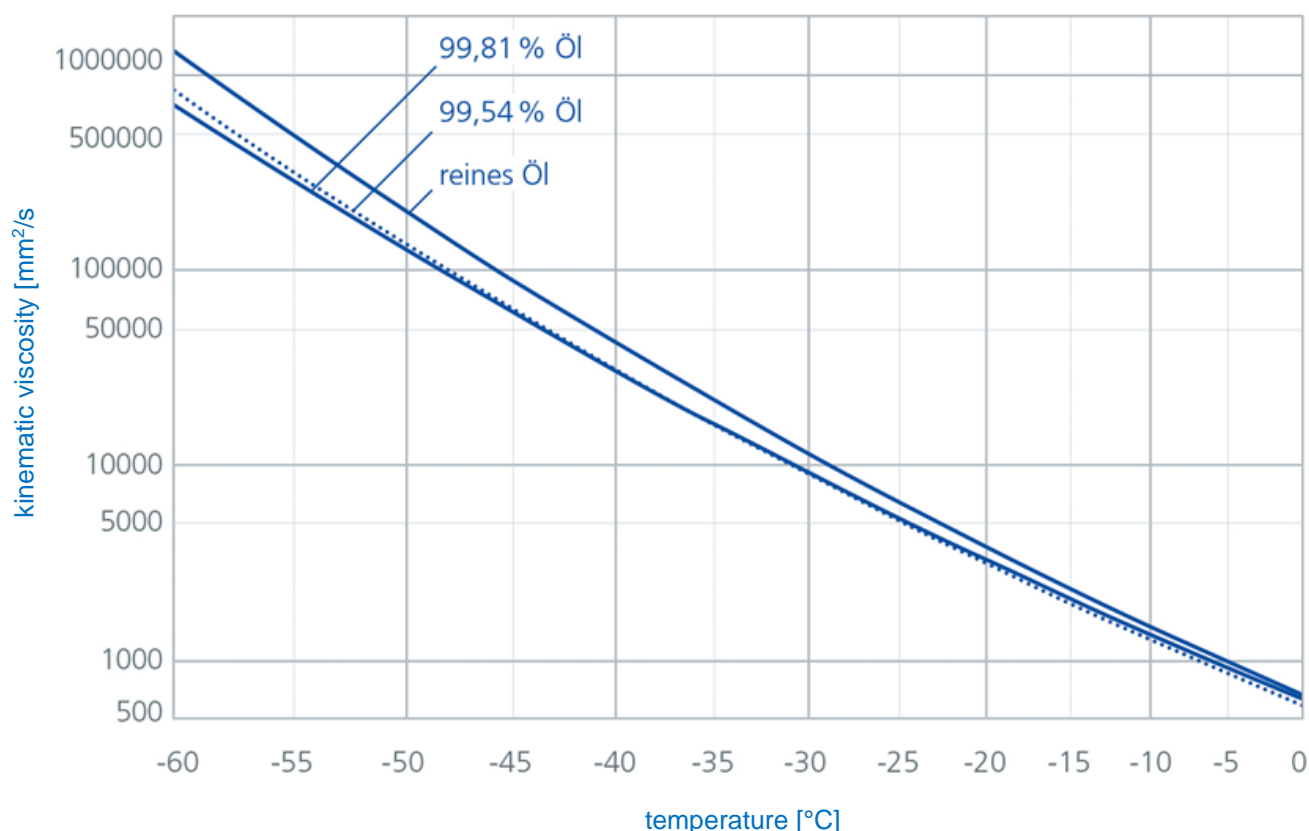
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low-temperature viscosity: RENISO SYNTH 68 and ammonia, R717



