

DOW NORKOOL SLH HEAT TRANSFER FLUIDS

Application

Norkool SLH is an ethylene glycol based coolant blended with only virgin ethylene glycol, diluted to a 50% solution using ultra-pure deionized water. Used as a cooling medium in both primary and secondary cooling applications, the fluid contains an inhibitor package specially designed for use in high speed stationary engines, such as Caterpillar, Waukesha, and White Superior. Norkool SLH coolants are specified and endorsed by Waukesha. It is also recommended for use in line heaters to prevent corrosion on the walls of the line heater where the only flow in the system is generated by convection. The custom designed inhibitor package also provides critical liner protection in high speed engines from cavitations (formation and sudden collapse of vapor bubbles around the cylinder liner due to the turbulence caused by the motion of the cylinder within the sleeve, resulting in severely pitted liners). The inhibitors form a dense barrier between the metal and the fluid by reacting with the metal surface and providing corrosion protection that meets or exceeds ASTM standards for corrosion. Norkool inhibitors include a ferrous inhibitor for the protection of carbon steel and a soft metal inhibitor for the protection of brass and copper.

Analytical Services

Annual routine analysis is provided at no cost by the Dow Chemical Company to assist in the proper maintenance of the cooling system. Information includes pH, reserve alkalinity, inhibitor levels, contaminants, and other pertinent information. Sample kits are available from your coolant supplier. More frequent analytical testing is available in critical circumstances or on a cost bases.

Inhibitors

Norkool offers a complete line of inhibitors to replenish the system upon the recommendation of the Dow laboratory. Inhibitor levels will naturally decrease over an extended period of time as required by the system to maintain the film surface.

Selecting the Right Dilution – More is not necessarily better!!

Norkool SLH Coolants are available in 30%, 40%, and 50% dilutions from your supplier. Selection of the dilution should be based on the maximum lowest temperature expected in your geographic location yet remaining as low in concentration as possible to maintain adequate heat transfer in summer months. It is necessary to use a minimum concentration of 30% to achieve adequate corrosion and protection against biological contamination.

Norkool SLH

	50%	40%	30%
Freezing Point	-37.9 F	-13.1	3.0
Burst Protection	<-100.0 F	-65	-15
Boiling Point	226.0 F	221.4	218.2
Refractive Index	1.3849	1.3749	1.3647
Specific Heat @ 100 F BTU.oF	0.814	0.855	0.895
Reserve Alkalinity	12	11	10
Specific Gravity @ 100 F	1.068	1.054	1.039
Weight (pounds per gallon)	9.0	8.90	8.81

Table 4
Compatibility of Various Materials with NORKOOL® Heat Transfer Fluids

	Temperature		
	20°F (-7°C)	77°F (25°C)	176°F (80°C)
"Adriprene" L-100	Good	Good	Poor
Black Rubber 3773	Good	Good	Poor
Buna N	Good	Good	Good
Buna S	Good	Good	Fair
Butyl Rubber	Good	Good	Good
EPDM	Good	Good	Good
EPR Rubber	Good	Good	Good
"Hycar," D-24	Good	Good	Fair
"Hypalon"	Good	Good	Poor
"Kalrez"	Good	Good	Good
Natural Rubber Gum	Good	Good	Poor
Neoprene 7797	Good	Good	Fair
Red Rubber #107	Good	Good	Poor
"SaraJoy" 300	Good	Good	Poor
Silicone No. 65	Good	Good	Good
"Viton" A	Good	Good	Good

✓ Good *Good resistance of the material to UCARTHERM® HTE.*
 ✓ Fair *Some limited service may be achieved with the material. However, the elastomer may undergo moderate softening and swelling, or, conversely, some moderate hardening and shrinkage.*
 ✓ Poor *The material is not suitable because of severe softening and swelling or deterioration and brittleness.*

Note: The use temperature is very significant in determining the suitability of the material.

Freezing Pt. °F	Vol %	Boiling Point °F (°C)
20	15.75	214.8 (101.5)
10	25	217.0 (102.8)
0	32	219.0 (103.9)
-10	38.5	221.1 (105.1)
-20	43.5	223.0 (106.1)
-30	47.75	224.8 (107.1)
-40	51.5	226.7 (108.1)
-70	60	231.7 (110.9)

Boiling Points Norkool Coolants

For more information, contact your authorized Dow Norkool Supplier

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