# E-Thermal Fluid

## High performance electric vehicle coolant

### Product description

E-Thermal Fluid is a high performance coolant with reduced electrical conductivity, designed for indirect cooling of the batteries of Battery Electric Vehicles (BEV's) via a cooling loop.

E-Thermal Fluid is supplied as a premix and should not be diluted prior to use.

### Customer benefits

- Formulated for improved stability and electrical conductivity for reduced shorting and electrolysis risk
- Offers good corrosion protection for metals such as aluminium, cast iron, steel and stainless steel, red and yellow metals (such as copper and brass).
- Advanced formulation contains a special neutralisation package to avoid adverse effects arising from residues of flux from Controlled Atmosphere Brazing (CAB) of aluminium.

### Product highlights

- **Formulated for improved stability and electrical conductivity**
- **Offers good metal corrosion protection**
- **Advanced formulation contains a special neutralisation package**

## Applications

E-Thermal Fluid is designed as a liquid heat transfer medium for indirect cooling of battery cells, modules and packs where coolants with low electrical conductivity are required.

E-Thermal Fluid is miscible with other low conductive fluids with a similar conductivity range.

If E-Thermal Fluid is used in systems that are designed to use products with standard electrical conductivity, this may result in accelerated aging of the fluid - leading to a loss of corrosion protection due to the increase in its electrical conductivity.

E-Thermal Fluid is not intended for use in traditional engine coolant applications. It should also not be used in fuel cell applications, or for immersive cooling applications where direct electrical contact is possible. Caution must be exercised when E-Thermal Fluid is used in combination with electrical motors, power electronics, auxiliary heaters or other heat rejecting devices, as premature increase of electrical conductivity may occur.

E-Thermal Fluid should not be used to protect the inside of drinking water systems.

## Product maintenance and handling

E-Thermal Fluid should be stored in the original unopened containers, above -20°C and below 30°C, away from direct sunlight. It may be stored for 24 months without any effect on the product quality or performance.

Periods of exposure to temperatures above 35°C should be minimized. Direct sunlight and high temperatures can degrade the quality of the product.

It is recommended to test the coolant's electrical conductivity and pH before the product is added to the system, especially when the storage period has exceeded one year.

It is advised to rinse the cooling system with E-Thermal Fluid or demineralised water (with electrical conductivity below 100 µS/cm) prior to (re)filling the cooling system; a full drain is required after rinsing. E-Thermal Fluid should not be mixed with any conventional engine coolant – these products have electrical conductivity levels more than 10 times higher, potentially causing safety hazards in the cooling system. Even slight additions will increase the electrical conductivity and may render the inhibitor system less effective.

As with any antifreeze coolant, the use of galvanized steel is not recommended for pipes or any other part of the storage/mixing installation (the copper corrosion inhibitor may react with the zinc from the galvanized parts, reducing its effectiveness in protecting red and yellow metals).

## Typical test data

| Test | Test Methods | Results |
|---|---|---|
| **Shelf Life: 24 months from date of filling indicated on the product label** | | |
| Density at 20 °C, kg/L | ASTM D1122 | 1.066 |
| Freezing point, °C | ASTM D1177 | -37 |
| Boiling point, °C | ASTM D1120 | 111 |
| eConductivity at 25 °C, µS/cm | ASTM D1125 | 96 |
| eConductivity at 60 °C, µS/cm | ASTM D1125 | 188 |

The typical test data set out above does not constitute a specification. It is indicative only and can be affected by allowable production tolerances. Chevron may modify this test data. Modified data will supersede all previous data, so please ensure you refer to the latest version of this Product Data Sheet (PDS).