



## Technical Data Sheet

# SOLARBRINE® PG Series

A high-performance heat transfer fluid with effective anti-corrosion and anti-freeze properties for long-term protection of the system circuit.



**OCP**  
BRONZE™  
Member



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# TECHNICAL DATA SHEET

## SOLARBRINE® PG Series

High-Performance Green Energy Coolant and Thermal Transfer Fluid

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### 1. PRODUCT OVERVIEW

SOLARBRINE® PG series products are ready-to-use propylene glycol-based thermal management fluids designed to meet the unique needs of direct liquid cooling (DLC) applications in data centers, supercomputers, and the IT industry.

Engineered with eco-friendly corrosion inhibitors and anti-freeze additives, it provides long-term protection and stability for a wide range of cooling systems.










SOLAR APPLIED MATERIALS TECHNOLOGY CORP. is an official partner of Intel. SOLARBRINE has been selected as the coolant used in Intel's SuperFluid Technology (SuperFluid Advanced Cooling Reference Solutions – Single-Phase Partner Solutions for Ecosystem Scaling).

You can download the Partner Solutions documentation from the following link:

🔗 Please download the Partner Solutions documentation from the following URL. <https://cdrdv2.intel.com/v1/dl/getContent/787148>



## 2. KEY FEATURES

| Icon  | Feature                        | Description   |
|---|--------------------------------|---|
|    | <b>Corrosion Protection</b>    | Multi-metal protection under high and low temperatures, effective on copper, brass, aluminum alloys, and stainless steel.       |
|    | <b>Low Foam Tendency</b>       | Extremely low foaming characteristics ensure stable performance under high-speed flow and turbulence.                           |
|    | <b>Rubber Compatibility</b>    | Stable with EPDM, silicone, and fluororubber components.  |
|    | <b>Advanced OAT Formula</b>    | Organic Acid Technology (OAT) inhibitor system — phosphate-free formulation for long-lasting, environmentally safe performance. |
|    | <b>Neutral pH Balance</b>      | Formulated to maintain a nearly neutral pH range, minimizing material stress and maximizing system life.                        |
|   | <b>Freeze Resistance</b>       | Protects systems down to <b>-10°C</b> , ensuring reliable operation in cold climates.   |
|  | <b>Eco-Friendly &amp; Safe</b> | Non-toxic propylene glycol base with minimal environmental impact.  |
|  | <b>Ready-to-Use Formula</b>    | Pre-diluted with distilled water for optimal performance; no dilution required.   |
|  | <b>Easy Maintenance</b>        | Periodic replacement ensures long-term stability depending on system temperature and environment.                               |

## 3. STORAGE & SAFETY

- **Storage:** Store in a cool, dry place away from direct sunlight.
- **Safety:** Detailed hazard and safety information are available in the **SDS (Safety Data Sheet)**, updated annually.

### Certifications:

- ISO 9001 – Quality Management System
- ISO 14001 – Environmental Management System
- ISO 45001 – Occupational Safety Management System

