MORRIS
LUBRICANTS

Guide To Antifreeze & Coolants

morrislubricants.co.uk

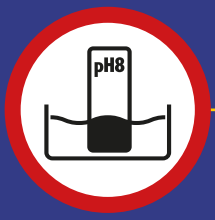
ULTRALIFE from Morris Lubricants: a bigger range of Antifreeze Coolants

Ultralife is a new range of antifreeze coolants that protects engines in a wide variety of vehicles. These new antifreeze coolants have been designed for automotive, commercial vehicle, agricultural and off-highway sectors.

Utilising the latest product formulations, Ultralife antifreeze coolants cover 169 different engine specifications providing all year round protection, including outstanding defence against rust and corrosion, as well as optimum temperature control.

Prevents Foaming

Prevents System Overheating



pH Stabilisation

Protects Water Pump & Other Components

This new range of antifreeze coolants from Morris Lubricants has been formulated to offer maximum levels of protection to engines across a range of market sectors:

- ☑ Cars
- ☑ Vans
- ☑ Commercial Vehicles
- ☑ Trucks & HGVs
- ☑ Buses & Coaches
- ☑ Agricultural Vehicles
- ☑ Tractors & Farming Equipment
- ☑ Excavators & Diggers
- ☑ Dumper Trucks
- ☑ Off-Highway Equipment
- ☑ Motorcycles & ATVs
- ☑ Stationary Engines
- ☑ Generator Sets
- ☑ Gas Engines

ALIFE
reeze
olant
NTRATE

Stops System Blockages

Stops System Corrosion & Rusting

Prevents System Freezing

Protects Hoses

Are you sure you are using the correct product?

Antifreeze coolant choice should not be based on colour alone. You need to make sure you follow the engine manufacturer's precise requirements.

To find out more, please refer to your OEM service schedule, try Morris Lubricants' online search tool **whatoildoineed.com** or call the Morris Lubricants technical team on **01743 237541**

The Importance Of Antifreeze Coolants

Antifreeze coolants are essential for all year round protection of an engine and they have many jobs to perform.

HIGH TEMPERATURE OPERATION

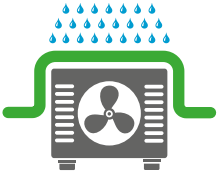
When engines run they generate heat and antifreeze coolants are used to maintain the optimum operating temperature. The best cooling medium is water, however, when the engine reaches running temperature it will exceed the boiling point of water, which is 100°C. If the water boils away catastrophic damage can occur in the engine and cooling system. To combat this, Monoethylene Glycol (MEG) is added to water to elevate the boiling point up to around 108°C.

LOW TEMPERATURE OPERATION

If the engine has been at rest and the ambient temperature falls below 0°C, water freezes, and the ice formed expands. This is a big issue in the engine and cooling system as there is nowhere for the expansion to go. As the water freezes, high internal pressures are generated that can crack heads, cause splits in cylinder liners, make hoses leak, fracture radiators, and break water pumps. By incorporating MEG to the water, it reduces the freezing point, driving it down to -35°C or below.

INHIBITORS - STOPPING RUST & CORROSION

Another important function of an antifreeze coolant is to prevent any metallic components from rusting or corroding, such as the engine block, water pump, radiator etc. It is therefore essential that the antifreeze coolant uses the correct chemistry in its formulation to stop this from happening.



Rusting and corrosion are prevented by adding a combination of chemical compounds to the antifreeze coolant to optimise its ability to protect the cooling system.

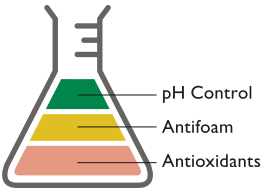
This chemistry is referred to as either Inorganic or Organic Acid Technology (OAT).

Inorganic chemistry is extremely active and will seek out all materials in the cooling system, whether susceptible to rusting or corrosion or not. This constant level of activity results in it becoming depleted after around 2 years. At this point the used antifreeze coolant should be drained and changed.

