

**blended**<sup>TM</sup>  
experts in specialty chemicals & gases

# coolblend

Product Reference Guide:  
**Heat Transfer  
Fluids**

[www.blendedproducts.com](http://www.blendedproducts.com)

# Contents

About Us	3
HVAC & Refrigeration	4
Heating	8
Solar Thermal	12
Biocide & Inhibitor	18
Lubricants	20
Glycol Testing	24

# We are Blended

At Blended, we have been supplying specialist chemicals and gases for almost 20 years. The company prides itself on offering the optimal 'blend' of speciality chemical expertise, exceptional service and positive attitude that customers can rely on.

Through expansion and product development, Blended now offer a range of high-performance heat transfer fluids to the refrigeration (HVAC) and ground source heating industry.

# Blended Team

Our values as a team are built around the needs of our customers with a focus on ensuring that we always deliver the highest standards in the quality of our products and the service we provide.

Our job is to deliver solutions, solve problems and use our expertise to support your business, whether it's resolving a critical issue or drawing on our product knowledge and innovation to solve complex challenges.

**Together we are blended.**

# HVAC & Refrigeration

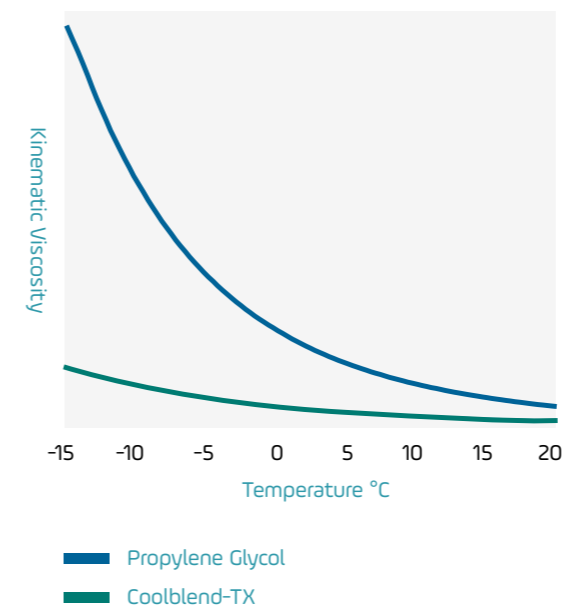
# coolblend

for use in  
**Refrigeration  
 & HVAC**

## coolblend-TX

**Non-hazardous** heat transfer fluid with **market leading** low viscosity, **high thermal conductivity** and **exceptional performance**. This secondary refrigerant is for use in glycol systems throughout the HVAC sector from refrigeration to process cooling, freezing to air conditioning. Coolblend-TX contains premium multi-metal corrosion and scale inhibitors that are NSF approved and endorsed by the Energy Saving Trust and is available neat or preblended to specific requirements.

### Viscosity Comparison



### Dilution & Freeze Point

Volume %	Freeze Point °C	Refractive Index
50%	-37.8	1.383
40%	-25.1	1.375
35%	-19.6	1.367
30%	-14.9	1.364
25%	-12.7	1.358

**High Thermal Conductivity**  
 0.2511 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

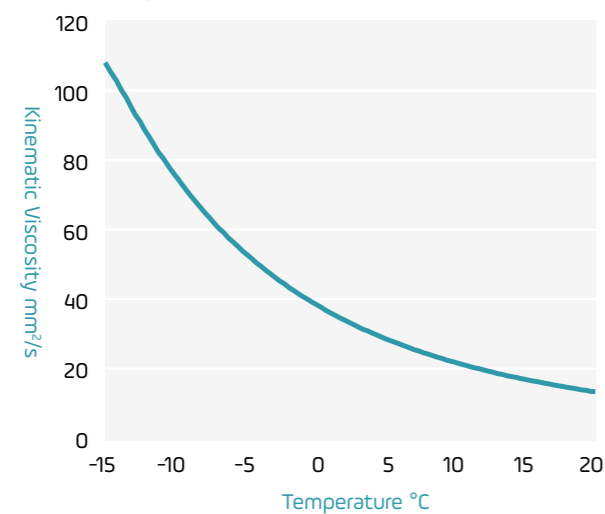
**Specific Heat Capacity**  
 2324 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

All of the above tests were performed by an independant laboratory, 2021.

