

# XCELTHERM 500

## *Engineered for efficient heating and cooling*

If you have systems running both heating and cooling applications, we've designed a heat transfer fluid that cost-effectively meets both temperature requirements and provides you with outstanding thermal stability over its entire operating range.

Radco Industries XCELTHERM® 500 is a polyalphaolefin heat transfer fluid specifically engineered to provide you with an excellent heat transfer efficiency throughout its bulk fluid operating range of -80°F to 500°F.

### **Superior thermal stability maximizes fluid life**

One of the key advantages of XCELTHERM 500 is its superior thermal stability at its highest operating temperatures. In this way, XCELTHERM 500 provides you with longer fluid life, when compared to many competitive fluids. And longer fluid life means a better return on your heat transfer fluid investment!

### **XCELTHERM 500 – Gain versatility and system savings!**

XCELTHERM 500 is one of the most cost-effective fluids on the market for systems requiring both heating and cooling capabilities. And, it can serve double duty for straight heating or straight cooling applications.

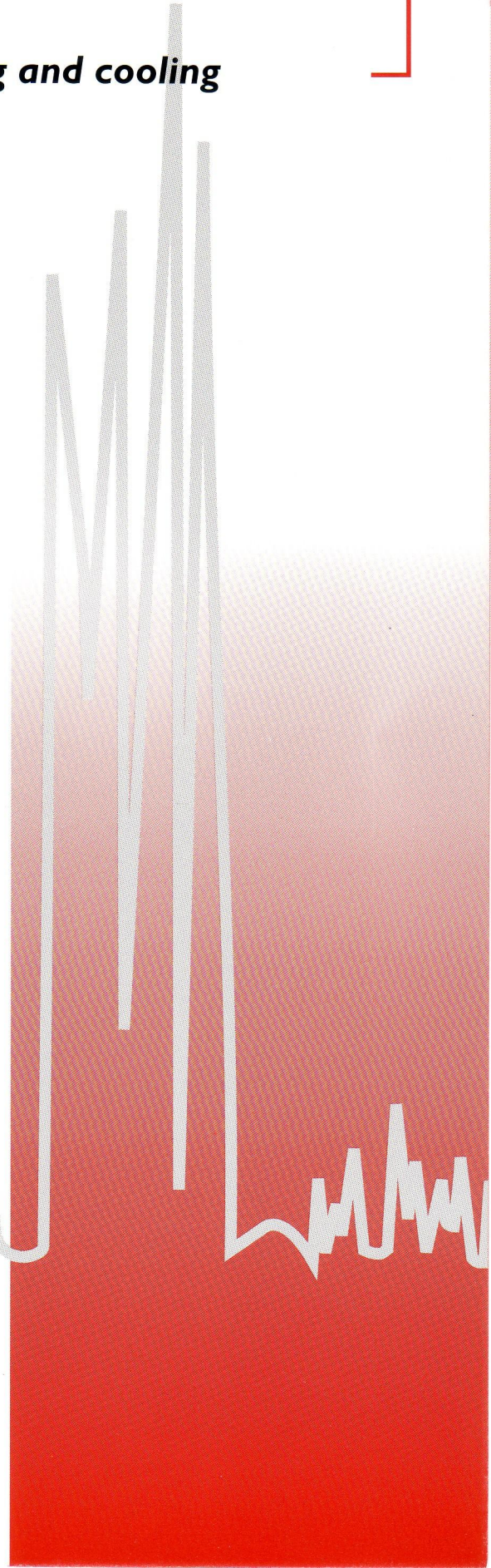
As an added benefit, with a pumpability of -80°F, XCELTHERM 500 provides you with excellent low-temperature start-up abilities. This eliminates the need for heat tracing in all but the coldest weather conditions.

Start realizing the benefits of XCELTHERM 500 for your system – and your bottom line – today!

- Use XCELTHERM 500 as a cost-effective replacement fluid for system change-outs; and
- Fill new systems with XCELTHERM 500 – for even greater savings.

