



## **Industrial Coolants and Heat Transfer Fluids**

The Dow Chemical Company has been a leading supplier of glycol based heat transfer fluids to the Oil & Gas industry for more than 50 years. NORKOOL™ Industrial Coolant and UCARTHERM™ Heat Transfer Fluid provide higher performance for a range of applications in the Oil & Gas Industry.

<b>Dow Fluid</b>	<b>Temp Range (°C)</b>	<b>Industry</b>	<b>Base Glycol</b>
NORKOOL™ SLH	-50 to 135	Oil & Gas	Ethylene Glycol
UCARTHERM™ OG	-50 to 135	Oil & Gas	Ethylene Glycol
NORKOOL LTC	-50 to 135	Oil & Gas	Propylene Glycol
UCARTHERM AL	-50 to 135	Oil & Gas	Ethylene Glycol
DOWTHERM™ SR-1	-50 to 120	HVAC	Ethylene Glycol

### **NORKOOL™ SLH Industrial Coolant**

NORKOOL™ SLH Industrial Coolant is Dow's premium heat transfer fluid for gas compression engines and line heaters. The enhanced formulation for ethylene glycol-based NORKOOL Coolants includes Dow's patented anti-scaling technology with our phosphate- and nitrite-based corrosion inhibitor. This combination offers long-term protection of cast iron, copper alloys and solders, even when elevated levels of chloride, sulfate or water hardness are present. NORKOOL Coolants are more "forgiving" than competitive fluids and promotes the long and reliable life of the system with proper maintenance and operation. In addition, they offer exceptional cavitation and crevice corrosion protection which is especially important for the protection of the cylinder wet liner sleeves of large industrial engines. NORKOOL Coolants satisfy all requirements of the ASTM D3306 and ASTM D4985 standards and fully comply with ASTM D6210 (except for tests that require high temperature aluminum compatibility including ASTM D2809 and ASTM D4340). NORKOOL Coolants are also compatible with aluminum at fluid temperatures up to 65°C as it complies with ASTM D1384.

### **UCARTHERM™ OG Heat Transfer Fluid**

UCARTHERM™ OG Heat Transfer Fluid inhibited ethylene glycol-based coolants are robust industrial formulations designed to protect against over-heating in the summer and circulating-system freeze-up in the winter. Formulated with an extensive and synergistic inhibitor package, they also provide excellent corrosion protection in gas compressor engines, meeting or surpassing all ASTM requirements for glycol-based engine coolants. Typical applications include large, stationary engines such as those running compressors to transmit natural gas through pipeline distribution systems, gas distribution line heaters, and other indirect heaters. UCARTHERM OG meets the requirements of ASTM D3306 and ASTM D4985 and is compatible with aluminum to 65 °C.

### **NORKOOL™ LTC Industrial Coolant**

Customers may now choose propylene glycol-based or ethylene glycol-based NORKOOL™ Coolants. Dow offers a propylene glycol (PG)-based coolant called NORKOOL LTC Coolant, which offers provides the same exceptional protection against wet sleeve liner cavitation and system corrosion as the EG-based NORKOOL SLH Industrial Coolant. The key difference is that NORKOOL LTC Coolant is an environmentally friendly option with the low toxicity of a PG-based product. NORKOOL SLH Coolant, which is EG-based, has higher toxicity levels but offers excellent heat transfer and more efficient freeze protection.

### **UCARTHERM™ AL Industrial Coolant**

UCARTHERM™ AL Industrial Coolant is Dow's newest addition to the UCARTHERM product line. This ethylene glycol-based coolant is a fully formulated product with a distinct unique additive package intended primarily for use in jacket water cooling systems for heavy duty diesel engines, particularly those containing aluminum components, while offering excellent freeze protection. This product meets ASTM D4985, ASTM D3306, and ASTM D6210 standards.

### **DOWTHERM™ SR-1 Heat Transfer Fluid**

DOWTHERM™ SR-1 Heat Transfer Fluid is a formulation of 95.5 weight percent ethylene glycol and a specially designed package of industrial corrosion inhibitors. The fluid is dyed fluorescent pink for leak detection purposes. Solutions in water offer freeze protection to below -50°C (-60°F) and burst protection to below -73°C (-100°F). Solutions of this fluid can be used in closed-loop, water based HVAC applications, process heating and cooling, and select food industry applications within the recommended temperature range.

## Typical Heat Transfer Corrosion Rates for ASTM D1384

Material of Construction	Corrosion Rate, mils per year (mpy)			
	UCARTHERM™ OG	NORKOOL™ SLH	Uninhibited MEG	ASTM Maximum
Copper	0.14	0.12	0.2	0.45
Brass	0.097	0.19	0.3	0.47
Solder	0.16	0.01	6.0	1.17
Steel	0.02	0.02	15	0.51
Cast Iron	0.02	0.00	7.0	0.56
Aluminum	2.2	1.3	4.2	4.40

### A Note About Product Safety

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product. Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to help Dow products to not be used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to offer reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.