



Selection guide

MARLOTHERM[®]
Heat transfer fluids by Eastman

Marlotherm[®] heat transfer fluids

Eastman offers a family of heat-stable fluids developed specifically for indirect transfer of process heat. Eastman's heat transfer fluids can meet the operating needs of virtually any single- or multiple-station heat-using system. In properly designed systems, our fluids will perform within their expected temperature ranges to provide excellent thermal stability.

Available in various formulations and operating ranges, our heat transfer fluids provide outstanding benefits—economy, efficient operation, minimum maintenance, and precise temperature control. Contact Eastman for detailed performance information on specific heat transfer fluids.

Experience you can trust

Marlotherm[®] heat transfer fluids are well established and have a strong heritage, with 50 years of history in the industry. Building on Eastman's already extensive chemistry expertise, Marlotherm brings additional products and insight to our heat transfer fluid product offerings. Our years of experience and expanded product portfolio allow us to provide clients with expert guidance for their heat transfer fluid needs and continue delivering superior value.

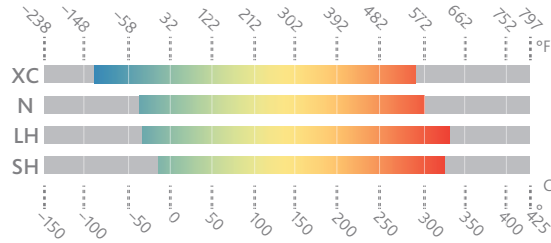
Products for your application

Marlotherm heat transfer fluids are designed for indirect cooling and heating of production, conversion processes, and energy recovery. They ensure dependable operation for a wide variety of system applications.

Marlotherm fluids are available in multiple products formulated specifically for pressurized and nonpressurized systems. They can help support safe operations, lower capital costs, and reduce maintenance costs.



Product temperature scales at a glance



Global footprint

Eastman's heat transfer fluids are the top-selling synthetic fluids in the world, with manufacturing facilities and product supply on four continents. As one of the largest heat transfer fluid producers, Eastman has the infrastructure to deliver sizable quantities of synthetic fluids.

Strong foundations

With a long, robust history of thermal fluid innovation, our high-performance fluids have a strong foundation of more than 50 years in the industry.

Expert technical support



Our TLC Total Lifecycle Care® program is designed to support customers throughout a system's life cycle. This comprehensive program includes sample analysis, system design support, operational training, safety awareness training, start-up assistance, and flush and refill fluids.

Unique to the market, Fluid Genius™ combines artificial intelligence with half a century of Eastman expertise to monitor and maximize the life cycle of heat transfer fluids for a myriad of system applications.

High-performance portfolio

Designed to provide precise temperature control in a variety of applications, Marlotherm heat transfer fluids provide proven performance, superior product life, and worry-free fluid maintenance.



SI units

Liquid phase heat transfer

MARLOTHERM LH

Wide-temperature-range fluid
for heating and cooling

MARLOTHERM SH

High-boiling-point, low-viscosity,
low-pressure heat transfer fluid

Typical properties^a

Appearance	Clear liquid	Clear liquid
Composition	Benzyltoluene	Dibenzyltoluene
Recommended bulk temperature	330°C	325°C
Maximum film temperature	380°C	380°C
Normal boiling point	278°C	392°C
Pumpability: at 300 cSt (mm ² /s) at 2000 cSt (mm ² /s)	-67°C <-70°C	-1°C -15°C
Pour point	-79°C	-34°C
Flash point, COC	132°C	219°C
Fire point, COC	157°C	250°C
Autoignition temperature ^b	510°C (DIN 51794)	500°C (DIN 51794)
Fully developed turbulent flow (Re = 10,000, 3.05 m/s, 2.54-cm tube)	1°C	61°C
Kinematic viscosity, cSt (mm ² /s)	-20°C 17.0 100°C 1.08 200°C 0.47 300°C 0.30	0°C 261 100°C 3.18 200°C 0.917 320°C 0.398
Density at 25°C (kg/m ³)	992	1,039
Density, kg/m ³	-20°C 1025 100°C 936 200°C 856 300°C 767	0°C 1055 100°C 989 200°C 919 320°C 827
Heat capacity, kJ/(kg•K)	-20°C 1.47 100°C 1.88 200°C 2.22 300°C 2.55	0°C 1.49 100°C 1.85 200°C 2.22 320°C 2.67
Thermal conductivity, W/(m•K)	-20°C 0.136 100°C 0.122 200°C 0.111 300°C 0.099	0°C 0.1331 100°C 0.1201 200°C 0.1070 320°C 0.0910
Vapor pressure, kPa	100°C 0.22 200°C 13.1 300°C 162	100°C — 200°C 0.723 320°C 21.1