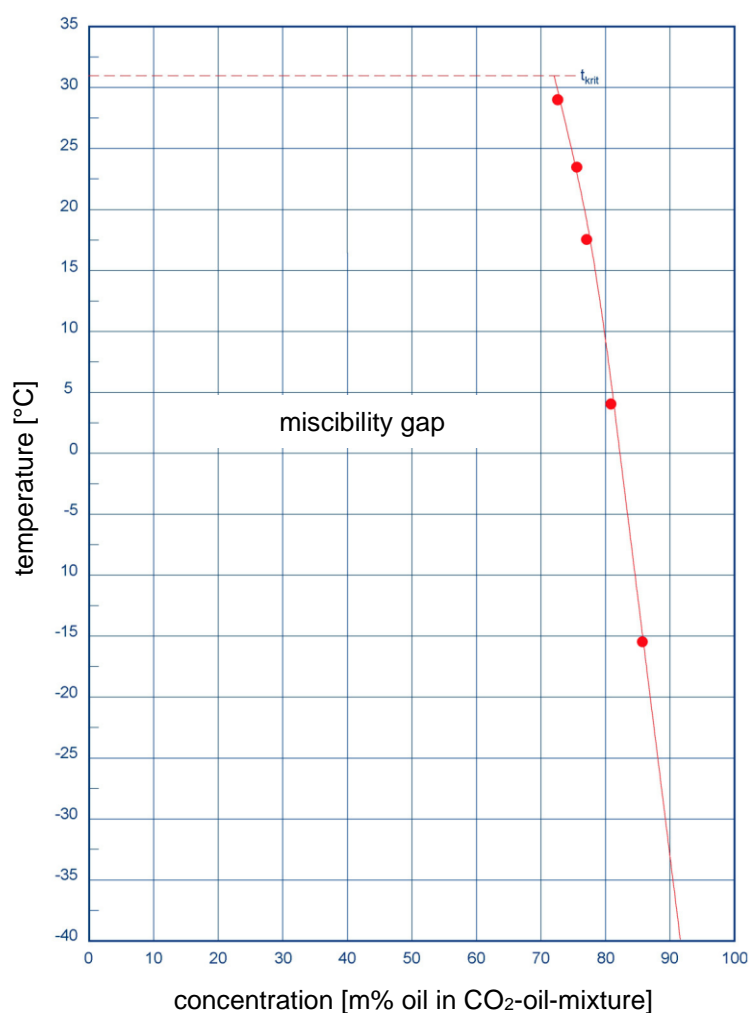
All % figures represent m% oil in the oil-refrigerant-mixture.

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Miscibility behaviour (miscibility gap): RENISO SYNTH 68 and CO₂, R744