# coolblend IND

Ethylene glycol based secondary refrigerants for use in glycol systems throughout the HVAC sector from refrigeration to process cooling, freezing to air conditioning. Coolblend IND contains premium multi-metal corrosion and scale inhibitors that are NSF approved and endorsed by the Energy Saving Trust and is available neat or preblended to specific requirements.

### Viscosity



### Dilution & Freeze point

Volume %	Freeze Point °C	Refractive Index
25%	-12.2	1.359
30%	-15.7	1.364
33%	-18.1	1.368
40%	-25	1.375
50%	-38.6	1.384
60%	-56.7	1.394

**High Thermal Conductivity**  
0.2531 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

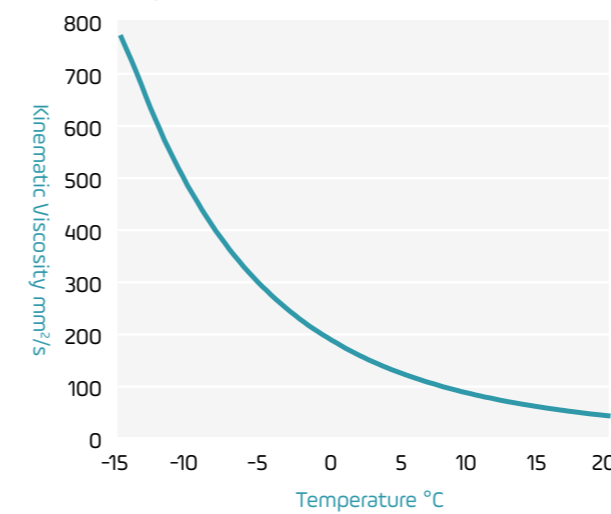
**Specific Heat Capacity**  
2319 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

All of the above tests were performed by an independant laboratory, 2021.

# coolblend MPG

USP Propylene Glycol based secondary refrigerant for use in glycol systems throughout the HVAC sector from refrigeration to process cooling, freezing to air conditioning. Coolblend MPG contains premium multi-metal corrosion and scale inhibitors that are NSF approved and endorsed by the Energy Saving Trust and is available neat or preblended to specific requirements.

### Viscosity



### Dilution & Freeze point

Volume %	Freeze Point °C	Refractive Index
25%	-9.2	1.362
30%	-11.7	1.367
33%	-14.4	1.369
40%	-21.7	1.378
50%	-32.8	1.388
60%	-51.1	1.398

**High Thermal Conductivity**  
0.2211 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

**Specific Heat Capacity**  
2200 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 23°C

All of the above tests were performed by an independant laboratory, 2021.

Heating

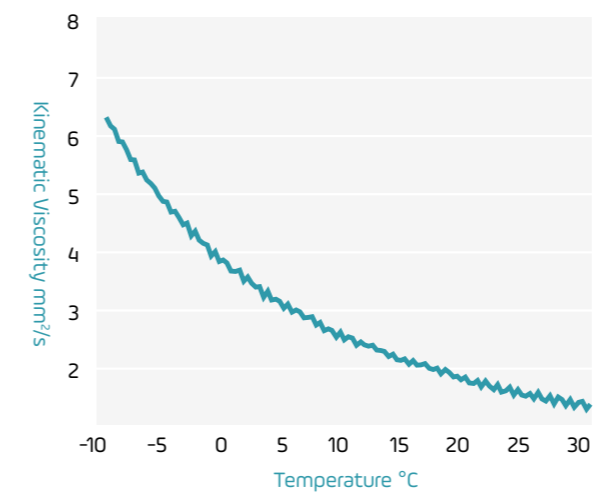
therma**blend**

for use in  
Air & Ground Source  
Heat Pumps

therma**blend**-TX

**Non-hazardous** heat transfer fluid with **market leading** low viscosity, high thermal conductivity and **exceptional performance**. Thermablend-TX is biodegradable and contains a specially formulated biocide with increased thermal stability plus an organic acid technology inhibitor package which meets ASTM D-1384 and is free from any nitrite, amine, phosphate, borax, silicate and 2-Ethylhexanoate.