## 4. TECHNICAL SPECIFICATIONS

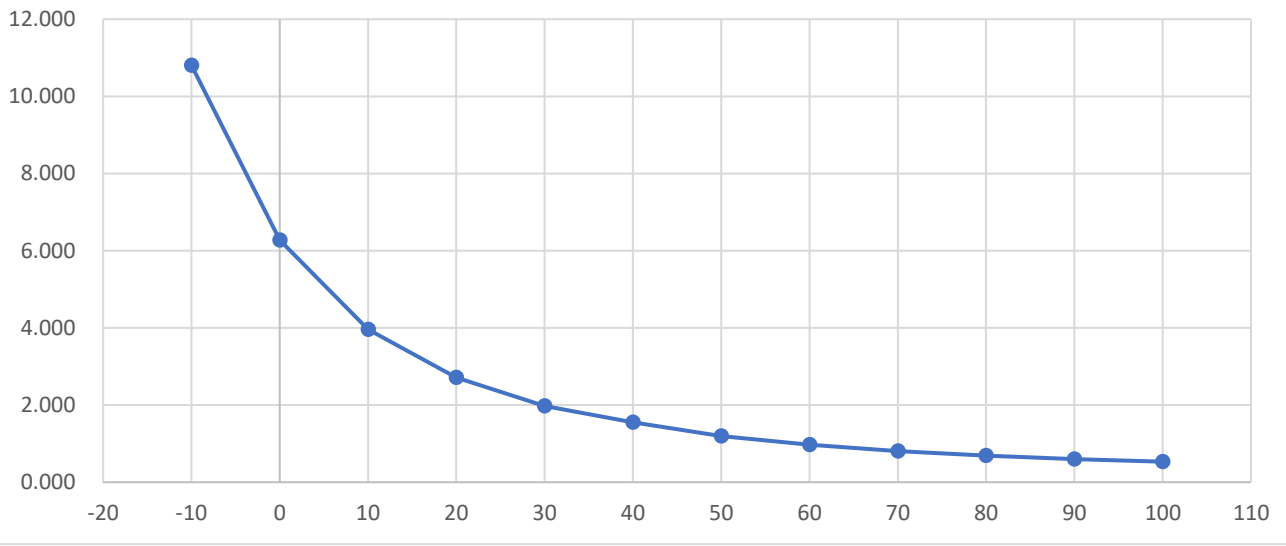
| No.   | Test Item                                |                              | Specification   | Results |
|---|--|------------------------------|---|---------|
| 1   | Appearance                               |                              | clear and transparent liquid · no sediment and suspended matter | pass    |
| 2   | Color                                    |                              | It has a distinct color   | Green   |
| 3   | Odor                                     |                              | No pungent odor   | pass    |
| 4   | pH value                                 |                              | 7.0~9.0   | 8.32    |
| 5   | Density (20°C) g/cm <sup>3</sup>         |                              | 1.026±0.01  | 1.0255  |
| 6   | Boiling point/°C                         |                              | 102~106   | 103     |
| 7   | Reserve alkalinity /mL                   |                              | Report  | 0.86    |
| 8   | Refractive index                         |                              | ≥1.36200  | 1.36441 |
| 9   | Freezing point/°C                        |                              | -10±3   | -11.6   |
| 10  | Foaming Tendency<br>88°C                 | Volume /mL                   | ≤150  | 50      |
|   |  | Break time /s                | ≤5.0  | 2.7     |
| 11  | Conductivity μs/cm 25°C                  |                              | Report  | 3570    |
| 12  | Corrosion in glassware<br>88±2°C ,336±2h | The mass change<br>mg /piece | Copper ±10  | -1.2    |
|   |  |                              | Solder ±30  | -2.4    |
|   |  |                              | Brass ±10   | -1.2    |
|   |  |                              | Carbon steel ±10  | -1.1    |
|   |  |                              | 304 steel ±10   | 0.6     |
|   |  |                              | 316L Steel ±10  | 0.1     |
|   |  |                              | Cast iron ±10   | -5.5    |
|   |  |                              | aluminum ±30  | -3.4    |
|   |  |                              | ZL107 Aluminum alloy ±10  | -1.2    |
|   |  |                              | 1060Aluminum alloy ±10  | -2.7    |
|   |  |                              | 3003Aluminum alloy ±10  | -2.6    |
|   |  |                              | 6063Aluminum alloy ±10  | -1.8    |
|   |  |                              | 5A05Aluminum alloy ±10  | -2      |
|   |  |                              | 3A21Aluminum alloy ±10  | -2.6    |
| 4043Aluminum alloy ±10                                | -2                                       |                              |   |         |
| The appearance of liquid no obvious change after test |  |                              | Pass  |         |
| 13  | Effect on rubber<br>88±2°C 336±2h        | Silicone rubber              | The mass change % ±3.0  | -0.2    |
|   |  |                              | The hardness change IRHD ±5                                     | -1      |