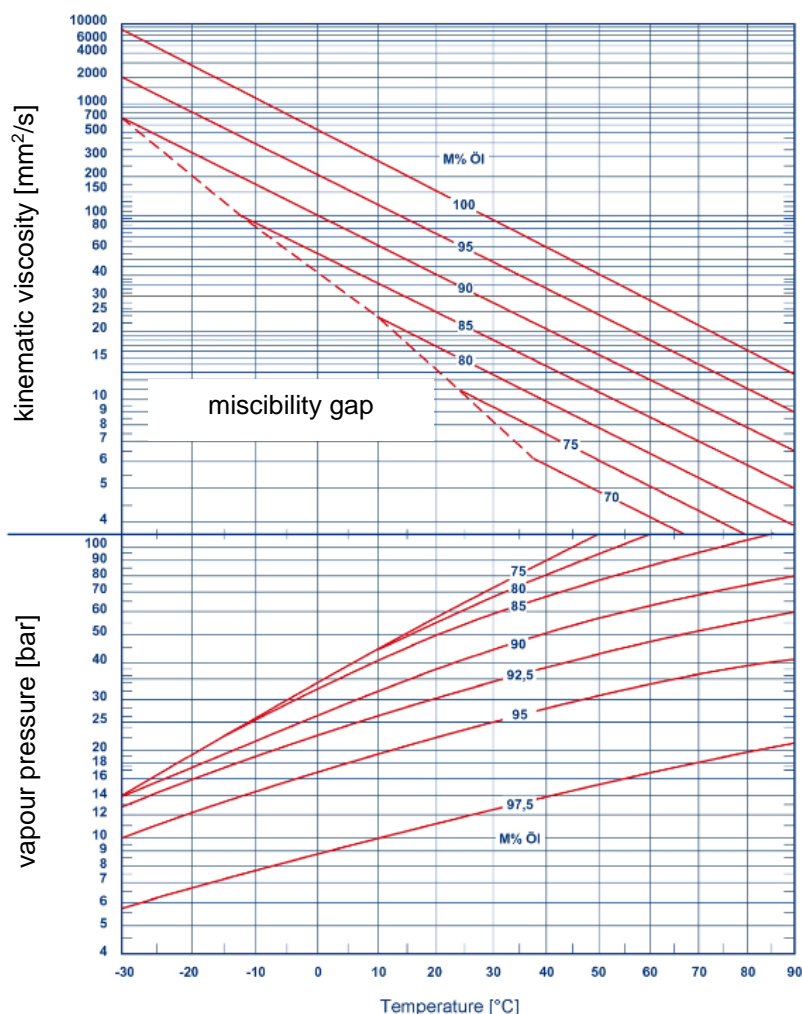


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Kinematic viscosity and vapour pressure: RENISO SYNTH 68 and CO₂, R744



All % figures represent m% oil in the refrigerant-oil-mixture.

M%Öl = Mass Percent Oil in CO₂

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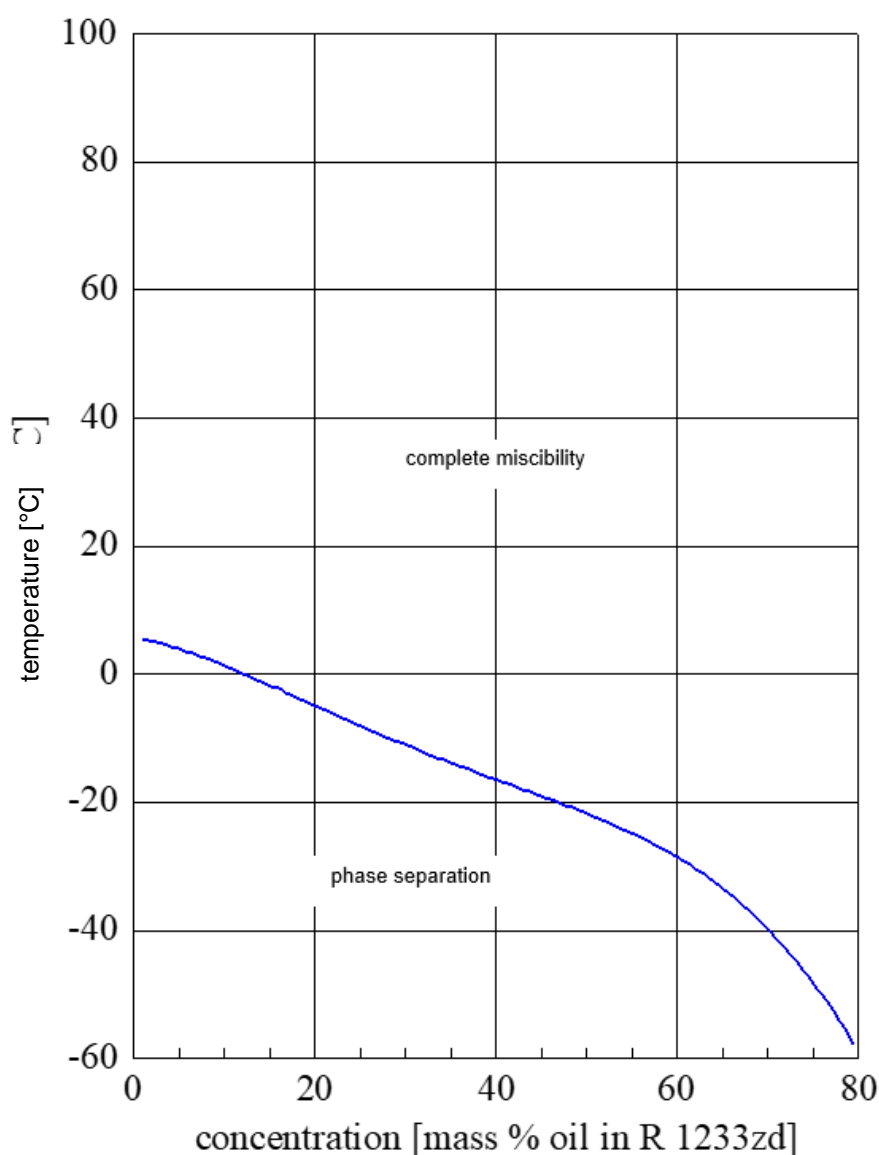
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Miscibility behaviour (miscibility gap): RENISO SYNTH 68 and R1233zd



