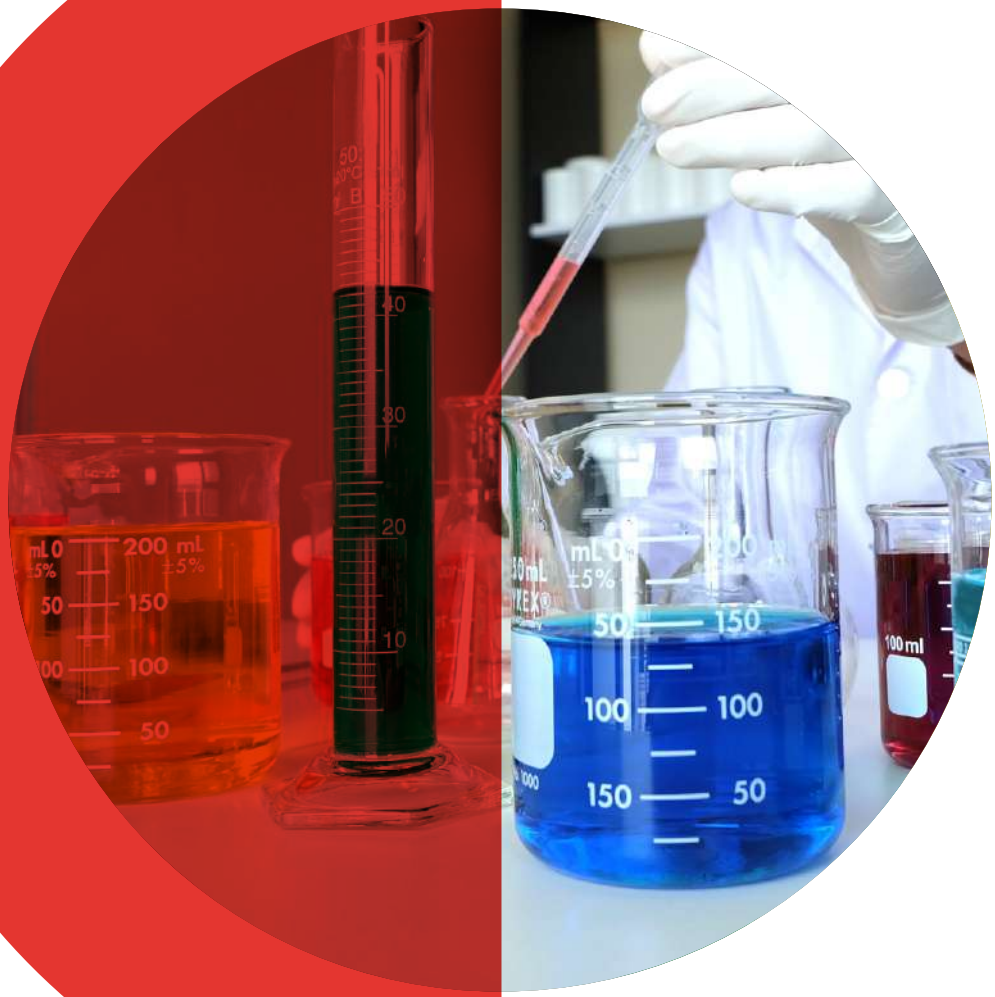
WINZZOL®
PETROCHEMICALS PVT LTD



# EUROTHERM® VP1

Premium High Temperature Liquid/Vapour Phase Heat Transfer Fluid.

Temperature Range

**11°C to 400°C | -52°F to 752°F**

1985
BCR
Bochar Carbon Removal Technology

## ABOUT **PRODUCT**

**Eurotherm VP1** is a premium synthetic heat transfer fluid optimized for ultra-high temperatures up to 400°C. Designed for both liquid and vapor phases, it delivers outstanding thermal efficiency and reliability in industrial applications. Its advanced formulation ensures superior stability and performance under extreme conditions.