|    |   |                                      |                                   |      |
|----|---|--------------------------------------|-----------------------------------|------|
|    |   |                                      | Volume change % $\pm 5$           | -0.2 |
|    |   | EPDM                                 | The mass change % $\pm 3.0$       | 1.1  |
|    |   |                                      | The hardness change IRHD $\pm 5$  | 1    |
|    |   |                                      | Volume change % $\pm 5$           | 1.2  |
|    |   | Fluoro rubber                        | The mass change % $\pm 5.0$       | 3.5  |
|    |   |                                      | The hardness change IRHD $\pm 10$ | 8    |
|    |   |                                      | Volume change % $\pm 15$          | 6.9  |
| 14 | Effect on plastics<br>$\text{mg}/\text{cm}^2$<br>$88 \pm 2^\circ\text{C}$ , $336 \pm 2\text{h}$ | Polytetrafluoroethylene plastic PTFE | $\pm 1.0$                         | 0.15 |

## SOLARBRINE® PG series Physical Property

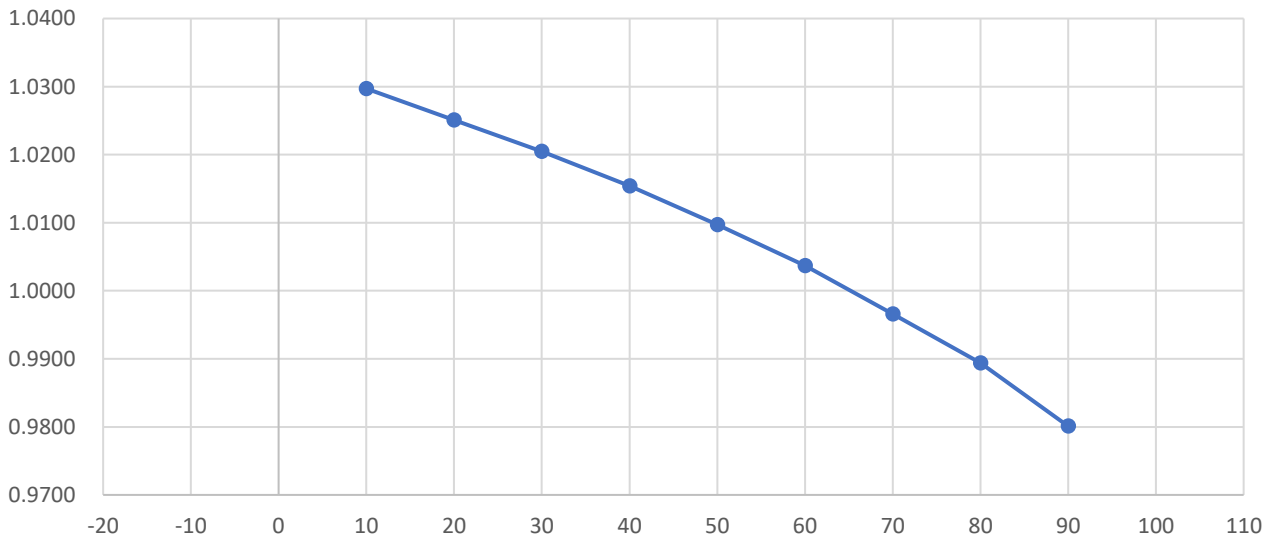
| Test temperature °C  | -10    | 0     | 10     | 20     | 30     | 40     | 50     | 60     | 70     | 80     | 90     | 100   |
|--|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| SOLARBRINE PG series<br>Kinematic viscosity $\text{mm}^2/\text{S}$             | 10.805 | 6.275 | 3.960  | 2.711  | 1.972  | 1.551  | 1.196  | 0.971  | 0.807  | 0.688  | 0.602  | 0.533 |
| SOLARBRINE PG series<br>Density $\text{g}/\text{cm}^3$                         |        |       | 1.0297 | 1.0251 | 1.0205 | 1.0154 | 1.0097 | 1.0037 | 0.9966 | 0.9894 | 0.9801 |       |
| SOLARBRINE PG series<br>Dynamic viscosity $\text{mPa}\cdot\text{s}$            |        |       | 4.077  | 2.779  | 2.013  | 1.575  | 1.208  | 0.974  | 0.804  | 0.681  | 0.590  |       |
| SOLARBRINE PG series<br>Thermal conductivity $\text{mW}/\text{m}\cdot\text{K}$ | 440.5  | 448.5 | 460.6  | 474.6  | 487.4  | 502.6  | 507.3  | 517.66 | 522.51 |        |        |       |
| SOLARBRINE PG series Specific<br>heat $\text{kJ}/\text{kg}\cdot\text{K}$       | 3.54   | 3.58  | 3.66   | 3.72   | 3.76   | 3.83   | 3.85   | 3.88   | 3.88   |        |        |       |

