



SOLVAY

asking more from chemistry®



SOLKANE®



SOLKATHERM® SES36

High Temperature Working Fluid

Product-Description

- Thermodynamic fluid
- Azeotropic mixture
- Liquid at ambient temperature
- Working fluid for thermodynamic cycles
- Favourable physiological / toxicological properties
- Chemically and thermally stable
- Non-flammable
- Excellent dielectric properties
- Excellent material compatibility

Applications

- Direct contact cooling
- Heat pipes
- ORC-cycles
- Heat transfer fluid
- High temperature heat pumps

Material Compatibility

SOLKATHERM® SES36 has a wide compatibility range with many common materials. It is generally compatible with all non-fluorinated plastics and rubbers, if we exclude as notable exceptions PMMA and natural rubber.

Due to the relative chemical similarity, the compatibility of SOLKATHERM® SES36 with fluorinated plastics and rubbers is not as wide as it could be expected from the superior chemical resistance that normally those materials are able to assure. As an example, some fluorinated rubbers o-rings (Viton® types) are not suitable in systems filled with SOLKATHERM® SES36. As a positive exception, PTFE has proven to be compatible.

Thermoplastics	Substance	Compatibility
PVC	Polyvinylchloride	+
PE-HD	High-density polyethylene	+
PMMA	Polymethyl methacrylate	-
PC	Polycarbonate	+
PP	Polypropylene	+
Nylon 66		+
PS	Polystyrene	+
PETG	Polyethylene terephthalate	+
PTFE	Polytetrafluoroethylene	+
Elastomers		
Neoprene		+
Viton® A		-
EPDM rubber		+
Natural rubber		-
Nitril rubber		+
Silicone		o

Table 1: + compatible / o border line / - not compatible

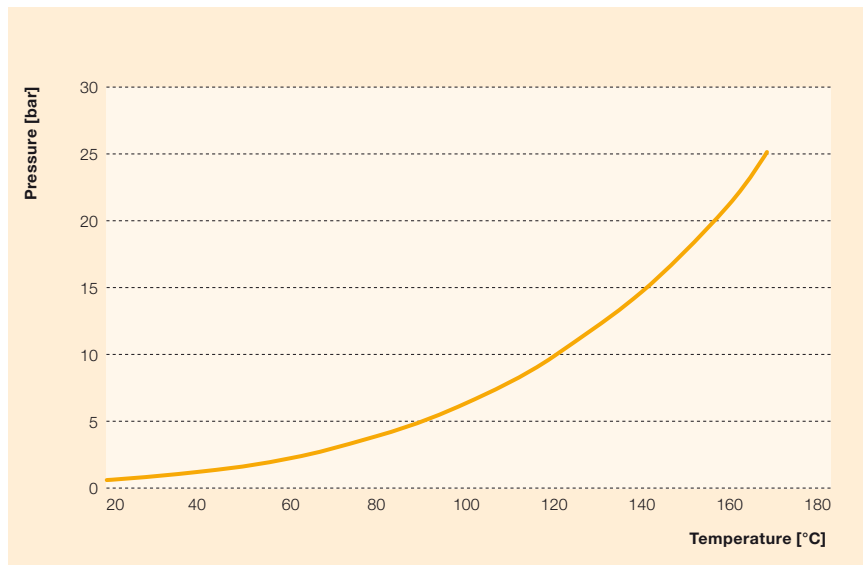
All compatibility tests have been carried out at normal conditions of temperature and pressure. In case of peculiar requirements, please refer to our technical staff in order to verify if it is possible to carry out tests under special conditions.

