# Carcoolant 774 EVO

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# Carcoolant 774 EVO

## Si-OAT technology with phosphate

**Carcoolant 774 EVO** is our most versatile and multifunctional coolant for Internal Combustion Engines and Battery Electric Vehicles that provides unique hard water and oxidation stability.
As an ethylene glycol-based coolant, Carcoolant 774 EVO contains cutting-edge silicate inhibitor technology with phosphate supported by a robust organic backbone (OAT - Organic Additive Technology).

**Carcoolant 774 EVO** is a next generation Si-OAT technology coolant.

### Reduced complexity

- Replaces former Si-OAT generation coolants
- Replaces former hybrid Si-OAT generation coolants containing borate, molybdate and nitrate

### Advanced features

- Thermal oxidative stability
- Controlled Atmosphere Brazing (CAB) flux compatibility
- State-of-the-art silicate stabilisation
- Outstanding aluminium passivation
- Excellent hard water stability

### Environment and Health

- Reduced waste thanks to long drain intervals and less replacement of materials
- Free from nitrites, borates, amines and 2-ethylhexanoic acid

### Compatibility

- Compatible with widely and commonly used construction materials such as metals, alloys, rubbers and engineering (thermo)plastics
- Compatible with other coolants, such as former generations of Si-OAT

## Application

**Carcoolant 774 EVO** can be used in a wide range of drivetrains. It is especially designed for use in modern Internal Combustion Engines (ICE), Hybrids and indirect cooling systems of Battery Electric Vehicles (BEV). **Carcoolant 774 EVO** provides year-round frost and corrosion protection. It is recommended to use at least 35 vol.% of the antifreeze in the final coolant solution. Concentrations higher than 70 vol.% are not recommended.


## Key approvals, standards and specification

**Carcoolant 774 EVO** meets the following standards:

- ASTMD3306
- JISK2234:2018
- FVVR530:2005
- BS6580:2010*
- Ö-Norm1*
- GB29743.1(PC)2014,2022*
- AFNORNF-R-15-601

*[1] except for RA* ** modified*

## Toxicity & Safety

For Toxicity and Safety Data we refer to the Safety Data Sheet. The information and advice given should be observed and due attention should be given to the precautions necessary for handling chemicals. This product should not be used to protect the inside of drinking water systems against freezing.

## Packaging

**Carcoolant 774 EVO** is available in the following packs & colours:

**Bulk**

**Pail**

**IBC (Concentrate and 50% Premix)**

**Drum (Concentrate and 50% Premix)**

Dark Blue

**Carcoolant 774 EVO** is suitable for use in:

- BMW LC 87, LC 97, LC 18
- Alfa Romeo, Fiat, Lancia 9.55523
- Chrysler MS 7170
- Opel / Vauxhall GME L1301
- VW G12 EVO (TL 774-L)
- MAN 324NF, MAN 324 Si-OAT
- MWM 0199-99-2091/12
- Iveco standard 18-1830
- Cummins 85T8-2
- DTFR 29C120 (former MB325.5)
- Deutz DQC CA-14
- Ford ESD-M97B49-A
- Volvo Cars 128 6083 / 002 & TR-31854114-002
- JI Case JIC-501
- MTU / Roll Royce MTL 5048
- Toyota 1WW/2WW Engines

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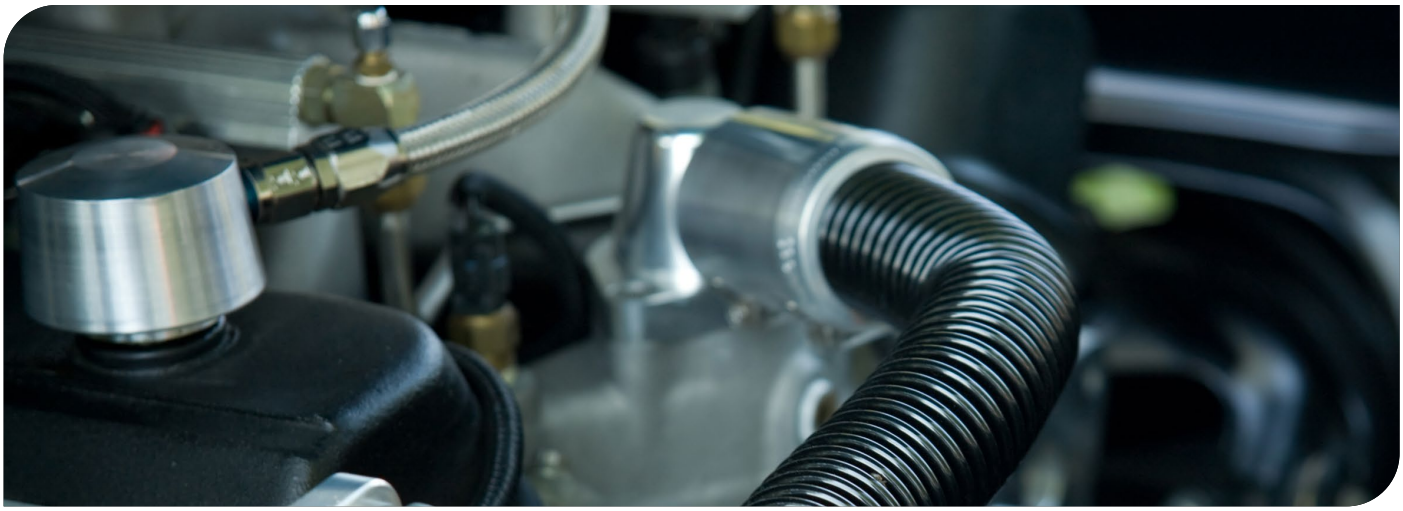
# Carcoolant 774 EVO - Technical information

