Effective	1-1-69
Supersedes	5-1-66
TERMS	Net 30 days

THERMINOL FR-LO Temp
THERMINOL FR-0
THERMINOL FR-1
THERMINOL FR-2
THERMINOL FR-3

DELIVERY

Domestic	F.O.B. — See Price Box
Export	F.A.S. Atlantic & Gulf Ports only.

PRICES U.S. $ per Lb. Minimum order $50.00

THERMINOL	TANK CAR CODE 11 [illegible] & [illegible] Gal.	TANK TRUCK CODE 12 [illegible] Gal. Min.	[illegible] LB. DRUM — CODE [illegible]			5 GAL. CAN CODE [illegible]
			CL/TL*	3-39 Drums	1-4 Drums	
F.O.B. Anniston, Ala., only FR-LO Temp 6145-100-11-09 FR-0 6145-000-11-09	.25 lb	.25 lb	.27 lb.	.30 lb.	.32 lb.	.40 lb.
F.O.B. Ex. Whse. West Coast	—	—	—	.35 lb.	.37 lb.	.45 lb.
F.A.S. Atlantic & Gulf Ports	—	—	.285 lb.	.33 lb.	.35 lb.	.45 lb.
F.O.B. Anniston, Ala., or Sauget, Ill. Seller's Option FR-1 1040-245-11-03/09 FR-2 1040-265-11-03/09 FR-3 1040-285-11-03/09	.23 lb.	.23 lb.	.25 lb.	.28 lb.	.30 lb.	.38 lb.
F.O.B. Ex. Whse. West Coast	—	—	—	.33 lb.	.35 lb.	.43 lb.
F.A.S. Atlantic & Gulf Ports	—	—	.265 lb.	.31 lb.	.33 lb.	.43 lb.

*Truckload quantities—tariff minimum but not less than 20,000 lbs. net. A mixed truckload quantity may consist of various Therminol Fluids.

STANDARD CONTAINERS

Type	Net Weight	Gross Wt. Approx.	Cubic Feet
All — 55 gal metal drum	600 lbs.	648 lbs.	10 3/4
FR-LO Temp & FR-1 5 gal metal drum	55 lbs.	60 lbs.	1
FR-0, 2 & 3 5 gal metal drum	60 lbs.	65 lbs.	1

SAMPLES 16 ounces. Mailable.

SHIPPING CLASSIFICATION

Domestic	Chlorinated Diphenyl/Synthetic Resin Liquid NOIBN

HANDLING PRECAUTIONS

CAUTION! Contains chlorinated hydrocarbons. Avoid prolonged breathing of vapors or mists. Avoid contact with eyes or prolonged contact with skin. If skin contact occurs, remove by washing with soap and water. If clothing becomes soaked with fluid, launder before wearing again.

LABELING REQUIREMENTS Product label required by law.

MONS 093960

MONSANTO SPECIFICATIONS

Property	THERMINOL FR-LO Temp	FR-0	FR-1	FR-2	FR-3
Appearance	Clear, colorless liquid	Clear, colorless liquid	Clear, colorless liquid	Clear, colorless liquid	Clear, colorless liquid
Density—lbs./cu. ft.	89.2-90.5 at 77°F	87.4-88.7 at 77°F	86.2-86.9 at 77°F	87.7-88.5 at 149°F	93.2-93.9 at 149°F
Acid No.—mg. KOH/gm.	0.05 max	0.05 max	0.01 max	0.01 max	0.01 max
Moisture—ppm	75 max	75 max	50 max	50 max	50 max
Thermal Stability	Curve available on request				
Vapor Pressure	Refer to Technical Bulletin		Refer to Therminol Manual		
Viscosity—centipoise at 100°F	5.1 max	12.5 max	26 max	75 max	—
at 210°F		2.0 max	3.5 max	5.0 max	10 max
at 600°F		—	0.35 max	0.36 max	0.42 max
Specific Heat—BTU/lb./°F	0.26 min at 100°F	0.27 min at 100°F	0.28 min at 85°F	0.26 min at 85°F	0.24 min at 130°F
Thermal Conductivity BTU/hr., sq. ft., °F/ft.	0.062 min at 100°F	0.0610 min at 100°F	0.0608 min at 85°F	0.0587 min at 85°F	0.0569 min at 90°F
Fire Point	None	None	None	None	None

GENERAL INFORMATION

Therminol is Monsanto's trademark for industrial heat transfer fluids.

Therminol FR fluids are fire resistant heat transfer media produced to rigid specifications important to heat transfer.

There are five Therminol FR products:

Therminol FR-LO Temp—with extremely low temperature pumpability: minus 40°F with positive displacement pumps.

Therminol FR-0—with very low temperature fluidity -0°F. pumpability.

Therminol FR-1—with low temperature fluidity—excellent for processes requiring both heating and cooling.

Therminol FR-2—with the optimum balance of properties for use in most common industrial heat transfer systems.

Therminol FR-3—with highest boiling point for special processing equipment applications.

Typical Physicial Properties

	Therminol FR-LO Temp	Therminol FR-0	Therminol FR-1	Therminol FR-2	Therminol FR-3
Specific Gravity @ 77°F	1.445	1.415	1.385	1.452	1.543
Weight per gallon: @ 77°F	12.05	11.80	11.55	12.11	12.87

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Uses Liquid heat transfer media

Literature Therminol FR Heat Transfer Sales Booklet
Therminol FR Engineering Heat Transfer Manual
Therminol FR-0 Engineering Heat Transfer Bulletin
Therminol FR-LO Temp Engineering Heat Transfer Bulletin

Benefits	Good Qualities
1. Safety—Protects plant and personnel from fires, pressure explosions.	Therminol FR fluids are fire resistant—(the only heat transfer fluids listed with Underwriters' Laboratories)—and they operate in non-pressurized systems because of their high boiling points and low vapor pressures.
2. Reliability — Assures maximum production, minimum maintenance.	Therminol FR liquid heating eliminates the local hot spots of direct fired processing; eliminates the corrosion problems and scaling of water boilers; eliminates the condensate return problems and condensate sub cooling of organic vapor systems.
3. Economy—Minimum cost for equipment, operation.	Fire resistance and its recognition by insurance carriers allows elimination of certain costly safety devices. Non-pressurized operation eliminates the need for costly high pressure pipes, equipment—does not require the attendance of a licensed engineer in most cities and states.

COMPETITION

Dowtherm A—Diphenyl/Diphenyl Oxide— Dow Chemical Co.
Mobiltherm 600—Petroleum Oil—Mobil Oil Co., Inc.
Humbletherm 500—Petroleum Oil—Humble Oil Co.

AUTHORIZED DISTRIBUTORS None

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