

## List of integrated cooling liquids of the Sontex Superstatic cooling meters



### Basis

The Sontex class 2 heat and cooling meters are homologated according to the European Standards, MID Directive 2014/32/EU and EN 1434. The Superstatic meters are homologated according to the above mentioned standards for liquid water. They below listed special liquids can be used with the following Sontex cooling meters:

- Supercal 5 S
- Supercal 5 I (Calculator)
- Superstatic 440
- Supercal 531 (Calculator)
- Superstatic 449
- Superstatic 749 (compact version)
- Superstatic 789 (compact version)

### Applications with other liquids

Applications with any other liquid than water (e.g. heat and cooling conveying fluids based ethylene- or propylene- glycol, salts solutions or R134a) can't be submitted to homologation and possible future homologation is a distant prospect. The authorities which homologize heat meters (e.g. MID notified bodies) do not legalize homologations of that kind, as e.g. both product and as the actual volume fraction present in a system is not metrological controllable (i.e. not constantly measured).

The use of other liquids than water has a great influence on several metrological aspects of heat and cooling meters. The flow meter and the calculator are involved. Many of these influences are not unambiguously defined. Volumes fractions are not real-time continuously measured and proper calibration installations are rare.

This means the proper approach for a correct measurement comes with the manufacturer's engagement (e.g. glycol is not just glycol!).

#### **Mandatory information to be provided to integrate new liquids in the Superstatic meters.**

For heat transfer calculations detailed properties of the heat conveying liquid are needed:

- The exact manufacturer's name and brand type
- The density  $\rho$  [kg/m<sup>3</sup>] in relation with temperature  $T$  and volume fraction  $\alpha_v$
- The specific heat coefficient  $C_p$  [J/kg/K] in relation with temperature  $T$  and volume fraction  $\alpha_v$
- *Optionally: the (kinematic) viscosity in relation with temperature and volume fraction*

## Integrated cooling liquids of the Sontex Superstatic cooling meters

Product name	Based on	Mixing range	Homologation
WATER	O	ready-to-use	yes (MID / EN-1434 / OIML)
Antifrogen KF	O	(40..100)%	no (no legal basis)
Antifrogen L	MPG	(0..60)%	no (no legal basis)
Antifrogen N	MEG	(0..60)%	no (no legal basis)
Antifrogen SOL	O	(75..100)%	no (no legal basis)
Antifrogen SOL HT	O	ready-to-use	no (no legal basis)
Antifrost	MEG	(0..55)%	no (no legal basis)
ANTIGEL PF-20 TOP	MPG	(0..60)%	no (no legal basis)
Ascagel MPG	MPG	(0..55)%	no (no legal basis)
BRENNTAG MPG-PURE 30 %	MPG	ready-to-use	no (no legal basis)
Calcium Chloride (CaCl <sub>2</sub> )	S	(11..31) % (Wt/Wt)	no (no legal basis)
Coolant SOL	O	ready-to-use	no (no legal basis)
Coolflow FXC2 (33%)	O	ready-to-use	no (no legal basis)
Coolflow IG	MEG	(0..49)%	no (no legal basis)
Cooltrans Plus CTP	MPG	(0..60)%	no (no legal basis)
Coracon KS 6	MEG	(0..60)%	no (no legal basis)
Coracon SOL 5F	MPG	ready-to-use	no (no legal basis)
Coracon WT EKO	O	(0..90)%	no (no legal basis)
Dow USP/EP	MPG	(0..60)%	no (no legal basis)
Dow USP/EP (100%)	MPG	100%	no (no legal basis)
Dowcal 10	MEG	(0..70)%	no (no legal basis)
DowCal 20 (0-70%)	MPG	(0..70)%	no (no legal basis)
DowCal 20 (50%)	MPG	ready-to-use	no (no legal basis)
DOWCAL eGEO	MEG	(0..30)%	no (no legal basis)
DOWCAL pGEO	MPG	(0..30)%	no (no legal basis)
DOWFROST	MPG	(0..70)%	no (no legal basis)
DOWFROST HD	MPG	(0..70)%	no (no legal basis)
Ergolid A (-20)	MEG	ready-to-use	no (no legal basis)
Ergolid EKO (-20°C)	MPG	ready-to-use	no (no legal basis)
Ethanol	O	(0..100)%	no (no legal basis)
Fernox HP-15 (30% HP-15c)	MPG	ready-to-use	no (no legal basis)
Fernox HP-5 (10% HP-5c)	MPG	ready-to-use	no (no legal basis)
Fragoltherm S-20-A	O	ready-to-use	no (no legal basis)
Frostox W0206 (35% MEG)	MEG	ready-to-use	no (no legal basis)
Frostschutz L	MPG	(0..60)%	no (no legal basis)
Frostschutz N	MEG	(0..60)%	no (no legal basis)
Glad MEG	MEG	(0..60)%	no (no legal basis)
Glad MPG	MPG	(0..60)%	no (no legal basis)
Glycosol N	MEG	(0..58)%	no (no legal basis)
Glystantin G48 Protect+	MEG	(0..60)%	no (no legal basis)
Glysofor-N	MEG	(0..55)%	no (no legal basis)
Glythermin NF (0-40%)	MEG	(0..40)%	no (no legal basis)
Glythermin NF (40-100%)	MEG	(40..100)%	no (no legal basis)
Glythermin P44	MPG	(0..70)%	no (no legal basis)
Glythermin P44 (40% MPG)	MPG	ready-to-use	no (no legal basis)
Glythermin P44 (50% MPG)	MPG	ready-to-use	no (no legal basis)
Glythermin P44 (60% MPG)	MPG	ready-to-use	no (no legal basis)