SOLARBRINE PG series Kinematic Viscosity mm<sup>2</sup>/S



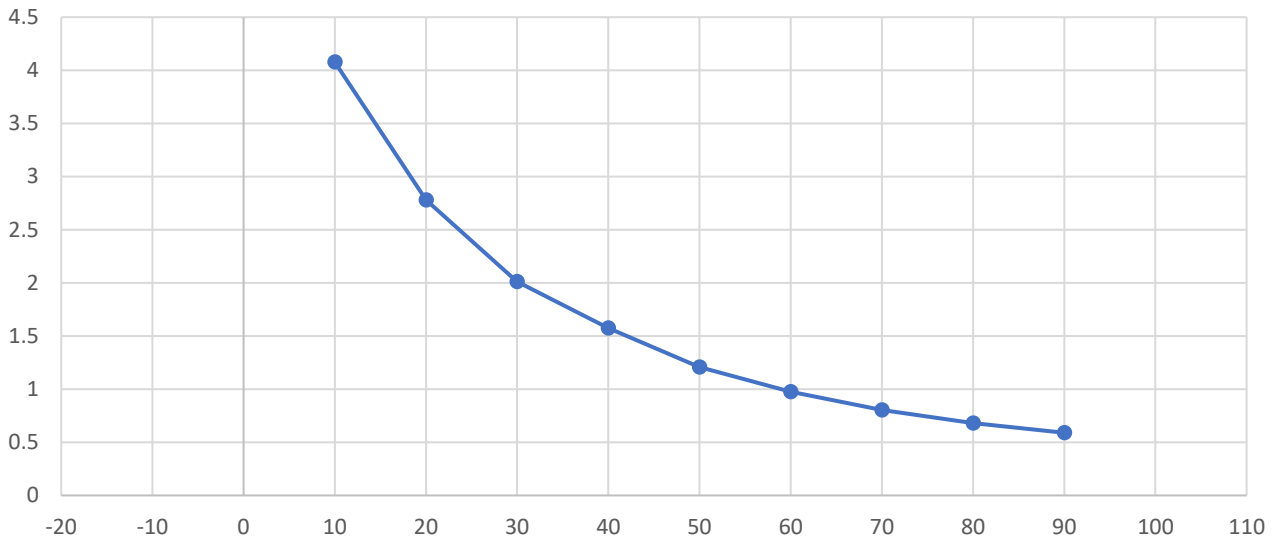
°C

SOLARBRINE PG series Density g/cm<sup>3</sup>



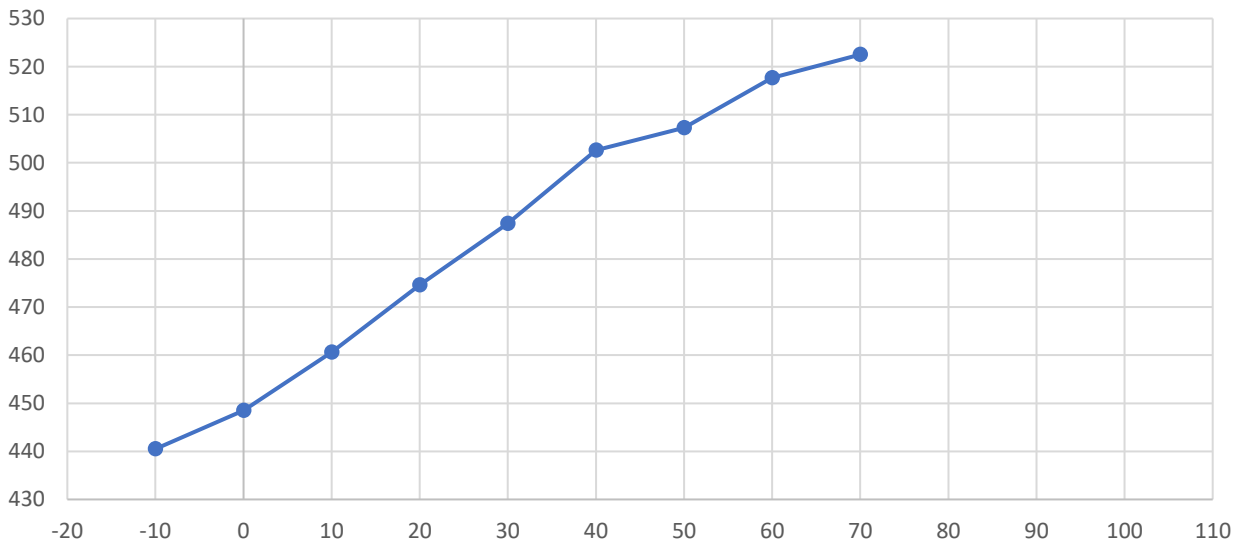
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SOLARBRINE