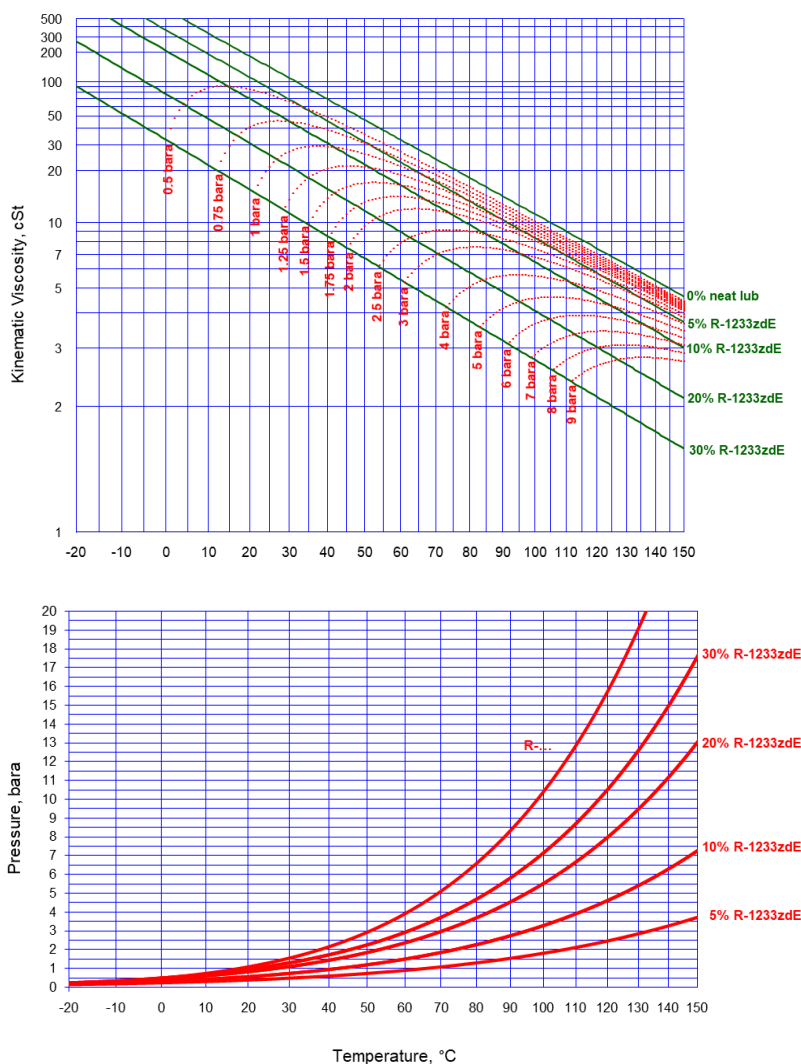
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Kinematic viscosity and vapour pressure: RENISO SYNTH 68 and R1233zd(E)



