

Recommended Oils for Temperature Control Units

The maximum main line temperature of a temperature control unit defines the most suitable heat transfer medium. The basic requirements for heat transfer oil are:

- The maximum permissible main line temperature of the oil must be above the maximum main line temperature of the unit.
- The permissible film temperature and initial boiling point should ideally be above 380 °C, but at least 50 K above the maximum main line temperature of the unit.

If unsuitable oil is used there is a risk of cracking, overheating and fire. Mineral oils and synthetic oils must not be mixed together in operation. The use of synthetic transfer media is recommended because of their better properties (longer service life).

The following products can be recommended, as based on information from the manufacturer:

Maximum main line temperature		Medium (trade name)	Type	Manufacturer	Website
200 °C	250 °C				
+	–	BP Olex WF 0801	synthetisch	Deutsche BP	www.bp.com
+	–	BP Transcal SA ¹⁾	synthetisch	Deutsche BP	www.bp.com
+	–	Perfecto HTS 16 ¹⁾	synthetisch	Castrol	www.castrol.com
+	–	FRAGOLTHERM 620	synthetisch	Fragol	www.fragol.de
+	+	MARLOTHERM SH	synthetisch	Marlotherm	www.marlotherm.com
+	+	FRAGOLTHERM 660	synthetisch	Fragol	www.fragol.de
+	+	RENOLIN THERM 380 S	synthetisch	Fuchs	www.fuchs-oil.de

– *not suitable*

+ *recommended*

¹⁾ *identical product*

Problems with existing installations

If, with existing units, intensified cracking or premature aging of the heat transfer medium is detected, the following points should be verified particularly when using heat transfer media which are not included above:

- Was the lifetime of the heat transfer medium exceeded? (Lifetime is shortened by extreme conditions such as high regulation ratio, low flow rate, frequent start-ups, poor deaerating)
- Is the heat transfer medium appropriate for this application (main line and film temperatures, initial boiling point, oxygen contact, compatibility with the materials used, etc.)?
- Have inadmissible oil types and qualities been added (e.g. refilling mineral oils into units using synthetic oil)?
- Has it been verified that no water is seeping into the circuit (e.g., through leaking moulds or heat exchangers)?

In case of any doubt it is advisable to contact the supplier/producer of the heat transfer medium and, if premature deterioration is established, to have it analysed.

Note: HB-Therm Oil-temperature control units are tested in our works exclusively with MARLOTHERM SH.