Geographic availability^c

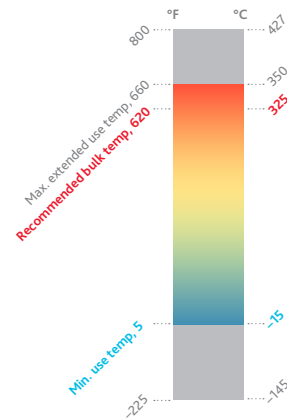
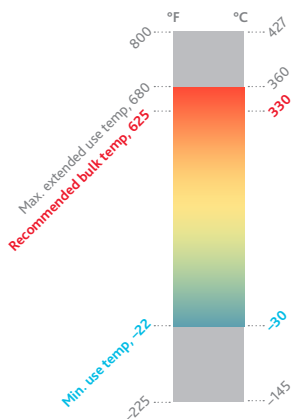
Globally

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SI units

MARLOTHERM XC

High-performance, wide-temperature-range heat transfer fluid^d

Liquid phase heat transfer

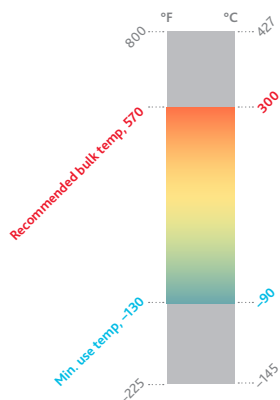
Typical properties ^a	
Appearance	Clear liquid
Composition	Cumene
Recommended bulk temperature	300°C
Maximum film temperature	320°C
Normal boiling point	152°C
Pumpability: at 300 cSt (mm ² /s) at 2000 cSt (mm ² /s)	<-90°C —
Pour point	<-90°C
Flash point, CC	38.8°C
Fire point, COC	50°C
Autoignition temperature ^b	-420° C (DIN 51794)
Fully developed turbulent flow (Re = 10,000, 3.05 m/s, 2.54-cm tube)	-84°C
Kinematic viscosity, cSt (mm ² /s)	-50°C 3.11 0°C 1.28 150°C 0.34 300°C 0.228
Density at 25°C (kg/m ³)	857
Density, kg/m ³	-50°C 918 0°C 878 150°C 745 300°C 554
Heat capacity, kJ/(kg•K)	-50°C 1.44 0°C 1.65 150°C 2.28 300°C 3.17
Thermal conductivity, W/(m•K)	-50°C 0.144 0°C 0.133 150°C 0.098 300°C 0.065
Vapor pressure, kPa	100°C 20.7 200°C 301 300°C 1528
Geographic availability ^c	
Globally	

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^d Marlotherm XC is a high-performance, wide-temperature-range heat transfer fluid for heating and cooling in the most varied fields of applications.



