



# **CoolSpec**

**Coolant & Antifreeze**

A range of  
exceptionally versatile

## **summer coolants & winter antifreeze**

highly effective  
and developed  
for all conditions

# INTRO

**CoolSpec** antifreeze coolants are specially formulated to protect modern and legacy engines. They offer reliable, long-term protection across a wide variety of applications, from passenger cars to heavy-duty commercial fleets, including agricultural and off-highway machinery.

A dedicated engine antifreeze coolant is essential for maintaining optimal engine health, reliability, and efficiency. These are powerful machines that rely on stable operating temperatures to function correctly and exposure to temperature extremes can significantly impact vehicle performance and longevity.

Heavy-duty engines operate under severe conditions, including prolonged use, high loads, extreme heat and elevated system pressures. These factors place intense demands on the cooling system. It is important to use a summer coolant and winter antifreeze product with technology that is appropriate for the application.

## Advantages of CoolSpec antifreeze coolants:

- Prevents freezing & overheating.
- Highly resistant to foaming.
- Defends against corrosion, erosion & cavitation.
- Enhanced compatibility with a range of materials & alloys.
- Seal protection to help prevent leaks & maintain system integrity.
- Prevents the accumulation of silicate gels & sedimentary build-up.

## Temperature Control Matters:

- High temperature:  
When an engine runs too hot, metal components can expand beyond design tolerances, leading to excessive wear, seal degradation and debris formation. If coolant reaches its boiling point, it can vaporise inside the system, creating air pockets that reduce heat transfer and further escalate the risk of overheating.
- Low temperature:  
If the ambient temperature drops below 0°C, any water-based coolant that lacks sufficient antifreeze protection is at risk of freezing. Additionally, water expands when it turns to ice, potentially damaging critical components. i.e. Cracked cylinder heads, engine blocks, cylinder liners or damaging radiators, water pumps and splitting hoses.

## Coolant Degradation

Over time antifreeze coolants degrade, leading to the formation of acids, which lowers the products pH and promotes:

- Corrosion of metal surfaces.
- Deterioration of seals and hoses.
- Oxidation and reduced thermal transfer efficiency.

## Coolant Degradation

Cavitation-corrosion is a damaging phenomenon that combines both physical and chemical attack on engine and cooling system components:

- Bubble Formation - Cavitation occurs when local pressure drops cause the coolant to vaporise, forming bubbles.
- Bubble Collapse - As pressure rises again, these bubbles collapse violently. The force of bubble collapse creates pits in the metal surface.
- Surface Damage/Corrosion - Once the protective surface layer (oxide layer) is damaged, the exposed metal is then vulnerable to corrosion.
- Cycle Repeats - Whilst the protective layer may try to reform, the ongoing cavitation continues breaking it down, leading to deeper pits and ultimately component failure.

# TYPES OF ANTIFREEZE

Named after the inhibitor technology, coolants are made up from a mixture of water, antifreeze agents such as monoethylene glycol (MEG) or monopropylene glycol (MPG) and specific additives/inhibitors.

## (IAT) Inorganic Additive Technology

Conventional or traditional low silicate coolants, some of which require the addition of supplemental coolant additives (SCA).

## (OAT) Organic Acid Technology

Nitrate, amine, phosphate, borate and silicate free antifreeze coolants that provide a long service life without need for SCAs.

## (NOAT) Nitrite Organic Acid Technology

Extended life antifreeze coolants containing nitrites, molybdenum and organic acid technology.

## (HOAT) Hybrid Organic Acid Technology

Combines OAT and IAT inhibitors, there are a few different hybrid products although low silicate and nitrated products often require an SCA.

## (Si-OAT) Silicate Organic Acid Technology

OAT in combination with silicate and is free from nitrites, amines, phosphates and borates.

## (POAT) Phosphate Organic Acid Technology

OAT extended life coolants containing phosphate and organic acid technology, mostly recommended for Asian vehicle manufacturers.

## (PSi-OAT) Phosphate-Silicate Organic Acid Technology

OAT enhanced protection against corrosion and help prevent the formation of deposits.

To maintain system integrity and performance over time, additional chemistry is included in the formulation:

### Antioxidants

Inhibit the formation of corrosive acids as the coolant ages, helping to prevent internal corrosion of engine components.