Organic Acid Technology (OAT) only targets materials where rusting or corrosion is starting to take place. This chemistry is selective and does not become depleted as quickly and will work for up to 5 years. Some manufacturers may require a combination of these technologies and 'hybrid' antifreezes are available for specific engine designs.

THERE IS MORE!

Additional chemistry may also be added to the formulation of the antifreeze coolant such as antioxidants to stop corrosive acid formation as well as other compounds to prevent hard water deposits and extra pH buffering agents to maintain an optimum pH level. The formation of foam can also inhibit the properties of the antifreeze coolant, therefore an antifoaming agent may be added to the formulation of the antifreeze coolant to prevent foam developing within the cooling system.



COLOUR

The language of antifreeze coolants tends to be based on their colour. But be aware, colour is not an indication of quality, performance or specification and is purely cosmetic. The colour of antifreeze coolant has no impact on how the antifreeze coolant performs in terms of engine protection.

CHOOSING THE CORRECT ANTIFREEZE COOLANT

As engine designs become more complex and engines are manufactured from different metals and composite materials, the correct antifreeze coolant must be used. If not, the antifreeze coolant will damage the engine and reduce its efficiency. When choosing the correct antifreeze coolant, you need to make sure it meets the specifications set by the engine manufacturer.

READY TO USE OR CONCENTRATE

Some antifreeze coolants are manufactured and sold as concentrated products whilst others are ready mixed (known as pre-mixed). Concentrated products need to be diluted with deionised or demineralised water to prevent hard water salt formation (furring), which can block the flow of antifreeze coolant. It is best to avoid dilution with tap water. Ready mixed antifreeze coolants are manufactured ready to use in the cooling system.

SUMMARY

Antifreeze coolants protect the engine all year round and do not just cover the winter months. Selecting the correct antifreeze coolant is vital and choosing a product based on colour should be avoided. Best practice is to select the antifreeze coolant based on the engine manufacturer's specification. If there is any doubt as to which antifreeze coolant is required, check with the engine manufacturer, speak to Morris Lubricants' Technical Team, or use the online tool whatoildoineed.com.

technicalhelpdesk@
morris-lubricants.co.uk

Call the Technical Team:
01743 237541

whatoil?
whatoildoineed.com

AVOID
Selecting Coolants Based On Colour

CHECK
Engine Manufacturer's Specification

CONSULT
Independent Technical Advice

ULTRALIFE 1

ORGANIC ACID TECHNOLOGY (OAT)
PASSENGER CAR / HEAVY DUTY DIESEL ENGINES
ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

Ultralife 1 is an ethylene glycol-based antifreeze coolant, which uses Organic Acid Technology (OAT) and is free from nitrites, amines, phosphates, borates, silicates and 2-EHA.

The product will protect all engines from frost damage right down to -38°C (at 50% of total coolant volume). It also provides outstanding protection against rust and corrosion for all parts of the cooling system and is therefore recommended for all year round use.

Ultralife 1 can be used for up to 5 years in petrol, diesel or heavy duty diesel engines.

APPLICATIONS:

Ultralife 1 is suitable for the cooling systems of modern engines found in passenger cars, trucks, agricultural and off-highway vehicles where an OAT antifreeze coolant is required.

48 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Excellent OAT technology
- ☑ High levels of rust and corrosion protection
- ☑ Excellent pH stabilisation
- ☑ For petrol, diesel and heavy duty diesel engines
- ☑ Wide selection of standards and specifications