PG series Dynamic Viscosity mPa.s



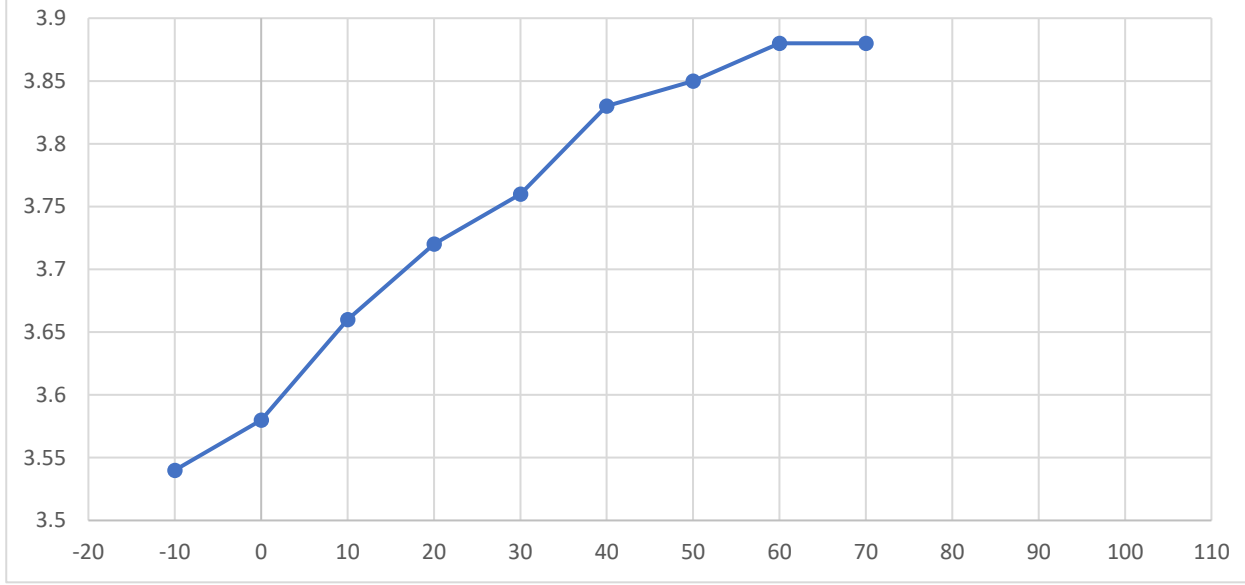
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SOLARBRINE PG series Thermal Conductivity mW/m.K



°C

SOLARBRINE PG series Specific Heat kJ/kg.K



°C