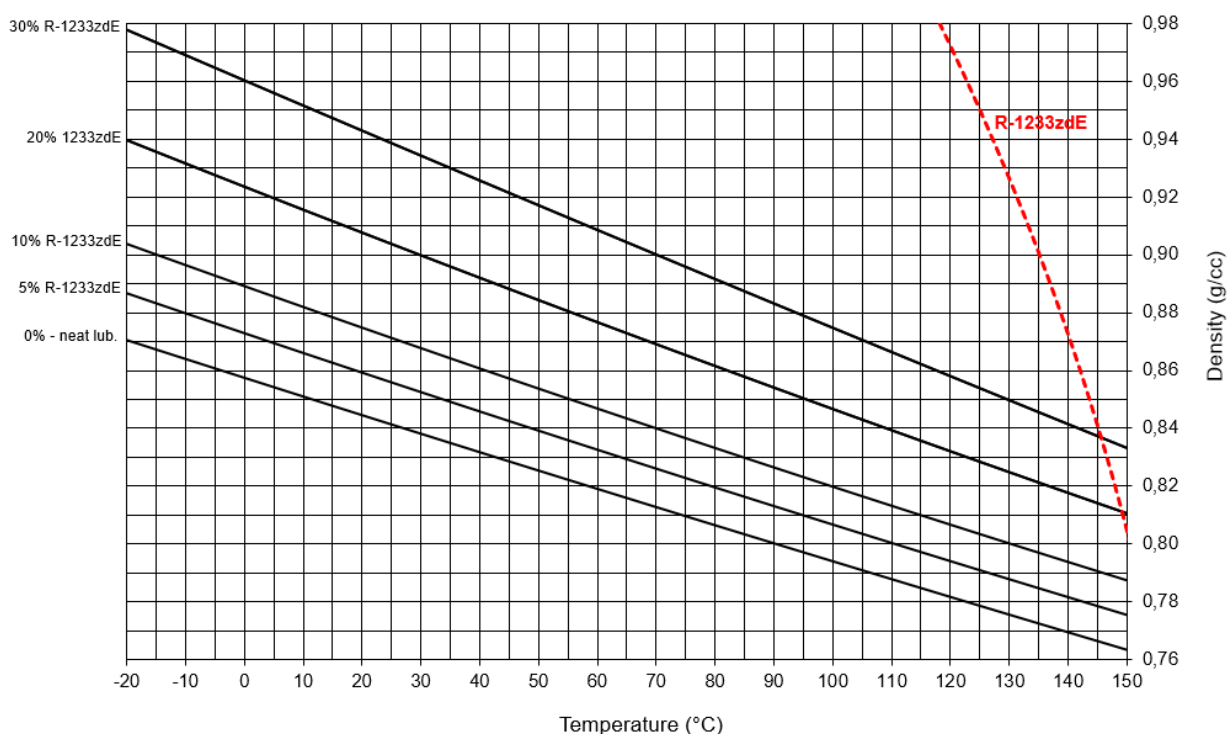
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Density: RENISO SYNTH 68 and R1233zd(E)