Glythermin P44 (70% MPG)	MPG	ready-to-use	no (no legal basis)
Greenway Neo	MPG	(0..70)%	no (no legal basis)
Havoline-XLC	MEG	(0..60)%	no (no legal basis)
Hicool 20 (-20°C)	O	ready-to-use	no (no legal basis)
Hicool 30 (-30°C)	O	ready-to-use	no (no legal basis)
Hicool 40 (-40°C)	O	ready-to-use	no (no legal basis)
Hicool 45 (-45°C)	O	ready-to-use	no (no legal basis)
Hicool 50 (-50°C)	O	ready-to-use	no (no legal basis)
Hydromx (50%)	MEG	ready-to-use	no (no legal basis)
Isopropanol (IPA)	XC	ready-to-use	no (no legal basis)
KILFROST GEO	O	(0..50)%	no (no legal basis)
Kühlsolekonzentrat N-K	MEG	(25..60)%	no (no legal basis)
Mont Blanc MB444E	MPG	(0..50)%	no (no legal basis)
Morris Universal Antifreeze	MEG	(0..60)%	no (no legal basis)
Neutragel	MEG	(30..50)%	no (no legal basis)
Neutragel Neo	MEG	(0..50)%	no (no legal basis)
Neutraguard neo	MPG	(0..50)%	no (no legal basis)
PEKASOL L	MPG	(0..50)%	no (no legal basis)
PEKASOLar 50	MEG	ready-to-use	no (no legal basis)
Powercool DC-924-PXL	MPG	(25..50)%	no (no legal basis)
R-134a (CH2F.CF3)	O	ready-to-use	no (no legal basis)
R-407C	O	ready-to-use	no (no legal basis)
Sentinel R100	MPG	ready-to-use	no (no legal basis)
Sentinel X500	MPG	(0..50)%	no (no legal basis)
Sodium Chloride (NaCl)	S	(6..24) %(Wt/Wt)	no (no legal basis)
Solar II	MPG	(0..50)%	no (no legal basis)
Solarfluessigkeit DC20	MPG	(30..70)%	no (no legal basis)
Solarfluessigkeit DC40	MPG	ready-to-use	no (no legal basis)
Solaris DTX	MEG	(0..40)%	no (no legal basis)
Solarliquid-L	MPG	ready-to-use	no (no legal basis)
S-SOL-VT100	MPG	(0..60)%	no (no legal basis)
Tectrol Coolprotect	MEG	(0..60)%	no (no legal basis)
Temper -10 (°C)	O	ready-to-use	no (no legal basis)
Temper -15 (°C)	O	ready-to-use	no (no legal basis)
Temper -20 (°C)	O	ready-to-use	no (no legal basis)
Temper -30 (°C)	O	ready-to-use	no (no legal basis)
Temper -40 (°C)	O	ready-to-use	no (no legal basis)
Temper -55 (°C)	O	ready-to-use	no (no legal basis)
Thermatrans PLUS TTP	MPG	(0..50)%	no (no legal basis)
Thermatrans SUSTAIN TTS	MPG	(0..50)%	no (no legal basis)
Thermatrans TT	MEG	(0..50)%	no (no legal basis)
Thermox DTX	MEG	(0..40)%	no (no legal basis)
Thermox IFT	MEG	(0..40)%	no (no legal basis)
Tyfocor	MEG	(0..100)%	no (no legal basis)
Tyfocor G-LS	MPG	ready-to-use	no (no legal basis)
Tyfocor HTL	MPG	ready-to-use	no (no legal basis)
Tyfocor L	MPG	(0..50)%	no (no legal basis)
Tyfocor LS	MPG	ready-to-use	no (no legal basis)
ZITREC F	MPG	(0..50)%	no (no legal basis)
ZITREC LC	MPG	(0..60)%	no (no legal basis)

**Legend:**

MEG	Mono-Ethylene Glycol based (volume fraction mentioned in %)
MPG	Mono-Propylene Glycol based (volume fraction mentioned in %)
O	Various other chemical bases (volume fraction mentioned in %)
S	Salt based solutions (salt fraction given in weight percentage: Wt%)!

**Technical Support**

For technical support, please contact your local Sontex agent or Sontex SA directly.

**Hotline Sontex:** [support@sontex.ch](mailto:support@sontex.ch) +41 32 488 30 04

The detailed declaration of conformity can be found on our homepage: [www.sontex.ch](http://www.sontex.ch)

Technical modifications subject to change without notice

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List of Special Liquids\_V08\_2010\_en