**Viscosity**



**Dilution & Freeze point**

Volume %	Freeze Point °C
50%	-37.8°C
40%	-25.1°C
35%	-19.6°C
30%	-14.9°C

**High Thermal Conductivity**

0.2518 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
 0.479 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C  
 0.255 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at -0.6°C  
 0.436 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at -1.4°C

**Specific Heat Capacity**

2369 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
 3433 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C  
 2346 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at -0.6°C  
 3299 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at -1.4°C

**Prandtl Number**

24°C - 11.64  
 -1.4°C: 31.27

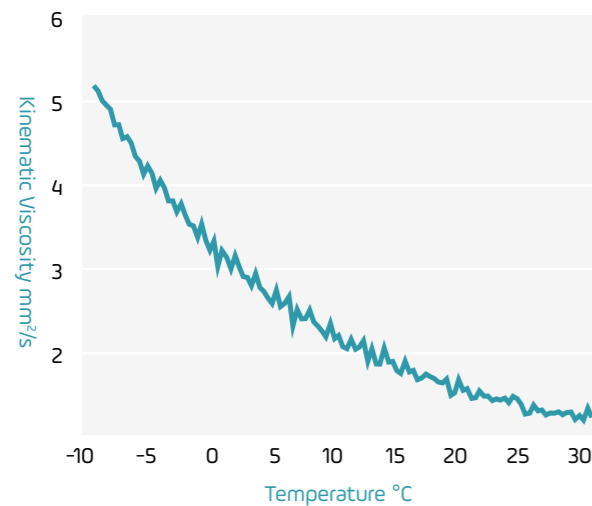
All of the above tests were performed by an independant laboratory, 2021.

Contains Bitrex, helping to protect children and animals.

# thermablend IND

Ethylene glycol based heat transfer fluid with **low viscosity, high thermal conductivity** and **exceptional performance**. Thermablend IND is biodegradable and contains a specially formulated biocide with increased thermal stability plus an organic acid technology inhibitor package which meets ASTM D-1384 and is free from any nitrite, amine, phosphate, borax, silicate and 2-Ethylhexanoate.

### Viscosity



### Dilution & Freeze point

Volume %	Freeze Point °C
50%	-38.7
40%	-27.1
35%	-21.3
30%	-16.7

### High Thermal Conductivity

0.259 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 25°C  
0.478 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

### Specific Heat Capacity

2412 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 25°C  
3485 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

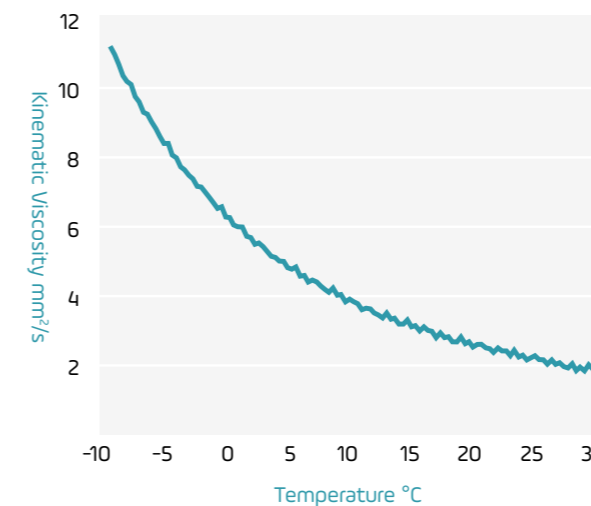
All of the above tests were performed by an independant laboratory, 2021.

**Contains Bitrex, helping to protect children and animals.**

# thermablend MPG

USP Propylene glycol based heat transfer fluid. **High performance, food safe** with **excellent thermal conductivity**. Thermablend MPG is biodegradable and contains a specially formulated biocide with increased thermal stability plus an organic acid technology inhibitor package which meets ASTM D-1384 and is free from any nitrite, amine, phosphate, borax, silicate and 2-Ethylhexanoate.

### Viscosity



### Dilution & Freeze point

Volume %	Freeze Point °C
50%	-35.4
40%	-22.7
35%	-16.9
30%	-12.4

### High Thermal Conductivity

0.227 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 25°C  
0.476 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

### Specific Heat Capacity

2266 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 24°C  
3655 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

All of the above tests were performed by an independant laboratory, 2021.