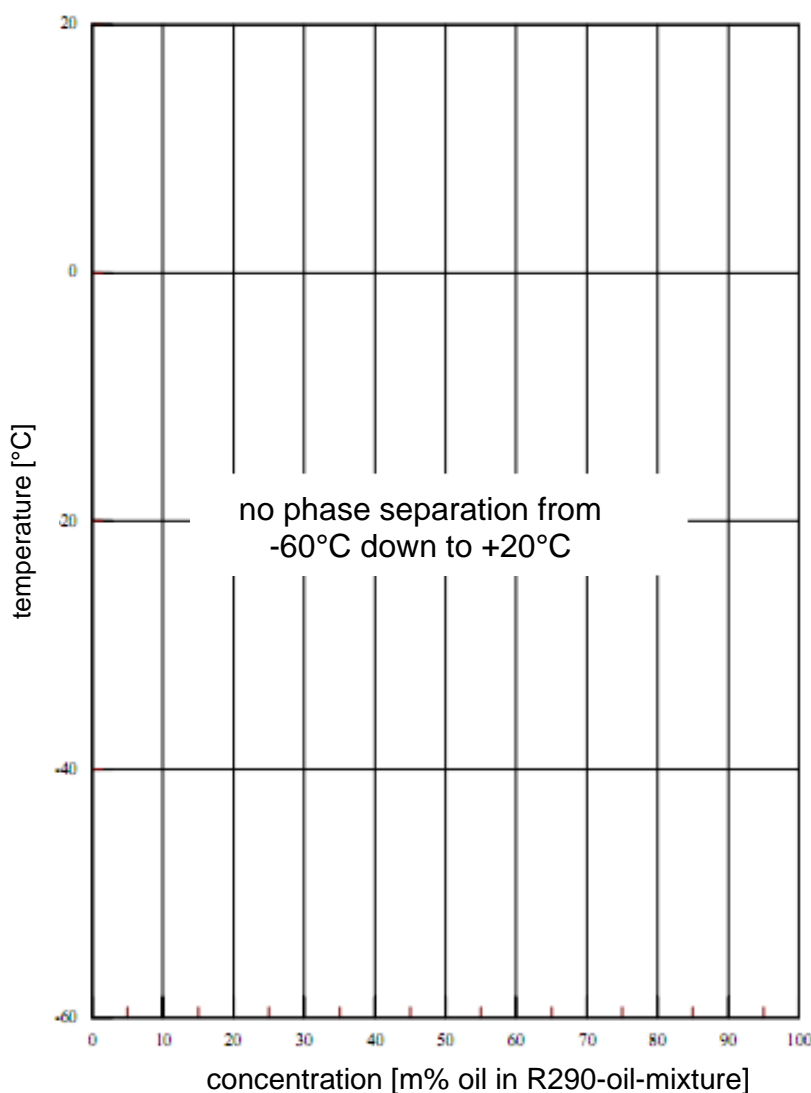


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Miscibility behaviour (miscibility gap): RENISO SYNTH 68 and propane, R290



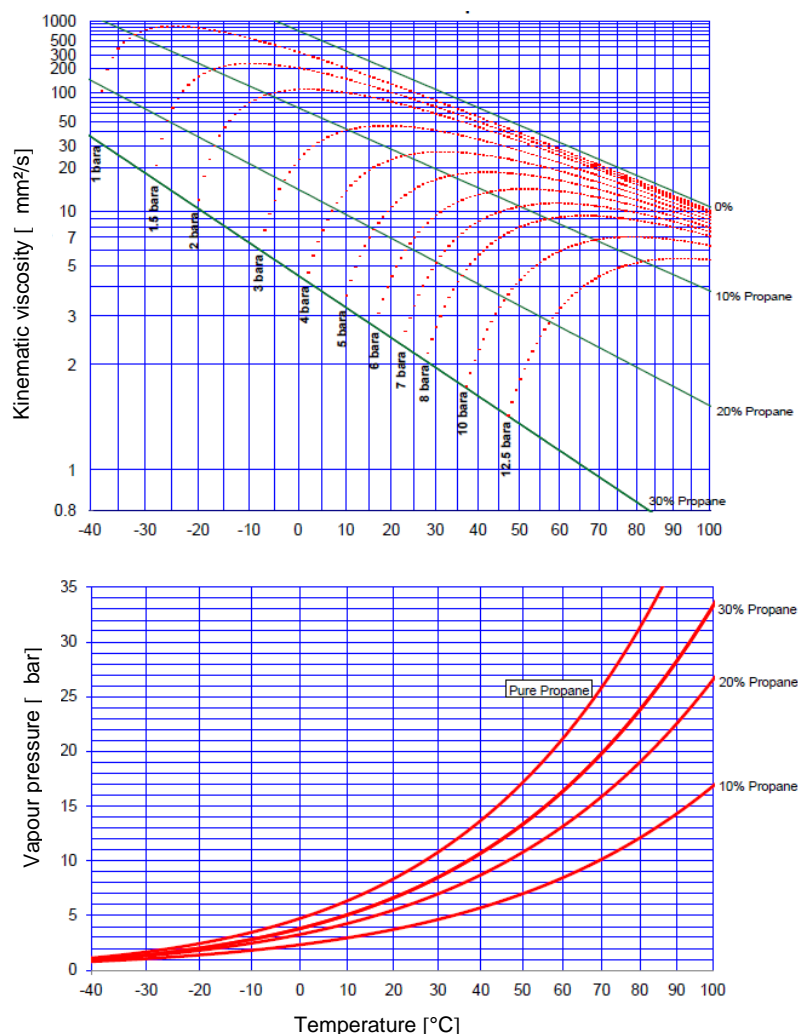
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- for hydrocarbon refrigerants, e.g. propane (R290)

Kinematic viscosity and vapour pressure: RENISO SYNTH 68 and propane, R290



All % figures represent m% refrigerant in the oil-refrigerant-mixture.