## TYPICAL **PROPERTIES**

| | |
|---|---|
| Appearance | Clear white liquid |
| Composition | Biphenyl/diphenyl oxide (DPO) eutectic mixture |
| Maximum bulk temperature | 400°C (750°F) |
| Maximum film temperature | 431°C (807°F) |
| Normal boiling point | 258°C (496°F) |
| Crystallizing point | 12°C (54°F) |
| Flash point, COC (ASTM D-92) | 124°C (255°F) |
| Auto ignition temperature (DIN 51794) | 621°C (1150°F) |
| Coefficient of thermal expansion at 200°C | 0.000979/°C (0.000544/°F) |
| Heat of vaporization at maximum use temperature | 206 kJ/kg (88.7 Btu/lb) |
| Total acidity | ASTM D-664 |
| Average molecular weight | 166 |
| Pseudocritical temperature | 499°C (930°F) |
| Pseudocritical pressure | 33.1 bar (480 psia) |
| Pseudocritical density | 327 kg/m3 (20.4 lb/ft3) |
| Moisture content, maximum (ASTM E-203) | 300 ppm |
| Sulphur content (ASTM D-7691) | <10 |

"The property mentioned here is based on the tested sample and may vary slightly across different samples."

# KEY ADVANTAGES OF EUROTHERM VP1

01 **Remarkable Heat Transfer Properties:** EUROTHERM® VP1 excels in efficiently transferring heat, ensuring optimal thermal performance.

02 **Accurate Temperature Control:** The fluid's ability to function effectively in the vapor phase allows for precise temperature management, crucial for demanding processes.

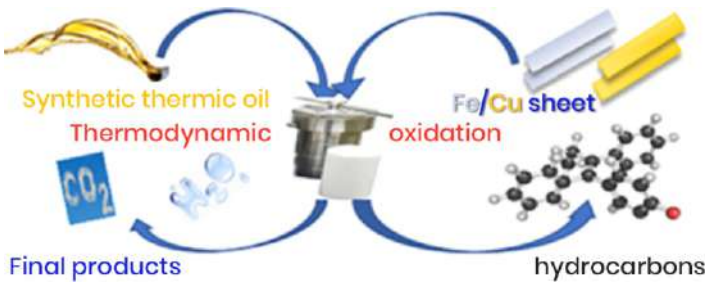
03 **Highest Thermal Stability and Anti Oxidation Technology**

04 **BCR Technology Create Turbulent Flow to Remove Carbon from the Fluid:** While operation & give a sustainable lifelong quality and longest life of the fluid.

05 **Low Viscosity with Desire Thermal Conductivity Ensure Lowest Pumping Energy use and Highest Heat Transfer Ratio.**

06 **Selective Synthetic Additives Formulation Ensure a Long Life and High Thermal Conductivity.**

Highest Thermal Stability and Anti Oxidation Technology




BCR Technology Create Turbulent Flow to Remove Carbon from the Fluid

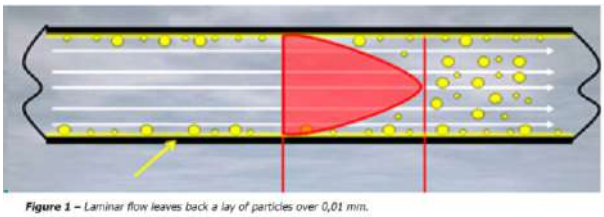


*Figure 1 – Laminar flow leaves back a lay of particles over 0,01 mm.*

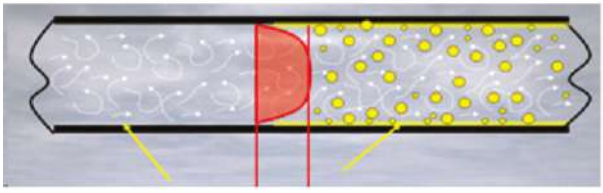


*Figure 2 – Turbulent flow leaves back a lay of particles under 0,001 mm.*

## ADVANTAGES OF **LOW VISCOSITY FLUIDS**

**Low Viscosity Fluids** enhance thermal conductivity by promoting turbulent flow in heat transfer systems. This turbulence increases the heat transfer ratio while minimizing pumping energy use, resulting in efficient thermal management.