| Chemical and physical properties - Carcoolant 774 EVO | | | | |
|---|---|---|---|---|
| **PROPERTY** | **CARCOOLANT 774 EVO** | **UNIT** | **ASTM D3306 REQUIREMENTS** | **METHOD** |
| Ethylene glycol | 91 min. | % w/w | base | |
| Other glycols | 1 max. | % w/w | 5% max. | |
| Inhibitor content | 4.5 typ. | % w/w | | |
| Water content | 4 max. | % w/w | 5% max. | ASTM D1123 |
| Ash content | 4.5 max. | % w/w | 5% max. | ASTM D1119 |
| Nitrite, amine, borate, 2EHA | - | | | |
| Relative density - specific gravity (15°C) | 1.123 | | 1.110 - 1.145 | ASTM D5931 |
| Density (20°C) | 1.120 typ. | kg/l | | ASTM D1122 |
| Equilibrium boiling point | 163 min. | °C | > 163 | ASTM D1120 |
| Reserve Alkalinity | 9.1 min. | | report | ASTM D1121 |
| pH (20°C) | 8.5 typ. | | | ASTM D1287 |
| Refractive Index (20°C) | 1.432 typ. | | | ASTM D1218 |

| Physical data - typical values | | | |
|---|---|---|---|
| | **50% dilution** | **35% dilution** | **Method** |
| pH | 8.2 | 8.1 | ASTM D1287 |
| Initial crystalisation, °C | -36.4 | -19.9 | ASTM D1177 |
| Density (20°C), kg/l | 1.072 | 1.051 | ASTM D1121 |
| Refractive index | 1.387 | 1.371 | ASTM D1218 |
| Equilibrium boiling point, °C | 109 | 106 | ASTM D1120 |



## Carcoolant 774 EVO - Laboratory test results

**Carcoolant 774 EVO** has been submitted to various lab tests.

## Corrosion Protection

| | ASTM D1384 glassware corrosion tests | | | | | |
|---|---|---|---|---|---|---|
| | Weight loss in mg/coupon[1] | | | | | |
| | BRASS | COPPER | SOLDER | STEEL | CAST IRON | ALUMINIUM |
| ASTM D3306 (max.) | 10 | 10 | 10 | 10 | 10 | 10 |
| Carcoolant 774 EVO | 0 | 0 | 1 | 0 | 0 | 0 |

[1] *Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.*

| | Aluminium heat rejection test (Hot surface corrosion test) |
|---|---|
| | Weight change in mg/cm²/week[1] |
| ASTM D3306 (max.) | 1.0 |
| Carcoolant 774 EVO | -0.1 |

[1] *Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.*

| | ASTM D2570 - Simulated service corrosion test (Circulation test) | | | | | |
|---|---|---|---|---|---|---|
| | Weight loss in mg/coupon[1] | | | | | |
| | BRASS | COPPER | SOLDER | STEEL | CAST IRON | ALUMINIUM |
| ASTM D3306 (max.) | 20 | 20 | 60 | 20 | 20 | 60 |
| Carcoolant 774 EVO | 2 | 3 | 20 | 0 | 0 | -2 |

[1] *Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.*

| | ASTM D2809 - Water pump cavitation test | | |
|---|---|---|---|
| | PUMP RATING[1] | pH | |
| ASTM D3306 requirement | > / = 8 | Before test | After test |
| Carcoolant 774 EVO | 8 | 8.01 | 7.6 |

[1] *1ASTM D3306 requires a pump rating of 8 or higher on a scale of 10*

| | JIS K2234:2018 - Circulating corrosion properties (30v%, 88°C, 1000Hrs) | | | | | |
|---|---|---|---|---|---|---|
| | Weight change in mg/coupon[1] | | | | | |
| | BRASS | COPPER | SOLDER | STEEL | CAST IRON | ALUMINIUM |
| JIS K2234:2018 | 0.30 | 0.30 | 0.60 | 0.30 | 0.30 | 0.60 |
| Carcoolant 774 EVO | 0.03 | 0.03 | -0.07 | 0.00 | 0.22 | 0.04 |

[1] *Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a - sign.*

| | pH | |
|---|---|---|
| | Before test | After test |
| JIS K2234:2018 | 6.55 to 11 | +/- 1.0 |
| Carcoolant 774 EVO | 8.06 | -0.01 |

## Shelflife & storage requirements

**Carcoolant 774 EVO** can be stored for minimum 3 years in unopened containers without any effect on the product quality for performance. The product should be stored above -20°C and preferably at ambient temperatures. Periods of exposure to temperatures above 35°C should be minimised. It is strongly advised not to expose the coolant in translucent packages to direct sunlight because this can result in fading of the colour or discoloration over time. This reaction can be accelerated if coupled with high ambient temperatures. It is therefore advisable to store the coolant indoors, to use new and not recycled containers and where possible packages with a UV filter. As with any antifreeze coolant, the use of galvanised steel is not recommended for pipes or any other part of the storage/mixing installation and for packaging.

## Compatibility and mixability

**Carcoolant 774 EVO** is compatible with most other coolants based on ethylene glycol such as (former) Si-OAT coolant generations. Exclusive use of **Carcoolant 774 EVO** is however recommended for optimum performance. As for any coolant, we recommend the use of deionised or distilled water to prepare the ready-to-use dilutions for optimal performance and controlled quality. We refer to our product information leaflet on water quality recommendations. Contact your local Area Sales Manager for more information.

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## Contact:

For more information on this range of products please contact your local Univar Solutions representative:

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