English units

Liquid phase heat transfer

MARLOTHERM LH

Wide-temperature-range fluid
for heating and cooling

MARLOTHERM SH

High-boiling-point, low-viscosity,
low-pressure heat transfer fluid

Typical properties^a

Appearance	Clear liquid		Clear liquid			
Composition	Benzyltoluene		Dibenzyltoluene			
Recommended bulk temperature	625°F		620°F			
Maximum film temperature	715°F		715°F			
Normal boiling point	532°F		738°F			
Pumpability: at 300 cSt (mm ² /s) at 2000 cSt (mm ² /s)	-88°F <-94°F		30°F 5°F			
Pour point	-110°F		-29.2°F			
Flash point, CC	270°F		426°F			
Fire point, COC	315°F		482°F			
Autoignition temperature ^b	950°F (DIN 51794)		932°F (DIN 51794)			
Fully developed turbulent flow (Re = 10,000, 10 ft/s, 1-in. tube)	34°F		142°F			
Kinematic viscosity, cSt (mm ² /s)	0°F	15.5	20°F	588		
	200°F	1.17	200°F	3.60		
	400°F	0.46	400°F	0.882		
	600°F	0.29	620°F	0.384		
Density at 75°F (lb/gal)	8.29		8.67			
Density, various units	0°F	8.54 lb/gal	63.9 lb/ft ³	20°F	8.84 lb/gal	66.1 lb/ft ³
	200°F	7.85 lb/gal	58.7 lb/ft ³	200°F	8.29 lb/gal	62.0 lb/ft ³
	400°F	7.11 lb/gal	53.2 lb/ft ³	400°F	7.64 lb/gal	57.2 lb/ft ³
	600°F	6.27 lb/gal	46.9 lb/ft ³	620°F	6.85 lb/gal	51.3 lb/ft ³
Heat capacity, Btu/(lb•°F)	0°F	0.353		20°F	0.351	
	200°F	0.445		200°F	0.436	
	400°F	0.534		400°F	0.534	
	600°F	0.622		620°F	0.644	
Thermal conductivity, Btu/(h•ft•°F)	0°F	0.0785		20°F	0.0774	
	200°F	0.0712		200°F	0.0700	
	400°F	0.0638		400°F	0.0615	
	600°F	0.0564		620°F	0.0521	
Vapor pressure	200°F	1.14 mmHg	0.022 psia	200°F	0.05 mmHg	0.001 psia
	400°F	113.3 mmHg	2.19 psia	400°F	6.36 mmHg	0.123 psia
	600°F	1649.7 mmHg	31.9 psia	620°F	184.1 mmHg	3.56 psia

Geographic availability^c

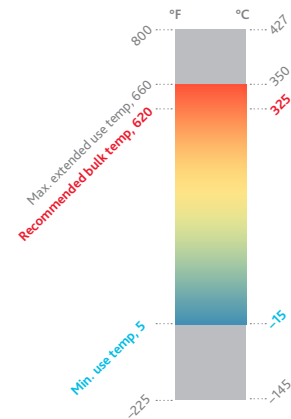
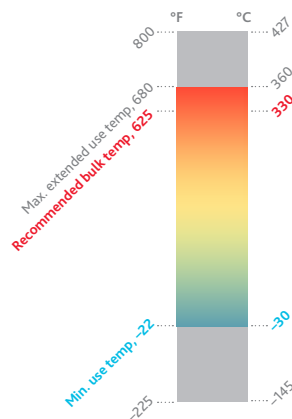
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English units

Liquid phase heat transfer

MARLOTHERM XC

High-performance, wide-temperature-range heat transfer fluid^d

Typical properties^a

Appearance	Clear liquid		
Composition	Cumene		
Recommended bulk temperature	570°F		
Maximum film temperature	608°F		
Normal boiling point	306°F		
Pumpability: at 300 cSt (mm ² /s) at 2000 cSt (mm ² /s)	<-130°F —		
Pour point	<-130°F		
Flash point, CC	102°F		
Fire point, COC	122°F		
Autoignition temperature ^b	~788°F (DIN 51794)		
Fully developed turbulent flow (Re = 10,000, 10 ft/s, 1-in. tube)	-119°F		
Kinematic viscosity, cSt (mm ² /s)	-100°F	5.54	
	200°F	0.486	
	400°F	0.273	
	570°F	0.228	
Density at 75°F (lb/gal)	7.16 lb/gal		
Density, various units	-100°F	7.82 lb/gal	58.5 lb/ft ³
	200°F	6.66 lb/gal	49.8 lb/ft ³
	400°F	5.74 lb/gal	42.9 lb/ft ³
	570°F	4.62 lb/gal	34.6 lb/ft ³
Heat capacity, Btu/(lb•°F)	-100°F	0.321	
	200°F	0.488	
	400°F	0.605	
	570°F	0.757	
Thermal conductivity, Btu/(h•ft•°F)	-100°F	0.0866	
	200°F	0.0643	
	400°F	0.0499	
	570°F	0.0377	
Vapor pressure	200°F	121.5 mmHg	2.35 psia
	400°F	2,472 mmHg	47.8 psia
	570°F	11,480 mmHg	222 psia