## APPLICATION **METHOD & INDUSTRIES**

Indirect close loop Thermic Fluid Heater up to **320°C** Temperature.

| | |
|---|---|
| Chemical Industries | Distillation Process |
| Textile Industries | Lube Oil Refining |
| Petrochemicals Industries | And many more. |

# PROPERTIES AT CERTAIN TEMPERATURE

| Temperature | | Liquid Density | Liquid Heat Capacity | Heat of Vaporisation | Liquid Enthalpy[b] | Thermal Conductivity | Liquid Viscosity | | Vapor Pressure[d] |
|---|---|---|---|---|---|---|---|---|---|
| °C | °F | kg/m$^3$ | kj/kg°K | kJ/kg | kJ/kg | W/(m·K) | cP (mPa·s) | cSt (mm$^2$/s) | kPa |
| 12 | 54 | 1068 | 1.520 | 419.4 | 0.0 | 0.1371 | 5.49 | 5.12 | - |
| 20 | 68 | 1063 | 1.545 | 414.8 | 12.4 | 0.1362 | 4.30 | 4.03 | 0.001 |
| 30 | 86 | 1054 | 1.572 | 409.2 | 27.8 | 0.1353 | 3.28 | 3.11 | 0.003 |
| 40 | 104 | 1049 | 1.605 | 404.0 | 43.9 | 0.1344 | 2.61 | 2.48 | 0.008 |
| 50 | 122 | 1040 | 1.632 | 398.6 | 60.0 | 0.1332 | 2.13 | 2.03 | 0.020 |
| 60 | 140 | 1033 | 1.661 | 393.3 | 76.5 | 0.1323 | 1.76 | 1.71 | 0.042 |
| 70 | 158 | 1025 | 1.690 | 388.2 | 93.2 | 0.1311 | 1.50 | 1.46 | 0.080 |
| 80 | 176 | 1014 | 1.720 | 382.9 | 110.1 | 0.1300 | 1.28 | 1.26 | 0.154 |
| 90 | 194 | 1006 | 1.746 | 377.8 | 127.6 | 0.1288 | 1.12 | 1.11 | 0.276 |
| 100 | 212 | 998 | 1.775 | 372.6 | 145.2 | 0.1276 | 0.984 | 0.986 | 0.478 |
| 110 | 230 | 990 | 1.803 | 367.7 | 163.0 | 0.1265 | 0.875 | 0.884 | 0.795 |
| 120 | 248 | 982 | 1.830 | 362.5 | 181.2 | 0.1252 | 0.784 | 0.798 | 1.28 |
| 130 | 266 | 974 | 1.859 | 357.5 | 199.7 | 0.1239 | 0.707 | 0.726 | 2.00 |
| 140 | 284 | 965 | 1.885 | 352.7 | 218.4 | 0.1225 | 0.642 | 0.665 | 3.05 |
| 150 | 302 | 957 | 1.913 | 347.6 | 237.5 | 0.1213 | 0.586 | 0.612 | 4.52 |
| 160 | 320 | 948 | 1.940 | 342.7 | 256.8 | 0.1196 | 0.537 | 0.566 | 6.56 |
| 170 | 338 | 940 | 1.968 | 337.8 | 276.2 | 0.1183 | 0.494 | 0.526 | 9.30 |
| 180 | 356 | 932 | 1.995 | 332.7 | 296.0 | 0.1168 | 0.458 | 0.491 | 13.0 |
| 190 | 374 | 921 | 2.022 | 327.9 | 316.2 | 0.1152 | 0.424 | 0.460 | 17.8 |
| 200 | 392 | 913 | 2.048 | 323.0 | 336.4 | 0.1138 | 0.395 | 0.432 | 23.9 |
| 210 | 410 | 904 | 2.075 | 318.2 | 357.1 | 0.1122 | 0.368 | 0.407 | 31.7 |
| 220 | 428 | 895 | 2.100 | 313.0 | 378.1 | 0.1106 | 0.345 | 0.385 | 41.5 |
| 230 | 446 | 886 | 2.128 | 308.1 | 399.0 | 0.1089 | 0.324 | 0.366 | 53.6 |
| 240 | 464 | 878 | 2.154 | 303.0 | 420.5 | 0.1073 | 0.305 | 0.348 | 68.4 |
| 250 | 482 | 866 | 2.182 | 297.8 | 442.2 | 0.1055 | 0.289 | 0.332 | 86.2 |
