

## RENISO UltraCool 68 RENISO UltraCool 100

### Synthetic hydrocarbon-based refrigeration and heat pump oils for ammonia (NH<sub>3</sub>) compressors

#### Description

RENISO UltraCool 68 and RENISO UltraCool 100 are based on chemically and thermally high-stable hydrocarbons. They were developed especially for applications where ammonia is used and are suitable for screw and reciprocating compressors. RENISO UltraCool 100 has especially been created for heat pump applications.

RENISO UltraCool 68 and RENISO UltraCool 100 are high-tech alternatives to mineral oil-based refrigeration oils. Synthetic components reduce the oil consumption due to less oil carry-over. This leads also to an increase of the system efficiency. RENISO UltraCool oils have a better lifetime compared to mineral oil-based refrigeration oils. The products show an excellent low temperature flowability which allows the use even at evaporation temperatures below -45 °C. RENISO UltraCool oils improve the compressor efficiency due to excellent lubrication properties provided by higher viscosity over a wide temperature range. The good natural viscosity-temperature behaviour leads also to a higher wear protection when comparing RENISO UltraCool oils with mineral oil-based products.

#### Specifications

RENISO UltraCool oils meet and exceed the requirements of DIN 51503-1, Category KAA: refrigeration oils which are not miscible with ammonia.

RENISO UltraCool 68:

NSF H2 registration:  
registration no. 150095

#### Advantages

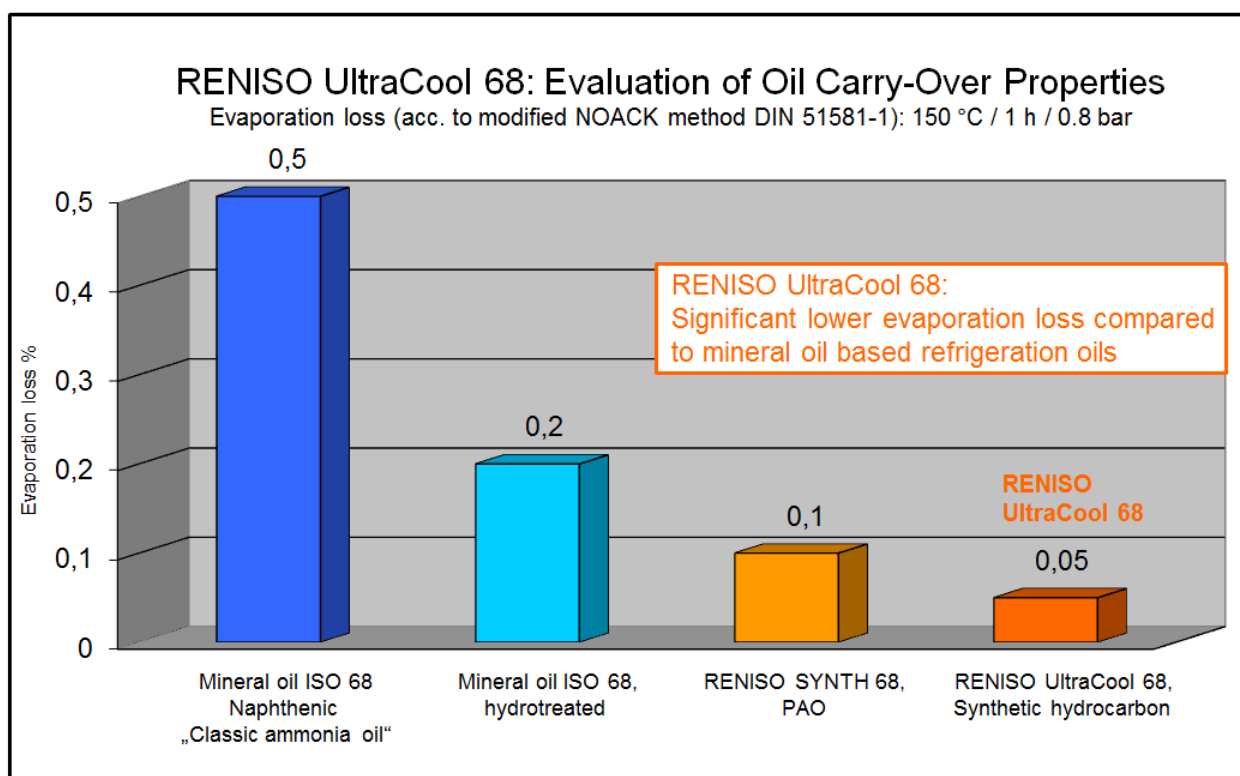
- Higher ageing stability compared to naphthenic-based refrigeration oils
- Less residues, less varnish & less sludge
- Very low pourpoint
- Superior low temperature flowability: suitable especially for low evaporation temperatures < - 45 °C
- Excellent viscosity-temperature behaviour (high viscosity index VI)
- Improved compressor efficiency
- Better wear protection compared to mineral oil
- Less oil carry-over: reduced oil consumption and higher system efficiency
- Compatible with refrigeration oils based on mineral oil, PAO and/or alkylbenzene
- Compatible with commonly used seal materials in NH<sub>3</sub> refrigeration systems, including chloroprene (CR)
- RENISO UltraCool 100 – especially suitable for heat pump applications

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for ammonia (NH<sub>3</sub>) compressors**

### Application

RENISO UltraCool 68 is suitable for ammonia refrigeration systems, especially when flooded evaporation systems are used. Due to its product properties RENISO UltraCool 68 is particularly suitable for the lubrication of highly-loaded piston and screw compressors in NH<sub>3</sub> refrigeration systems.