Solar Thermal

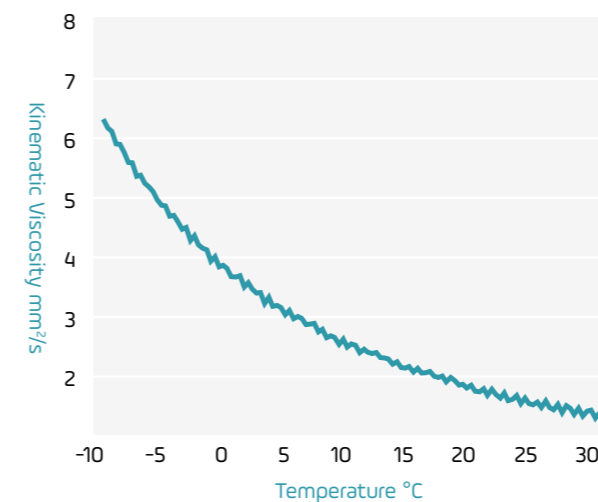
solarblend

for use in  
Solar Thermal  
Systems

solarblend-TX

**Non-hazardous** heat transfer fluid with **market leading** low viscosity, **high thermal conductivity** and **exceptional performance**. Blended to cope with the demands of repeated thermal cycling and extreme temperature ranges. Its antifreeze properties ensure that solar thermal systems still perform efficiently at low temperatures.

## Viscosity



**Boiling Point**  
>100°C

**Density**  
1.12g/cm<sup>3</sup>

## Dilution &amp; Freeze point

Volume %	Freeze Point °C
50%	-37.8°C
40%	-25.1°C
35%	-19.6°C
30%	-14.9°C

## High Thermal Conductivity

0.2518 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
0.479 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C

## Specific Heat Capacity

2369 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
3433 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C

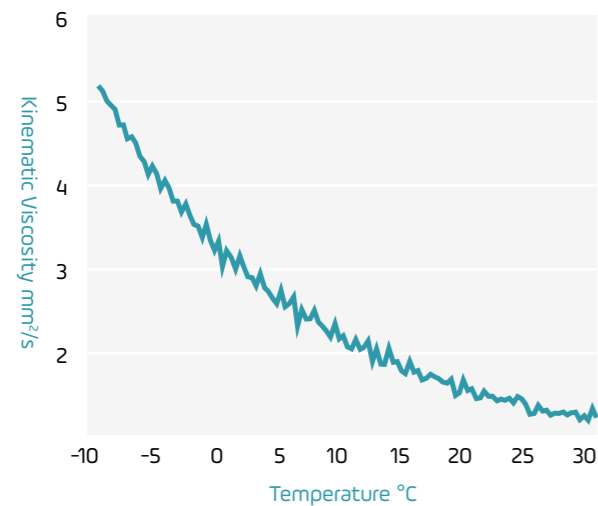
All of the above tests were performed by an independent laboratory, 2021.

Contains Bitrex, helping to protect children and animals.

# solarblend IND

Ethylene glycol based solar thermal heat transfer fluid with low viscosity and high thermal conductivity to meet and exceed the demands of all solar thermal systems. Blended to cope with the demands of repeated thermal cycling and extreme temperature ranges. Its antifreeze properties ensure that solar thermal systems still perform efficiently at low temperatures.

### Viscosity



**Boiling Point**  
>100°C

**Density**  
1.11g/cm³

### Dilution & Freeze point

Volume %	Freeze Point °C
50%	-38.7
40%	-27.1
35%	-21.3
30%	-16.7

### High Thermal Conductivity

0.259 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 25°C  
0.478 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

### Specific Heat Capacity

2412 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
3485 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C