SPECIFICATIONS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306
ASTM D4985
SAE J 1034
BS 6580 (2010)
Isuzu UD Trucks
DAF
Leyland Trucks
Jaguar / Land Rover STJLR.03.5212
Mack VCS-2 (STD 418-0007)
Renault VCS-2 (STD 418-0007)
Volvo VCS-2 (STD 418-0007)
Volvo Construction VCS-2 (STD 418-0007)
Volvo Penta VCS-2 (STD 418-0007)
Volvo Trucks VCS-2 (STD 418-0007)
Caterpillar / Perkins
Claas
John Deere
Voith
Alstom
Aston Martin
CNH Industrial
Detroit
Evobus
Freightliner
MB 325.3
Deutz DQC CB-14
Ford WSS-M97B44-D
GM GMW 3420
Great Wall Motors
Hitachi
Thermo King
Kobelco
Komatsu 07.892 (2017)
Behr
Mitsubishi
Abarth
Alfa Romeo
Chrysler
Dodge
Fiat 9.55523
Jeep
Maserati
Opel GMW 3420
Vauxhall GMW 3420
Suzuki Santana Motors
Tata
Vestas
VW TL-774 D
VW TL-774 F
MAN 324 Typ SNF
VW 61-0-0257
Yanmar
ZF

Solution % Vol.	Freezing Point °C
33	-18
50	-38

PACK SIZES:

5L, 20L,
205L, IBC / 1000L

ULTRALIFE 2

HYBRID ORGANIC ACID TECHNOLOGY (P-OAT)
PASSENGER CAR ENGINES
ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

Ultralife 2 is an organic acid, ethylene glycol-based coolant that employs phosphate inhibitor technology (P-OAT). This antifreeze coolant does not contain potentially harmful additives such as nitrites, borates and amines. Ultralife 2 is also free of silicates.

Ultralife 2 is an all-round antifreeze coolant that exceeds the industry standards JIS K 22342018, ASTM D3306 and ASTM D6210, and is suitable for use in Japanese, European and Korean vehicles.

APPLICATIONS:

Ultralife 2 may be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems made of aluminium or copper alloys.

35 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Environmentally friendly long-life P-OAT technology
- ☑ Excellent hard water stability
- ☑ Premium cavitation protection
- ☑ Reduces repairs to thermostat, radiator and water pump
- ☑ For mixed fleets of automotive and heavy duty vehicles

PERFORMANCE LEVELS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306-20
ASTM D6210-17
JIS K2234-2018 (Japanese Standard)
KS M 2142-2014 (Korean Standard)
GB 27943.1-2022
Ford WSS-M97B57-A1
Fiat 9.55523 (Fiat/Lancia)
Fuso (Daimler)
Doosan Bobcat
GM Daewoo
Honda
Hyundai
Kia
Kubota Ssangyong
Mazda
Datsun
Infiniti
Mitsubishi
Renault Samsung
Abarth
Maserati
Opel
Vauxhall
Subaru
Maruti-Suzuki
Suzuki
Daihatsu
Hino
Lexus
Toyota
Nissan
Renault
Citroen
DS Automobiles
Peugeot

Solution % Vol.	Freezing Point °C
30	-16
50	-37

PACK SIZES:

5L, 20L,
205L, IBC / 1000L

ULTRALIFE 3

HYBRID ORGANIC ACID TECHNOLOGY (Si-OAT) PASSENGER CAR / HEAVY DUTY DIESEL ENGINES ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

Ultralife 3 is a versatile antifreeze coolant providing enhanced hard water and oxidation stability. This ethylene glycol-based coolant incorporates silicate inhibitor technology (Si-OAT) re-enforced with phosphates that compliment the Organic Acid Technology backbone to provide enhanced metallurgy and materials protection. Ultralife 3 provides long-life protection against all forms of corrosion by the use of optimised and patented organic corrosion inhibitors. Excellent and lasting high temperature corrosion protection is provided for the aluminium heat transfer surfaces contained in modern engines. Furthermore, Ultralife 3 offers excellent cavitation protection.

APPLICATIONS:

Ultralife 3 is an antifreeze coolant that can be used in petrol, diesel and hybrid vehicles. Ultralife 3 can also be used in heavy duty diesel engines.