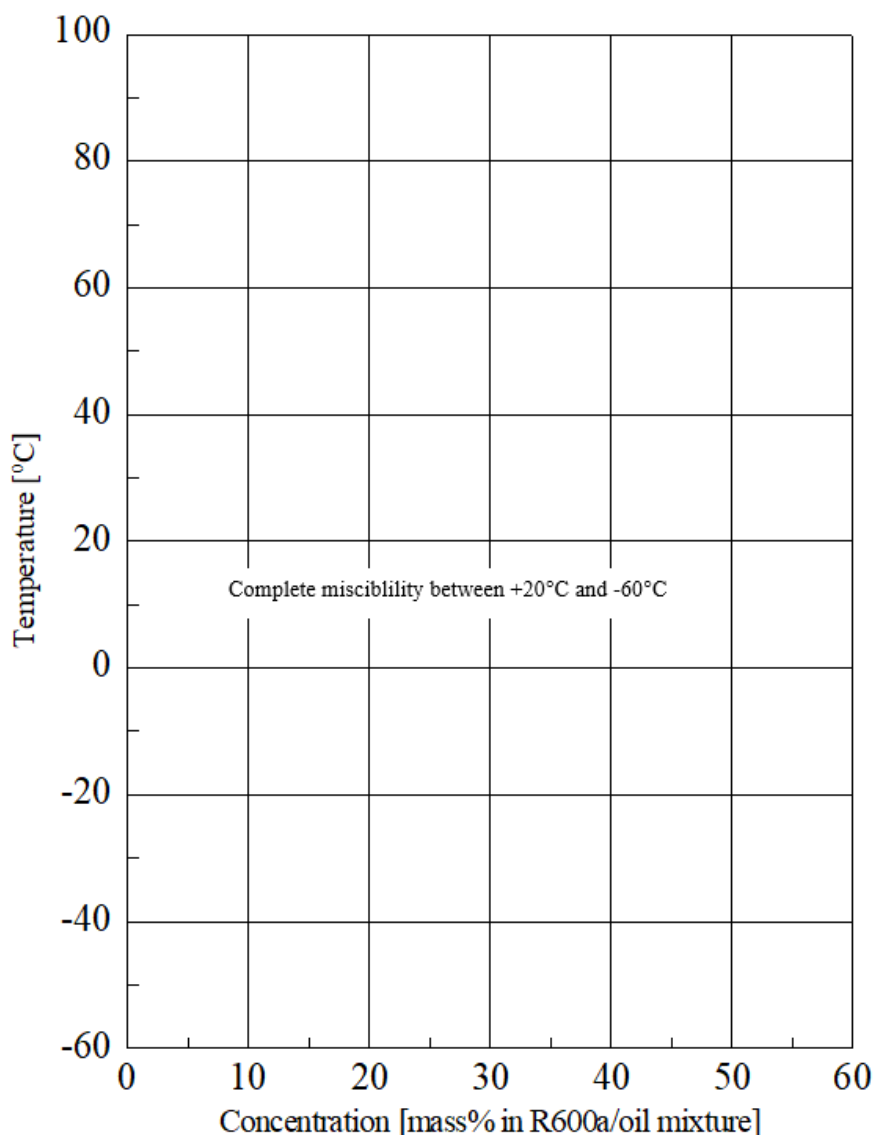
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Miscibility behaviour (miscibility gap): RENISO SYNTH 68 and Isobutane, R600a



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