Geographic availability^c

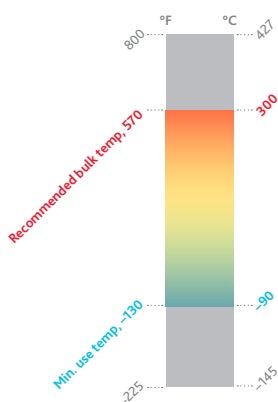
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TLC Total Lifecycle Care® program

The TLC Total Lifecycle Care® program is designed to support all Eastman heat transfer fluid customers throughout their systems' life cycle. This comprehensive program includes system design support, start-up assistance, training, sample analysis, flush and refill fluids, and our fluid trade-in program. In North America, call our hotline at 1-800-433-6997 or contact your local sales or technical representative.



In-service heat transfer fluid sample analysis

When heat transfer fluids are used within suggested temperature limits, they can provide years of trouble-free service. To help users get maximum life, Eastman offers testing of in-service heat transfer fluids to detect contamination, moisture, thermal degradation, and other conditions that may impact system performance. This comprehensive analysis includes acid number, kinematic viscosity, insoluble solids, low boilers, high boilers, and moisture content. Additional special analysis may be available on request. Sample analysis includes sample collection kits that are easy to use. Most systems should be sampled annually. Users should also sample any time a fluid-related problem is suspected.

FLUID GENIUS

Results of the test are presented in a detailed report that provides suggestions for corrective action. Test results are stored in a database for future reference. Customers can access their specific test information in their Fluid Genius account at FluidGenius.net.

Customers can also access their specific test information via our new, advanced heat transfer fluid management platform, Fluid Genius™. It's a revolutionary patent-pending digital service that gives engineers and operations managers predictive insights to optimize heat transfer fluid performance—providing the ultimate edge. From sampling kits to expert guidance, our comprehensive service keeps you on track.

Contact your account manager to get started on Fluid Genius—and keep your system up and running. To conduct your sample analysis, you will be provided with an all-inclusive, easy-to-use sample kit. Kit design may vary depending on fluid and shipping and lab requirements within the region. To learn more and request access to Fluid Genius, visit fluidgenius.net.

Technical service hotline

Experienced technical service specialists can help answer your questions regarding heat transfer fluid selection, system start-ups, system design, and operational issues. For questions in North America, call our hotline at 800-433-6997. For questions in other regions, contact your local technical support representative.

System design support

Eastman regularly assists the world's largest engineering, chemical, and equipment manufacturing companies on the design and operation of heat transfer systems. Our liquid phase and vapor phase design guide information and system design data have been field tested in numerous installations. Eastman also conducts engineering seminars for customers, engineering firms, and equipment manufacturers to cover a wide range of heat transfer fluid system design and operational issues. Customers can request a technical service visit to audit heat transfer systems for fluid loss and leak prevention opportunities.

Operational training

Eastman believes that by sharing our experience with customers, we can help improve system design, promote safety, and reduce overall cost. Customers can take advantage of Eastman's heat transfer system operation and product training programs. These programs are customized to suit the varied needs of frontline technicians, operations supervisors, maintenance technicians, and design engineers. Customers can also receive training assistance for dealing with important topics like fluid safety and handling.

Safety awareness training

At Eastman, we're "All in for safety." We provide our customers safety awareness training that focuses on the design, start-up, operation, and maintenance of heat transfer fluid systems.

Start-up assistance

Eastman provides start-up assistance by reviewing procedures and offering suggestions to reduce typical problems. Customers can also receive help by calling their local Eastman technical specialist or through on-site assistance.

Eastman's fluid sustainability support*

As part of our commitment to sustainability and the environment, Eastman offers a trade-in program for used Marlotherm and competitive heat transfer fluids. Depending on the fluid and its condition, it may be turned in for potential credit toward the purchase of new Marlotherm.

*Marlotherm fluid trade-in program is only available in Germany. Contact your local sales representative for more information.

For more information, visit Eastman.com/Marlotherm.

EASTMAN
The results of insight™

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