

WACKER

CREATING TOMORROW'S SOLUTIONS

HELISOL®

HELISOL® –
HEAT TRANSFER FLUIDS FOR
INDUSTRIAL APPLICATIONS

Safety and Reliability

To address safety issues, WACKER has conducted laboratory tests and industrial-scale trials which have been performed and assessed by internationally recognized safety experts (e.g. the German Aerospace Centre (DLR), TÜV Nord GmbH, Bundesanstalt für Materialforschung und -prüfung (BAM)) in order to gain a detailed understanding of associated risks and subsequently design counter measures.

The safety and risk assessment of HELISOL® heat transfer fluids include the following trials and experiments:

- Analysis of combustion products and burning behavior
- Material compatibility with steel grades
- Critical reactions with water and molten salt
- Detailed analysis of potential hazards in combination with leakages and pipe ruptures

Conclusion

HELISOL® heat transfer fluids offer many advantages compared to organic heat carriers. Most notably the main combustion products are not classified as hazardous and the heat of combustion is significantly lower.

Property Profile

HELISOL® heat transfer fluids are transparent clear, odorless and non-reactive polydimethylsiloxanes with a viscosity range of approx. 5 to 35 mm²/s at room temperature. This has far-reaching effects on the stability and resistance to various influencing factors.

- Recommended for use as heat transfer fluids in closed systems under inert conditions
- The maximum recommended film temperature is 450 °C.
- Different applications:
 - Solar thermal applications
 - Wood and metal processing
 - Oil refineries
 - Chemical, polymer and other industries

Technical Data of HELISOL® Heat Transfer Fluids

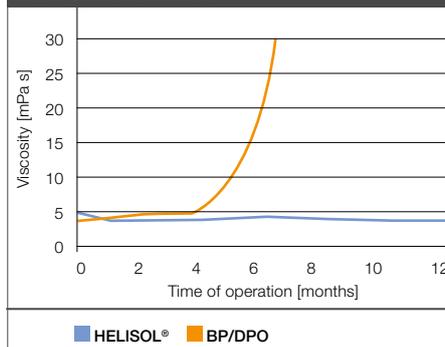
	HELISOL® 5A	HELISOL® 10A	HELISOL® XA	HELISOL® XLP
Pour point – in use*	< – 55 °C	< – 55 °C	– 36 °C	– 45 °C
Density at 25 °C	0.92 g/cm ³	0.93 g/cm ³	0.94 g/cm ³	0.95 g/cm ³
Vapor pressure at 425 °C – in use*	20 bar	16.3 bar	15.9 bar	12.6 bar
Viscosity at 25 °C	~ 5 mPa·s	~ 10 mPa·s	~ 20 mPa·s	~ 35 mPa·s
Flash point (ISO 2719)	120 °C	175 °C	225 °C	222 °C

These data are based upon samples tested in the laboratory and are not guaranteed for all samples.

Contact your WACKER representative for further information or complete sales specifications of HELISOL®.

*in use = 720 hours at 425 °C

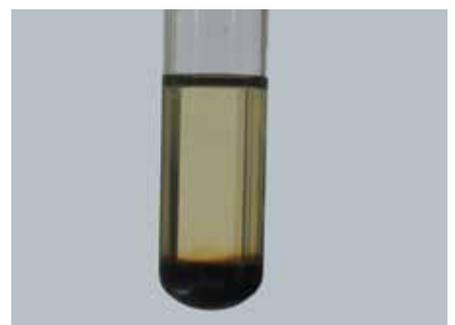
Thermal Stability Evaluation of HELISOL® Heat Transfer Fluids



HELISOL® Heat Transfer Fluids Compared to Organic Heat Carriers



HELISOL® heat transfer fluids operated at 425 °C



Organic heat carrier operated >400 °C

Conclusion

HELISOL® heat transfer fluids offer many advantages compared to organic heat carriers, withstanding temperatures of up to 425 °C for long periods and retaining its low viscosity even at -40 °C.

A large industrial chemical plant at night, illuminated by numerous lights. The scene features several tall, cylindrical distillation columns and a complex network of pipes and scaffolding. The sky is a deep twilight blue. The overall atmosphere is industrial and brightly lit against the dark background.

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The data presented in this medium are in accordance with the present state of our knowledge but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this medium should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.