### Hard Water Deposit Inhibitors

Prevent mineral scale build-up (like calcium and magnesium deposits) which can clog the system and reduce heat transfer efficiency.

### pH Buffers

Maintain an optimal pH level to ensure the coolant stays stable and non-corrosive throughout its service life.

### Antifoaming Agents

Foam within the cooling system can reduce coolant flow and thermal conductivity, antifoaming additives are used to minimise foam formation and maintain full coolant performance.

Topping up your existing coolant with water should only be a temporary measure, as you will reduce the effectiveness of the antifreeze coolant.





## PRE-MIXED 50/50 & READY-TO-USE

Code	Product	Colour	Recommended Life	Performance Levels
WIN002	<b>COOLSPEC REGULAR IAT CL50</b>	Blue	2 years	ASTM D3306; BS 6580:2010; SAE J 1034; UNE 26-361; <b>Freeze Point -37°C</b>
WIN006	<b>COOLSPEC SUPREME OAT LL50</b>	Red	5 years	ASTM D3306, D4656, D4985, D6210; BS 6580:2010; Chrysler MS 9176; CNH MAT 3624, MAT 3724; Cummins CES 14603, 14439; DAF 74002; Daimler Truck DTFR 29D110; Deutz DQC CB-14; Ford ESD-M97B49-A, WSS-M97B44-D; GM 1899M, 6277M, 3420, B 040 1065; IVECO 18-1830; Jaguar Land Rover STJLR.651.5003; Leyland Trucks LTS 22 AF 10; Mack 014GS 17004; MAN 324 SNF; Mercedes-Benz 326.3; NATO S-759; Opel QL130100; Renault 41-01-001 Type D; Rolls Royce Bergen 2.13.01; Volvo VCS; VW Group TL-774 D&F; UNE 26361-88 <i>Suitable to use where G30, G33 &amp; G34 is specified.</i> <b>Freeze Point -38°C</b>
WIN022	<b>COOLSPEC SUPREME NON-TOXIC PG50</b>	Turquoise	5 years	AFNOR NF R15-601; ASTM D3306 Type II; BS 6580:2010; <i>Suitable for food industry applications where applicable.</i> <b>Freeze Point -37°C</b>
WIN016	<b>COOLSPEC SUPREME Si-OAT HD50</b>	Pink/lilac	5 years	AFNOR NF R15-601; ASTM D3306, D4656, D4985; BS 6580:2010; Cummins CES 14603; Daimler Truck DTFR 29C120; Deutz DQC CC-14; Liebherr Min LH-01-COL3A; MAN 324 Type Si-OAT; Mercedes-Benz 325.5 (conc), 325.6 (premix); Scania TB 1451; VW Group TL-774 G (G12 Plus Plus); UNE 26361-8; <i>Suitable to use where G40, GG40 &amp; VW Group TL-774 J (G13) is specified.</i> <b>Freeze Point -38°C</b>
WIN014	<b>COOLSPEC SUPREME HYBRID HD50</b>	Green	3 years	AFNOR NF R15-501; ASTM D 3306, D4985, D6210; BR 637 (except for colour); BS 6580:2010; Caterpillar EC-1; Chrysler MS 9769; Cummins CES 14603; Daimler Truck DTFR 29D100; JCB STD00088 (HD); JIS K 2234; John Deere JDM H24; MAN 324; Mercedes-Benz 326.0; MTU (MTL) 5048; NATO S-759; SAE J 1034; <i>Suitable to use where G05 is specified.</i> <b>Freeze Point -37°C</b>
WIN047	<b>COOLSPEC SUPREME P-OAT AK50</b>	Blue/green	5 years	ASTM D3306, D4645; BS 6580:2010; Ford WSS-M97B57-A2; Honda Type 2; JIS K 2234; Mazda FL22; Nissan L255N; Renault RX Type E; SAE J 1034; Subaru 16218; Toyota TSK 2601G-8A; <i>Suitable for Asian vehicle manufacturers, including Hyundai, KIA, Komatsu, Mitsubishi &amp; Suzuki.</i> <b>Freeze Point -38°C</b>
WIN046	<b>COOLSPEC SUPREME PSI-OAT LL50</b>	Orange	5 years	ASTM D3306, D4656; BS 6580:2010; Chrysler MS 7170; MTU MTL 5048; Scania TB 1451; SAE J 1034; Volvo VCS-2; Volvo TR-31854114-002; VW Group TL-774 L (G12 EVO); <i>Suitable to use where G64 or G65 is specified.</i> <b>Freeze Point -38°C</b>