| 260 | 500 | 856 | 2.206 | 292.7 | 464.1 | 0.1038 | 0.272 | 0.317 | 109 |
| 270 | 518 | 848 | 2.234 | 287.5 | 486.3 | 0.1020 | 0.258 | 0.304 | 133 |
| 280 | 536 | 839 | 2.260 | 282.2 | 508.7 | 0.1001 | 0.244 | 0.292 | 163 |
| 290 | 554 | 827 | 2.287 | 276.8 | 531.5 | 0.0984 | 0.232 | 0.281 | 198 |
| 300 | 572 | 818 | 2.314 | 271.2 | 554.6 | 0.0964 | 0.221 | 0.271 | 239 |
| 310 | 590 | 806 | 2.340 | 265.5 | 577.8 | 0.0945 | 0.211 | 0.262 | 287 |
| 320 | 608 | 796 | 2.368 | 259.7 | 601.5 | 0.0926 | 0.202 | 0.254 | 340 |
| 330 | 626 | 784 | 2.396 | 253.8 | 625.2 | 0.0905 | 0.194 | 0.246 | 402 |
| 340 | 644 | 773 | 2.425 | 247.6 | 649.3 | 0.0884 | 0.185 | 0.239 | 470 |
| 350 | 662 | 762 | 2.453 | 241.3 | 673.7 | 0.0864 | 0.178 | 0.233 | 548 |
| 360 | 680 | 750 | 2.485 | 234.7 | 698.5 | 0.0843 | 0.171 | 0.227 | 635 |
| 370 | 698 | 736 | 2.518 | 227.8 | 723.4 | 0.0822 | 0.163 | 0.222 | 732 |
| 380 | 716 | 723 | 2.552 | 220.6 | 748.8 | 0.0800 | 0.158 | 0.218 | 840 |
| 390 | 734 | 710 | 2.587 | 213.3 | 774.3 | 0.0779 | 0.153 | 0.214 | 960 |
| 400 | 752 | 693 | 2.629 | 205.2 | 800.4 | 0.0757 | 0.147 | 0.211 | 1092 |
| 410 | 770 | 680 | 2.675 | 197.0 | 827.1 | 0.0732 | 0.140 | 0.208 | 1228 |
| 420 | 788 | 661 | 2.728 | 188.2 | 854.2 | 0.0709 | 0.138 | 0.206 | 1391 |

# LIFETIME **CARING PARTNER**

Our highly experienced team is committed to providing comprehensive support tailored to your needs. We offer:

LCP
LIFETIME CARING PARTNER

### Start-up Guidance

Expert assistance to ensure a smooth initial setup.

### Operational Training

Customized training programs to equip your team with essential skills.

### Sample Testing and Analysis

In-depth testing services to evaluate fluid performance and ensure quality.

### Safety Awareness Training

Programs designed to promote safety and compliance in all operations.

### System Selection and Pipeline Design Support

Expert advice to help you choose the right system & optimize pipeline design.

### Fluid Flushing & Refill Support

Efficient services to maintain system performance and fluid integrity.

With our support, you can optimize operations and enhance safety and efficiency in your processes.

## ABOUT WINZZOL

WINZZOL's EUROTHERM “HEAT TRANSFER FLUIDS” are expertly engineered for the efficient indirect transfer of process heat across various applications. These fluids excel in both single- and multiple-station heat-using systems, providing exceptional thermal stability throughout a wide temperature range.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