### RENISO UltraCool 68:

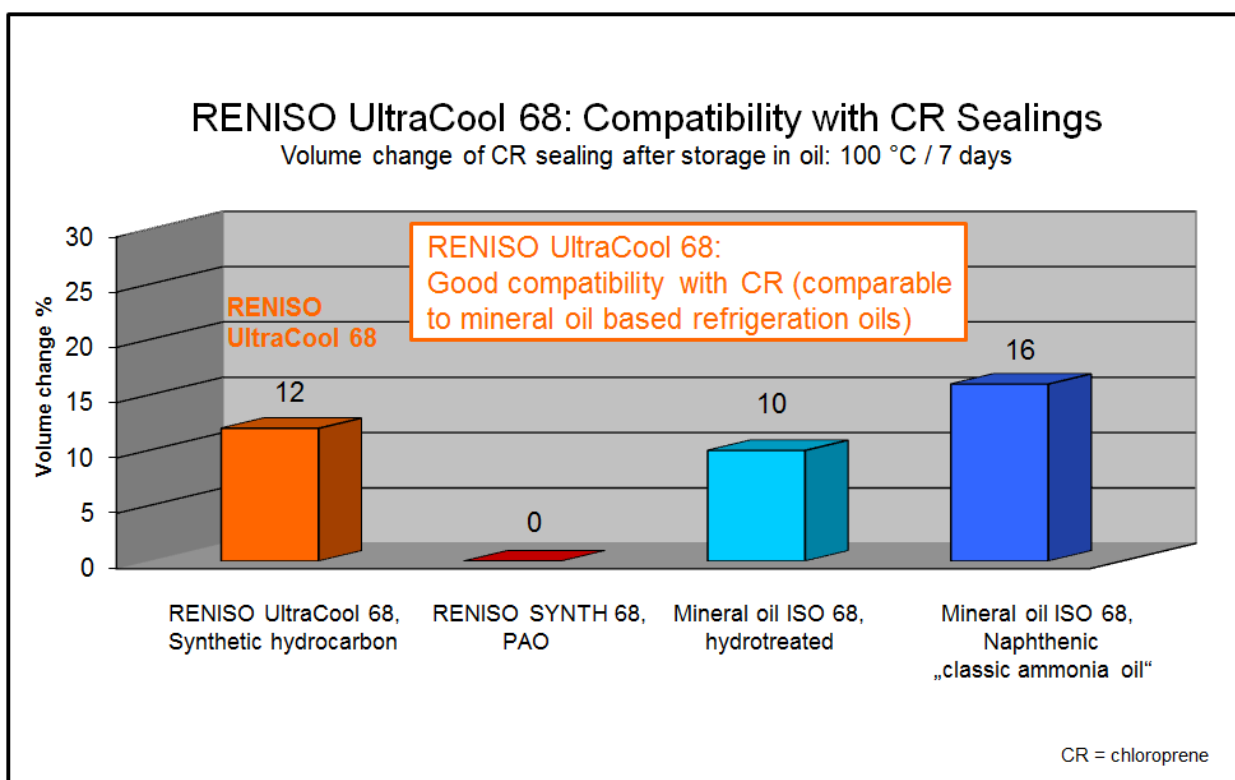
**Low evaporation loss means low oil carry-over**

→ Reduced oil consumption

→ Higher system efficiency

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### RENISO UltraCool 68:

Moderate volume increase (swelling) of the chloroprene (CR) material means good sealing compatibility

- Tightness of the refrigeration system: no problems caused by oil leakage at the compressor
- Elastomer compatibility of RENISO UltraCool 68: comparable with mineral oil-based refrigeration oils

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### Typical data

Product name		RENISO UltraCool 68	RENISO UltraCool 100	
Characteristics	Unit			Test method
Colour	-	0.5	0.5	DIN ISO 2049
Density at 15 °C	kg/m <sup>3</sup>	854	857	DIN 51757
Flash point, Cleveland open cup	°C	250	239	DIN ISO 2592
Kinematic viscosity at 40 °C	mm <sup>2</sup> /s	62	108	DIN EN ISO 3104
at 100 °C	mm <sup>2</sup> /s	9.1	14.4	
Viscosity index	-	124	136	DIN ISO 2909
Pourpoint	°C	-48	-45	DIN ISO 3016
Neutralisation number / Total acid number	mgKOH/g	0.02	0.02	DIN 51558-1
Water content (K.F.)	mg/kg	25	25	DIN 51777-2
Electrical conductivity	KV	> 40	> 40	DIN VDE 0370-1



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Miscibility behaviour (miscibility gap): RENISO UltraCool 68 and ammonia