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**Can be used for the following applications;**  
BMW LC 87, LC 18; Cummins 85T8-2; Daimler DTFR 29C120; DEUTZ DQC CA-14; Ford ESD-M97B49-A; Glysantion G48; IVECO 18-1830; MAN 324 NF, 324 Si-OAT; Mercedes-Benz 325.5, 325.6; Opel/Vauxhall GME L 1301; Volvo (Cars) 128 6083/002; VW Group TL-774 C (G11), D (G12), F (G12+), G (G12++) & J (G13); Suitable for Tesla.



## NEAT/CONCENTRATE

Code	Product	Colour	Recommended Life	Performance Levels
WIN006	<b>COOLSPEC REGULAR IAT CL</b>	Blue	2 years	ASTM D3306; BS 6580:2010; SAE J 1034; UNE 26-361;
WIN007	<b>COOLSPEC SUPREME OAT LL</b>	Red	5 years	ASTM D3306, D4656, D4985, D6210; BS 6580:2010; Chrysler MS 9176; CNH MAT 3624, MAT 3724; Cummins CES 14603, 14439; DAF 74002; Daimler Truck DTFR 29C110; Deutz DQC CB-14; Ford ESD-M97B49-A, WSS-M97B44-D; GM 1899M, 6277M, 3420, B 040 1065; IVECO 18-1830; Jaguar Land Rover STJLR.651.5003; Leyland Trucks LTS 22 AF 10; Mack 014GS 17004; MAN 324 SNF; Mercedes-Benz 325.3; NATO S-759; Opel QL130100; Renault 41-01-001 Type D; Rolls Royce Bergen 2.13.0; SAE J 1034; Volvo VCS; VW Group TL-774 D&F (G12, G12 Plus); UNE 26361-88; <i>Suitable to use where G30, G33 &amp; G34 is specified.</i>
WIN021	<b>COOLSPEC SUPREME NON-TOXIC PG</b>	Turquoise	5 years	AFNOR NF R15-601; ASTM D3306 Type II; BS 6580:2010 <i>Suitable for food industry applications where applicable.</i>
WIN015	<b>COOLSPEC SUPREME SI-OAT HD</b>	Pink/lilac	5 years	AFNOR NF R15-601; ASTM D3306, D4656, D4985; BS 6580:2010; Cummins CES 14603; Daimler Truck DTFR 29C120; Deutz DQC CC-14; Liebherr Min LH-01-COL3A; MAN 324 Type Si-OAT; Mercedes-Benz 325.5 (conc), 325.6 (premix); Scania TB 1451; VW Group TL-774 G (G12 Plus Plus); UNE 26361-8; <i>Suitable to use where G40, GG40 is specified.</i>
WIN013	<b>COOLSPEC SUPREME HYBRID HD</b>	Green	3 years	AFNOR NF R15-501; ASTM D3306, D4985, D6210; BS 6580:2010; BR 637 (except for colour); Caterpillar EC-1; Chrysler MS 9769; Cummins CES 14603; Daimler Trucks DTFR 29C100; JCB STD00088 (HD); JIS K 2234; John Deere JDM H24; MAN 324N; Mercedes-Benz 325.0; MTU (MTL) 5048; NATO S-759; SAE J 1034; UNE 26-361 <i>Suitable to use where G05 is specified.</i>
WIN041	<b>COOLSPEC SUPREME P-OAT AK</b>	Blue/green	5 years	ASTM D3306, ASTM D4645, BS 6580:2010, Ford WSS-M97B57-A2, Honda Type 2, JIS K 2234, Mazda FL22, Nissan L255N, SAE J 1034, Subaru 16218, Toyota TSK 2601G-8A; <i>Suitable for Asian vehicle manufacturers including Hyundai, KIA, Komatsu, Mitsubishi &amp; Suzuki.</i>
WIN045	<b>COOLSPEC SUPREME PSI-OAT LL</b>	Orange	5 years	ASTM D3306, D4656; BS 6580:2010; Chrysler MS 7170; MTU MTL 5048; Scania TB 1451; SAE J 1034; Volvo VCS-2; VW Group TL-774 L (G12 EVO); <i>Suitable to use where G64 or G65 is specified.</i>  <b>Can be used for the following applications;</b> BMW LC 87, LC 18; Cummins 85T8-2; Daimler DTFR 29C120; DEUTZ DQC CA-14; Ford ESD-M97B49-A; Glysantin G48; IVECO 18-1830; MAN 324 NF, 324 Si-OAT; Mercedes-Benz 325.5, 325.6; Opel/Vauxhall GME L 1301; Volvo (Cars) 128 6083/002; VW Group TL-774 C (G11), D (G12), F (G12+), G (G12++) & J (G13); Suitable for Tesla.

