FM COOLANT

Synthetic freezing point depressant and anti corrosion protection concentrate for food and beverage processing equipment

Performance Features

- **Depress freezing point of water solution**
- **Improves boiling point of water solution**
- **Prevents corrosion of materials**
- **Compatible with commonly used materials**
- **Long fluid fife: low maintenance cost**
- **To achieve good corrosion protection a minimum concentration of 30% FM COOLANT should always be used (even if the required antifreeze protection would already be satisfied at lower concentration)**
- **Neutral odour and taste**


Industrial coolants


Low temperature

Partner Programme

NSF registered

Certifications and Specifications

- **NSF H1**
- **Kosher**
- **Halal**

Description

FM COOLANT is a propylene glycol-based fluid containing anti-corrosion additives, for use in closed systems to chill or cool food or beverages in Food Industry applications. It is based on a careful blend of synthetic fluids and selected additives chosen for their ability to meet the stringent requirements of the food and beverage industry. Registered by NSF (Class H1) for use where there is potential for incidental food contact. Produced according to

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FLT Quality Standards, in facilities where HACCP audit and Good Manufacturing Practice have been implemented and form part of the quality and hygiene management systems ISO 9001 and ISO 21469.

Applications

• To be mixed with water to make a solution suitable for application. See tables on next page. The mixing water should have low hardness. If not available the use of demineralised or distilled water is recommended
• For use as secondary cooling, or heating, in the food and beverage industry. For use in closed cooling systems, including those where there is a potential for incidental food contact
• STRICTLY NOT for use in applications where direct contact between coolant and food itself, either packed or unwrapped, will occur: e.g., not for use where food is immersed in coolant for rapid chilling
• Various deicing, defrosting applications
• Freeze, burst and corrosion protection of pipelines

General Instructions

It is recommended that the condition of the fluid and the equipment be regularly checked to ensure safe operation. Special attention should be given to the possibility that the fluid, especially if it becomes contaminated with food ingredients, becomes a medium for bacterial or fungal growth.

Seal and Paint Compatibility

Compatible with the elastomers, gaskets, seals and paints normally used in food machinery lubrication systems.

Handling and Storage

All food grade lubricants should be stored separately from other lubricants, chemical substances and foodstuffs and out of direct sunlight or other heat sources. Store between 0 °C and +40 °C. Provided that the product has been stored under these conditions we recommend that the product be used within 2 years from the date of manufacture. Upon opening a pack, the product must be used within 1 year (or within 2 years of date of manufacture, whichever is the sooner).

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Technical Data: FM COOLANT

Characteristics	Value	Unit	Test Method
Refractive Index at 20°C	1,431	nd20	DIN 51423-2
NSF Reg. No.	144789		
Colour	Clear and bright liquid		
Density [+15 °C]	1056	kg/m³	ISO 12185
Flashpoint	112	° C	ISO 2590
Pourpoint (50% in water)	-60	° C	ISO 3016
Kin. Visc. [+20 °C]	47	mm²/s	ISO 3104
Operating temperatures	-45 to +120	° C	LLS 134
pH (50% in water)	8,5		
Reserve alkalinity	12,4	ml 0,1M HCL/10 ml	ASTM D 1121
Specific heat [+20 °C]	2,45	kJ/kg K	
Thermal conductivity [+20 °C]	0,22	W/m K	

LLS = LUBRITECH Laboratory Specification
Typical for current production. Variations in these characteristics may occur.

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Typical Freezing and Boiling Points of FM COOLANT and Water solutions				
Wt. %	Vol. %	Freezing Point °C	Boiling Point °C 1,013ba	Refractive Index +20 °C
0,0	0,0	0	100	1,333
5,0	4,8	-2	100	1,339
10,0	9,5	-3	100	1,334
15,0	14,3	-5	100	1,349
20,0	19,2	-7	101	1,355
25,0	24,0	-10	101	1,360
30,0	28,9	-12	102	1,365
35,0	33,8	-15	103	1,371
40,0	38,8	-19	104	1,378
45,0	43,7	-25	104	1,382
50,0	48,7	-32	106	1,386
55,0	53,7	-40	106	1,392
60,0	58,8	-48	107	1,398
65,0	63,8	below -51	107	1,402
70,0	68,9	below -51	108	1,405
75,0	74,0	below -51	110	1,410
80,0	79,2	below -51	114	1,415
85,0	84,3	below -51	119	1,419
90,0	89,5	below -51	128	1,423
95,0	94,8	below -51	138	1,427
100,0	100,0	below -51	167	1,431

Properties of FM Coolant at 30% Concentration by volume in water				
Temperature °C	Specific Heat kJ/kg.K	Density kg/m³	Thermal conductivity W/mK	Viscosity mPas
-10	3,78	1039	0,414	9,50
0	3,81	1036	0,428	6,43
25	3,88	1026	0,456	2,43
50	3,95	1013	0,476	2,22
75	4,01	996	0,489	0,74
100	4,08	977	0,493	0,51
120	4,13	959	0,492	0,41

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Properties of FM Coolant at 40% Concentration by volume in water				
Temperature °C	Specific Heat kJ/kg.K	Density kg/m³	Thermal conductivity W/mK	Viscosity mPas
-20	3,62	1051	0,369	49
-10	3,64	1048	0,380	21
0	3,67	1045	0,391	11,4
25	3,75	1034	0,413	3,51
50	3,83	1019	0,429	1,59
75	3,91	1002	0,438	0,92
100	3,99	981	0,441	0,62
120	4,05	962	0,439	0,49

Properties of FM Coolant at 50% Concentration by volume in water				
Temperature °C	Specific Heat kJ/kg.K	Density kg/m³	Thermal conductivity W/mK	Viscosity mPas
-30	3,38	1063	0,328	220
-20	3,42	1060	0,338	72
-10	3,46	1056	0,346	30
0	3,50	1052	0,357	16,33
25	3,59	1040	0,374	4,93
50	3,69	1024	0,385	2,14
75	3,78	1005	0,392	1,18
100	3,87	984	0,393	0,76
120	3,95	964	0,390	0,58

We are specialized in developing products for extreme tribological problems in cooperation with end users.
FUCHS LUBRITECH provides service and individual advice. Please contact us!
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