Note: In many cases, XCELTHERM 500 also may be added directly to your system as make-up. However, there may be some situations where it is not appropriate, so please talk to a Radco fluid engineer directly, prior to using XCELTHERM 500 for make-up.

In the future, you can realize additional savings with XCELTHERM 500 through our fluid exchange and reprocessing programs.



## **XCELTHERM 500 benefits employees, the environment and you!**

XCELTHERM 500 is odorless – often a plus for workers. No special handling precautions are required, and it offers no significant eye, skin, inhalation or ingestion hazards. And, XCELTHERM 500 meets FDA and USDA requirements for “incidental food contact.”

Finally, when you purchase XCELTHERM 500, your initial investment keeps yielding returns – to the environment and you. Every product in our line can be returned to us for reprocessing – saving you money, while benefiting the environment.

### **Service you can count on – at the speed you need**

XCELTHERM 500 is backed by the finest analytical and in-plant troubleshooting in the industry. Our sales force is composed of graduate engineers who are trained heat transfer fluid specialists. And, we offer a wide variety of analytical services to help you maximize the efficiency of your system, including:

- **Fluid analysis** – with data returned to you within four working days.
- **Historical fluid analytical data** – prepared graphically to help you:
  - Evaluate system trending data at a glance;
  - Enhance your ability to forecast and plan for fluid reprocessing; and
  - Quickly see the effects of preventive maintenance measures, such as filtration and reprocessing.
- **Engineering graphs** – specifically formatted to give you the degree of accuracy needed for system design engineering.
- **On-site assistance** – if there's trouble in the plant, a Radco fluid specialist engineer arrives quickly to help you minimize downtime and maximize savings.

Of course, there's no charge for these services. It's part of our commitment to bring you the highest possible level of service and support.

### **Heat Transfer fluids – it's all that we do!**

Since 1971, Radco Industries has focused on one line of business – providing heat transfer fluid solutions engineered to enhance the full range of temperature processing needs.

Our goal is to help you transfer BTUs – efficiently, cost-effectively and safely. That's why we focus all of our energy on bringing you the best heat transfer fluids in the business – via our XCELTHERM product line.

### **Take the first step in reducing your heat transfer costs**

XCELTHERM 500 is already helping companies improve system efficiencies worldwide. For more information on the benefits XCELTHERM 500 can bring to your operations, please contact your Radco fluid specialist, or call us today at:

**1-800-854-4865** in the U.S., or **1-630-232-7966** worldwide.

# XCEL THERM 500 ENGINEERING PROPERTIES\*

Temperature °F	°C	Viscosity cP	Density		Heat Capacity		Thermal Conductivity		Vapor Pressure	
			lb/ft <sup>3</sup>	kg/m <sup>3</sup>	BTU/lb-°F	J/g-K	BTU/ft-hr-°F	W/m-K	psia	kg/cm <sup>2</sup>
-80	-62.2	3137.372	52.45	840.23	0.434	1.816	0.0816	0.1412	-	-
-70	-56.7	1706.297	52.24	836.84	0.439	1.839	0.0814	0.1409	-	-
-60	-51.1	927.849	52.03	833.45	0.445	1.862	0.0812	0.1406	-	-
-50	-45.6	504.828	51.81	830.06	0.450	1.885	0.0811	0.1403	-	-
-40	-40.0	274.598	51.60	826.67	0.456	1.909	0.0809	0.1400	-	-
-30	-34.4	149.353	51.39	823.28	0.462	1.932	0.0807	0.1397	-	-
-20	-28.9	86.564	51.18	819.89	0.467	1.955	0.0805	0.1394	-	-
-10	-23.3	64.619	50.97	816.50	0.473	1.978	0.0803	0.1391	-	-
0	-17.8	48.229	50.76	813.11	0.478	2.002	0.0802	0.1387	-	-
10	-12.2	36.000	50.54	809.72	0.484	2.025	0.0800	0.1384	-	-
20	-6.7	26.873	50.33	806.33	0.489	2.048	0.0798	0.1381	-	-
30	-1.1	20.020	50.12	802.94	0.495	2.071	0.0796	0.1378	-	-
40	4.4	15.685	49.91	799.55	0.501	2.095	0.0794	0.1375	-	-
50	10.0	12.289	49.70	796.16	0.506	2.118	0.0793	0.1372	-	-
60	15.6	9.621	49.49	792.77	0.512	2.141	0.0791	0.1369	-	-
70	21.1	7.672	49.27	789.38	0.517	2.165	0.0789	0.1366	0.0001	-
80	26.7	6.346	49.06	785.99	0.523	2.188	0.0787	0.1362	0.0001	-
90	32.2	5.361	48.85	782.60	0.528	2.211	0.0785	0.1359	0.0002	-
100	37.8	4.611	48.64	779.21	0.534	2.234	0.0784	0.1356	0.0004	-
110	43.3	4.023	48.43	775.82	0.539	2.258	0.0782	0.1353	0.0008	0.0001
120	48.9	3.553	48.22	772.43	0.545	2.281	0.0780	0.1350	0.0013	0.0001
130	54.4	3.165	48.00	769.04	0.551	2.304	0.0778	0.1347	0.0020	0.0001
140	60.0	2.803	47.79	765.65	0.556	2.327	0.0776	0.1344	0.0031	0.0002
150	65.6	2.481	47.58	762.26	0.562	2.351	0.0775	0.1341	0.0046	0.0003
160	71.1	2.232	47.37	758.87	0.567	2.374	0.0773	0.1338	0.0067	0.0005
170	76.7	2.022	47.16	755.48	0.573	2.397	0.0771	0.1334	0.0095	0.0007
180	82.2	1.840	46.95	752.09	0.578	2.421	0.0769	0.1331	0.0133	0.0009
190	87.8	1.684	46.74	748.70	0.584	2.444	0.0767	0.1328	0.0183	0.0013
200	93.3	1.547	46.52	745.31	0.589	2.467	0.0766	0.1325	0.0246	0.0017
210	98.9	1.426	46.31	741.92	0.595	2.490	0.0764	0.1322	0.0327	0.0023
220	104.4	1.320	46.10	738.53	0.601	2.514	0.0762	0.1319	0.0430	0.0030
230	110.0	1.225	45.89	735.14	0.606	2.537	0.0760	0.1316	0.0557	0.0039
240	115.6	1.141	45.68	731.75	0.612	2.560	0.0758	0.1313	0.0714	0.0050
250	121.1	1.065	45.47	728.36	0.617	2.583	0.0757	0.1310	0.0905	0.0064
260	126.7	0.997	45.25	724.97	0.623	2.607	0.0755	0.1306	0.1138	0.0080
270	132.2	0.936	45.04	721.58	0.628	2.630	0.0753	0.1303	0.1418	0.0100
280	137.8	0.879	44.83	718.19	0.634	2.653	0.0751	0.1300	0.1754	0.0123
290	143.3	0.828	44.62	714.80	0.640	2.676	0.0749	0.1297	0.2152	0.0151
300	148.9	0.762	44.41	711.41	0.645	2.700	0.0748	0.1294	0.2622	0.0184
310	154.4	0.742	44.20	708.02	0.651	2.723	0.0746	0.1291	0.3175	0.0223
320	160.0	0.702	43.98	704.63	0.656	2.746	0.0744	0.1288	0.3821	0.0269
330	165.6	0.667	43.77	701.24	0.662	2.770	0.0742	0.1285	0.4572	0.0321
340	171.1	0.633	43.56	697.85	0.667	2.793	0.0740	0.1281	0.5442	0.0383
350	176.7	0.602	43.35	694.46	0.673	2.816	0.0739	0.1278	0.6445	0.0453
360	182.2	0.573	43.14	691.07	0.678	2.839	0.0737	0.1275	0.7596	0.0534
370	187.8	0.547	42.93	687.68	0.684	2.863	0.0735	0.1272	0.8912	0.0627
380	193.3	0.524	42.71	684.29	0.690	2.886	0.0733	0.1269	1.0412	0.0732
390	198.9	0.502	42.50	680.90	0.695	2.909	0.0731	0.1266	1.2115	0.0852
400	204.4	0.480	42.29	677.51	0.701	2.932	0.0730	0.1263	1.4043	0.0987
410	210.0	0.459	42.08	674.12	0.706	2.956	0.0728	0.1260	1.6219	0.1140
420	215.6	0.439	41.87	670.73	0.712	2.979	0.0726	0.1257	1.8667	0.1312
430	221.1	0.420	41.66	667.34	0.717	3.002	0.0724	0.1253	2.1413	0.1506
440	226.7	0.402	41.44	663.95	0.723	3.026	0.0722	0.1250	2.4486	0.1722
450	232.2	0.384	41.23	660.56	0.728	3.049	0.0721	0.1247	2.7915	0.1963
460	237.8	0.368	41.02	657.17	0.734	3.072	0.0719	0.1244	3.1734	0.2231
470	243.3	0.351	40.81	653.78	0.740	3.095	0.0717	0.1241	3.5975	0.2529
480	248.9	0.337	40.60	650.39	0.745	3.119	0.0715	0.1238	4.0676	0.2860
490	254.4	0.330	40.39	647.00	0.751	3.142	0.0713	0.1235	4.5874	0.3225
500	260.0	0.318	40.18	643.61	0.756	3.165	0.0712	0.1232	5.1612	0.3629