25 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Excellent pH stabilisation
- ☑ Replaces former hybrid Si-OAT generation coolants containing borate, molybdate and nitrate
- ☑ Advanced flux compatibility
- ☑ Outstanding aluminium protection
- ☑ Free from nitrites, borates, amines and 2-ethylhexanoic acid

SPECIFICATIONS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306
JIS K2234:2018
FVV R 530:2005
BS6580:2010*
Ö-Norm † *
GB 29743:2013*
MAN 324NF,
MAN 324 Si-OAT
MWM 0199-99-2091/12
Iveco Standard 18-1830
Cummins 85T8-2
MB 325.5

Deutz DQC CA-14
JI Case JIC-501
MTU/Rolls Royce MTL 5048
BMW LC 87, LC97, LC18
Alfa Romeo, Fiat, Lancia 9.55523
Chrysler MS7170
Opel/Vauxhall GME L1301
VW G12 EVO (TL 774-L)
Ford ESD-M97B49-A
Volvo Cars 128 6083/002
Toyota 1WW/2WW Engines

† except for RA. * modified

Solution % Vol.	Freezing Point °C
33	-20
50	-37

PACK SIZES:

5L, 20L,
205L, IBC / 1000L

ULTRALIFE 4

LONG-LIFE ORGANIC ACID TECHNOLOGY (OAT) PASSENGER CAR / HEAVY DUTY DIESEL ENGINES ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

Ultralife 4 is a versatile antifreeze coolant that provides long-life corrosion protection in automotive and heavy duty diesel engines.
It is recommended to change the coolant every five years or when above mileages or operating times are reached, whichever comes first. Ultralife 4 provides long-life protection against all forms of corrosion by the use of optimised and patented organic corrosion inhibitors. Excellent and long lasting high temperature corrosion protection is provided for the aluminium heat transfer surfaces contained in modern engines. Furthermore, Ultralife 4 offers excellent cavitation protection.

APPLICATIONS:

Ultralife 4 may be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems made of aluminium or copper alloys.

71 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Long-life OAT technology
- ☑ Designed for passenger car and heavy duty diesel engines
- ☑ Excellent heat transfer
- ☑ Reduces repairs to thermostat, radiator and water pump
- ☑ Improved hard water stability

SPECIFICATIONS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306, D4656, D4985, D6210
BS6580
JIS K2234-2006
Class II: LLC *
SAE J1034
KS M 2142 †
Ford WSS-M97B44-D
Mercedes-Benz 325.3
General Motors GM 6277M
MAN 324 type SNF
Volkswagen TL 774F
CNH MAT3624
Caterpillar GCM34, MWM 0199-99-2091/12
Cummins 85T8-2, IS Series u N14, CES 14603, CES 144439
MB 325.3, 326.3
Detroit DFS93K217
Deutz DQC CB-14
Fiat / Lancia 9,55513
GE Jenbacher TA 1000-0200
GE Waukesha
Liebherr MD1-36-130
Mahle Behr
Mazda MEZ MN 121D
Paccar DAF 74002
Paccar Leyland Trucks DW03245403
Renault Nissan 41-01-001/- -S Type D
Rolls Royce Power Systems MTU MTL 5048
Rolls Royce Power Systems Bergen 2.13.01
Suzuki Santana
Tata Motors JLR CMR 8229, STJLR 651.5003
Tedom
Thermo King
Van Hool
Volvo Mack 014 GS 17009
Volvo Renault Trucks 41-01-001/-, -S Type D
VW TL-774 D, TL-774 F, Skoda 61-0-0257
VW MAN 324 Typ SNF, Diesel and Turbo SE
VW MAN B&W AG
D36 5600, B&W A/S
Wartsila SACM Diesel DLP799861
Wartsila 32-9011
Yanmar

Also suitable for use in:
AGCO Fendt
AGCO Valtra
Aston Martin
Perkins
Claas
GM Chevrolet, Saturn
GM Saab B 040 1065
Great Wall Motor Co. Ltd.
Hitachi
Isuzu
Irisbus Karosa
John Deere JDM H5
Kobelco
Komatsu 07.892 (2009)
Mitsubishi Heavy Industry
PSA Opel-Vauxhall GMW 3420
Volvo AB Penta
Volvo Construction / Trucks
VW Semt Pielstick