Physical Properties

Average Molecular Weight	kg/Kmol	184.5
Glide	°C	0
Boiling Point at 1.013 bar	°C	35.6
Critical Temperature	°C	177.6
Critical Pressure	bar	28.5
Density Liquid (saturated) ¹⁾	kg/m ³	1,365.4
Density Vapour (saturated) ¹⁾	kg/m ³	5.3
Heat of Vaporisation ¹⁾	kJ/kg	129.2
Specific Heat Capacity (Liquid) ¹⁾	kJ/kg K	1.21
Volume Resistivity ¹⁾	Ω cm	5 · 10 ⁸
Dielectric Constant ¹⁾		6.9

¹⁾ at 25 °C

Vapour Pressure



Thermodynamic Properties

T °C	p bar	rho' kg/dm ³	rho'' kg/m ³	v' dm ³ /kg	v'' dm ³ /kg	h' kJ/kg	h'' kJ/kg	r kJ/kg	s' kJ/(kgK)	s'' kJ/(kgK)	
20.00	0.58	1.377	4.55	0.726	219.77	220.28	353.34	133.06	1.0705	1.5244	
25.00	0.70	1.365	5.41	0.732	184.97	225.47	357.37	131.90	1.0877	1.5301	
30.00	0.83	1.353	6.39	0.739	156.38	230.72	361.43	130.71	1.1047	1.5358	
35.00	0.99	1.341	7.53	0.746	132.76	236.03	365.50	129.47	1.1216	1.5417	
40.00	1.17	1.328	8.84	0.753	113.17	241.41	369.60	128.18	1.1384	1.5477	
45.00	1.38	1.315	10.33	0.760	96.85	246.86	373.71	126.84	1.1551	1.5538	
50.00	1.62	1.302	12.02	0.768	83.20	252.38	377.83	125.44	1.1718	1.5600	
55.00	1.89	1.289	13.94	0.776	71.73	257.97	381.95	123.98	1.1884	1.5662	
60.00	2.20	1.275	16.11	0.784	62.06	263.62	386.08	122.46	1.2049	1.5725	
65.00	2.55	1.261	18.56	0.793	53.87	269.34	390.21	120.86	1.2215	1.5789	
70.00	2.93	1.247	21.32	0.802	46.91	275.14	394.33	119.20	1.2379	1.5853	
75.00	3.36	1.232	24.41	0.811	40.97	281.00	398.45	117.45	1.2543	1.5917	
80.00	3.84	1.218	27.86	0.821	35.89	286.93	402.55	115.62	1.2708	1.5982	
85.00	4.38	1.203	31.73	0.832	31.52	292.94	406.64	113.71	1.2872	1.6046	
90.00	4.96	1.187	36.03	0.842	27.75	299.02	410.72	111.69	1.3035	1.6111	
95.00	5.61	1.172	40.83	0.853	24.49	305.19	414.77	109.58	1.3200	1.6176	
100.00	6.32	1.156	46.18	0.865	21.65	311.44	418.79	107.34	1.3364	1.6241	
105.00	7.09	1.140	52.13	0.877	19.18	317.79	422.78	104.98	1.3529	1.6305	
110.00	7.93	1.123	58.75	0.890	17.02	324.25	426.73	102.48	1.3694	1.6369	
115.00	8.84	1.107	66.13	0.904	15.12	330.82	430.64	99.82	1.3861	1.6432	
120.00	9.83	1.089	74.37	0.918	13.45	337.53	434.49	96.97	1.4028	1.6495	
125.00	10.90	1.072	83.60	0.933	11.96	344.38	438.28	93.91	1.4198	1.6556	
130.00	12.05	1.054	93.97	0.948	10.64	351.39	441.99	90.60	1.4369	1.6616	
135.00	13.30	1.036	105.69	0.965	9.46	358.59	445.60	87.01	1.4543	1.6675	
140.00	14.64	1.018	119.04	0.983	8.40	366.00	449.08	83.08	1.4719	1.6730	
145.00	16.08	0.998	134.43	1.002	7.44	373.64	452.39	78.75	1.4899	1.6783	
150.00	17.62	0.979	152.42	1.022	6.56	381.56	455.48	73.93	1.5083	1.6830	
155.00	19.28	0.958	173.91	1.044	5.75	389.77	458.26	68.49	1.5272	1.6872	
160.00	21.07	0.935	200.39	1.070	4.99	398.32	460.56	62.25	1.5466	1.6903	
165.00	23.00	0.909	234.57	1.101	4.26	407.25	462.15	54.90	1.5666	1.6919	
Range wet vapour	170.00	25.07	0.875	280.90	1.143	3.56	416.60	462.66	46.06	1.5873	1.6912



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