For optimum performance, deionised or demineralised water is preferred for dilution although other water types can be used.  
In order to provide a satisfactory level of corrosion protection it is recommended to use at least 33% (1:2)



## ANTIFREEZE COOLANTS

Code	Product	Colour	Recommended Life	Performance Levels
WIN027	<b>COOLSPEC REGULAR</b> IAT CL76	Blue	2 years	ASTM D3306; BS 6580:2010; SAE J 1034; UNE 26-361;
WIN007	<b>COOLSPEC SUPREME</b> OAT LL76	Red	5 years	ASTM D3306, D4656, D4985, D6210; BS 6580:2010; Chrysler MS 9176; Ford ESD-M97B49-A, WSS-M97B44-D; GM 1899M, 6277M, 3420, B 040 1065; Jaguar Land Rover STJLR.651.5003; Mercedes-Benz 325.3, 326.3; Opel QL130100; VW Group TL-774 D&F; UNE 26361-88; Suitable to use where G30, G33 & G34 is specified.

Freeze Protection (1:2): -14°C  
 Freeze Protection (1:1): -26°C  
 Freeze Protection (neat, top-up): -48°C

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## Regulatory Update: 2-Ethylhexanoic Acid (2-EHA) Reclassification

2-Ethylhexanoic Acid (2-EHA) and its salts have been reclassified under EU Regulation as Repr. 1B: "H360D – May damage the unborn child."

- EU compliance deadline: 1<sup>st</sup> December 2023
- UK compliance deadline: 2<sup>nd</sup> September 2025

Given that many commercial and heavy-duty engine coolants contain 2-EHA, we conducted a thorough review of our CoolSpec product range. As a result:

- We now offer 2-EHA-free alternatives where feasible.
- Affected products in small-pack formats have been discontinued where a suitable alternative was not possible.
- Product naming has been streamlined to improve clarity and customer experience.

# FAQ'S

## What is a winter antifreeze and summer coolant?

Antifreeze reduces the freezing point of the water in a cooling system and when mixed with water it is called coolant as it also raises the boiling point of the liquid. Concentrate antifreeze must always be mixed with water before use at the recommend dilution. Many different types of antifreeze and coolant should never be mixed without checking with the vehicle manufacturer or product supplier.

## How long does antifreeze/coolant last?

Whilst antifreeze does not generally expire, the inhibitors and additives deplete and breakdown over time. CoolSpec antifreeze coolants do have a recommended life but we recommend that you replace your coolant antifreeze in line with the vehicle manufacturers' guidelines.

## Can the colour indicate the type of coolant?

A common misconception is that you can use colour to identify a coolant type, unfortunately the colour is not an indication of quality, performance or specification. The colour of antifreeze coolant has no impact on how the product performs in terms of engine protection. When it is first made the product is colourless, the colour is added through either powder or liquid dyes. We do not advise using the colour of the coolant as an indicator of coolant type.

## Why can't I just use water?

For cooling engines, water has some very positive qualities;

- Excellent heat transferability, water can hold more heat per unit volume than most other fluids.
- Readily available and relatively low cost.

### ***Although, it has some potentially catastrophic issues;***

- Water freezes at 0°C and expands. When this happens in an engine it can critically damage engine components and the cooling system.
- Water boils at 100°C, this is a close to most engine operating temperatures, most commonly monoethylene glycol (MEG) is added to water to increase the boiling point. A 50/50 mixture of MEG and water will have a boiling point of around 108°C.
- Without the inhibitors, water does not provide corrosion or scale protection. Eventually the corrosion and scale will create an insulating barrier on heat exchange surfaces or cause blockages in radiators.

### **Please note:**

Monoethylene glycol is toxic to both humans and animals, please follow the manufacturers' safety advice and dispose in accordance with government guidelines or seek advice from your local council.

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