* Japanese Standard
† Korean Standard

Solution % Vol.	Freezing Point °C
30	-20
50	-40

PACK SIZES:

20L, 205L, IBC / 1000L

ULTRALIFE RED

ORGANIC ACID TECHNOLOGY (OAT)
PASSENGER CAR / HEAVY DUTY DIESEL ENGINES
ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

Ultralife Red will protect all engines from frost damage right down to -40°C. It also provides outstanding protection against rust and corrosion for all parts of the cooling system and is therefore recommended for all year round use. This ethylene glycol-based antifreeze, which uses Organic Acid Technology, is free from nitrites, amines, phosphates, borates and silicates. When used at the correct concentration, antifreeze coolants based on Organic Acid Technology are capable of providing extended operation compared to conventional antifreeze coolants. This can be for up to 5 years or 250,000km in passenger cars and 500,000km in commercial vehicles, depending on which is reached first.

APPLICATIONS:

Ultralife Red is suitable for the cooling systems of a variety of engines in cars, vans, trucks and off-highway vehicles.

32 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Excellent OAT technology
- ☑ Outstanding rust and corrosion protection
- ☑ 5 year long-life protection
- ☑ Suitable for mixed fleets
- ☑ Designed for passenger car and heavy duty diesel engines

SPECIFICATIONS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306,
ASTM D 4985,
SAE J 1034,
BS 6580 (2010),
AFNOR NF R15-601,
FFV Heft R443,
CUNA NC 956-16,
UNE 26361 - 88,
JIS K 2234,
NATO S 759,
Chrysler MS 9176,
Cummins CES 14603,
Ford ESE M97B49-A, WSS-M97B44-D &ESD M97 B49-A,
GM 1899 M, US 6277 M & OPEL GM QL130100,
John Deere H 24 B1 & C1,
Leyland Trucks LTS 22 AF 10,
Mack 014GS 17004,
MAN 248, 324 (SNF) & B&W D 36 5600,
Mercedes MB 325.3,
Renault 41-01-001 - D,
VAG TL 774 D/F/G, VW G12+,
VOLVO VCS STD 418-0001,
Scania TB 1451,
DAF 74002.

Solution % Vol.	Freezing Point °C
33	-22
50	-40

PACK SIZES:

5L, 20L,
205L, IBC / 1000L

MEG ANTIFREEZE

MONOETHYLENE GLYCOL TECHNOLOGY (MEG) PASSENGER CAR / HEAVY DUTY DIESEL ENGINES ANTIFREEZE COOLANT CONCENTRATE

DESCRIPTION:

MEG (monoethylene glycol) antifreeze will protect engines from frost damage right down to -40°C, whilst providing outstanding protection against rust and corrosion for all parts of the cooling system. This MEG-based antifreeze coolant meets the technical requirements of BS6580:2010 and is recommended for all year round use.

It does not allow rust or corrosion to take place with cast iron, aluminium, copper alloys, solder, or any other metals found in the engine cooling system and therefore prolongs the life of the block, cylinder liners, radiator, pump and heater system.

APPLICATIONS:

Suitable for older engine cooling systems found in cars, vans, trucks, agricultural and off-highway vehicles.

4 INTERNATIONAL STANDARDS & OEM SPECIFICATIONS

FEATURES AND BENEFITS:

- ☑ Excellent MEG technology
- ☑ Lasts for up to two years in service
- ☑ Nitrite, amine and phosphate (NAP) free
- ☑ Does not form sediment, precipitate additives or form gels
- ☑ Suitable for older vehicles

SPECIFICATIONS:

Meets the performance requirements of the following international standards and OEM specifications:

ASTM D3306,

SAE J 1034,

BS 6580 (2010),

EMD Standard M.I. 1748, Rev.H.

Solution % Vol.	Freezing Point °C
33	-20
50	-40

PACK SIZES:

5L, 20L,
205L, IBC / 1000L

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