## Typical Properties of XCELTHERM 500\*

### Key Operating Temperatures

Maximum Bulk Fluid Operating Temperature	500°F	260°C
Maximum Film Temperature	550°F	288°C
Pumpability (2000 cP)	-80°F	-62°C

### Physical Properties

Composition	<i>Radco-engineered Polyalphaolefin</i>		
Odor	<i>None</i>		
Appearance	<i>Water-white, clear liquid</i>		
Flash Point (minimum)	325°F	163°C	
Fire Point (minimum)	350°F	177°C	
Autoignition Temperature (minimum)	625°F	329°C	
Density	6.58 pounds per gallon @	77°F	25°C
Specific Gravity	0.79 @	77°F	25°C
Average Molecular Weight	275		

\* Data represents typical laboratory samples and are not guaranteed for all samples.

### Health and Safety Guidelines

XCELTHERM 500 is USDA approved for incidental food contact in meat and poultry establishments. It also meets FDA criteria for incidental food contact under Section 21 of the Congressional Federal Register (CFR) Part 178.3620 (b).

XCELTHERM 500 does not present an appreciable health hazard when used in accordance with accepted manufacturing practices and no special handling precautions are warranted. Although no serious pollution hazards exist, provisions must be made to prevent significant discharge into public waters. And, disposal must be in accordance with applicable Federal, State and Local regulations. Of course, XCELTHERM 500 can be returned to Radco Industries for reprocessing.

A Material Safety Data Sheet (MSDS) is available on XCELTHERM 500. To obtain a copy of the MSDS, simply contact your Radco fluid specialist engineer or call our main office.

The MSDS contains complete health and safety guidelines regarding the use of our product. It is important to read and understand this material prior to handling and/or using XCELTHERM 500.

If you have any questions after examining the MSDS, or for more information on any aspect of our products, please contact your Radco fluid engineer specialist or give our office a call at **1-800-854-4865** in the U.S., or **1-630-232-7966** worldwide.

# Radco INDUSTRIES

P.O. Box 305 • La Fox, IL • 60147  
630-232-7966 Worldwide • 800-854-4865 US  
Fax 630-232-7968

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