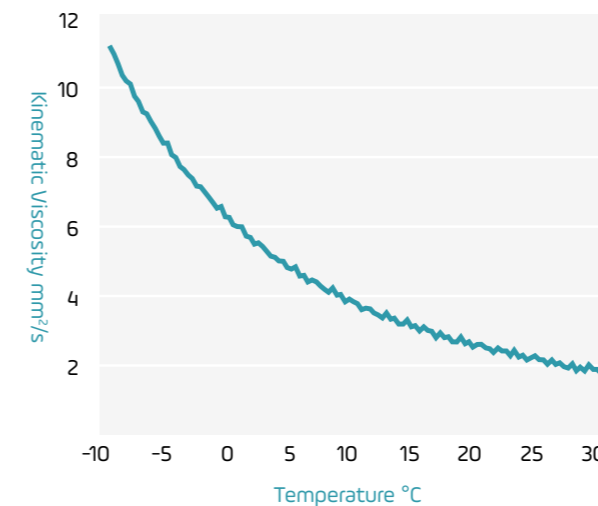
All of the above tests were performed by an independent laboratory, 2021.

Contains Bitrex, helping to protect children and animals.

# solarblend MPG

USP Propylene glycol based solar thermal heat transfer fluid. **High performance, food safe** with **excellent thermal conductivity**. Blended to cope with the demands of repeated thermal cycling and extreme temperature ranges. Its antifreeze properties ensure that solar thermal systems perform efficiently at low temperatures.

### Viscosity



**Boiling Point**  
>100°C

**Density**  
1.05g/cm³

### Dilution & Freeze point

Volume %	Freeze Point °C
50%	-35.4
40%	-22.7
35%	-16.9
30%	-12.4

### High Thermal Conductivity

0.227 Wm<sup>-1</sup>K<sup>-1</sup> measured undiluted at 24°C  
0.476 Wm<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 25°C

### Specific Heat Capacity

2266 Jkg<sup>-1</sup>K<sup>-1</sup> measured undiluted at 26°C  
3655 Jkg<sup>-1</sup>K<sup>-1</sup> measured diluted to 30% at 24.5°C

All of the above tests were performed by an independent laboratory, 2021.



## Biocide & Inhibitor

serviceblend

# Servicing, Maintenance & All-in-one Biocide & Inhibitor

## serviceblend AIR

Serviceblend AIR is an all-in-one biocide and inhibitor solution for use in air source heat pumps with frost protection valves. The formulation contains a premium, NSF approved multi-metal corrosion and scale inhibitor. In addition, Serviceblend AIR contains a high-performing biocide, stable across temperatures used within most domestic and commercial heating and cooling systems.

Serviceblend AIR is a pre-mixed additive for easy installation, with 1 litre of Serviceblend AIR offering market leading protection for up to 180 litres of water. Using Serviceblend AIR helps maintain optimal thermal conductivity whilst preventing unnecessary maintenance.

### All-in-One

Serviceblend AIR rules out the need to manually measure the biocide and inhibitor as separate additives for easier installation.

### NSF Approved Inhibitor

Serviceblend AIR contains a multi-metal corrosion and scale inhibitor for closed circuit hot water and chilled water systems. This product has been approved under the NSF/CIAS Scheme product certification scheme. Serviceblend AIR protects steel, cast iron, copper, brass and aluminium.

### Highly Stable Biocide Solution

Serviceblend AIR contains a biocide designed to eliminate and prevent bacterial growth, helping maintain the efficiency, effectiveness, and life of the heating system. This biocide remains highly stable across a broad temperature range to maintain optimum performance.

### Usage information

This product is intended to be used as an additive for water within closed loop heating or cooling distribution systems. This should be dosed at 1L of Serviceblend AIR per 180L system volume.

# serviceblend UFH

Serviceblend UFH is an all-in-one biocide and inhibitor solution for use in closed loop heating and cooling systems for underfloor heating. The formulation contains a premium, NSF approved multi-metal corrosion and scale inhibitor. In addition, Serviceblend UFH contains a high-performing biocide, stable across temperatures used within most domestic and commercial heating and cooling systems.

Serviceblend UFH is a pre-mixed additive for easy installation, with 1 litre of Serviceblend UFH offering market leading protection for up to 180 litres of water. Using Serviceblend UFH helps maintain optimal thermal conductivity whilst preventing unnecessary maintenance.

### All-in-One

Serviceblend UFH rules out the need to manually measure the biocide and inhibitor as separate additives for easier installation.

### NSF Approved Inhibitor

Serviceblend UFH contains a multi-metal corrosion and scale inhibitor for closed circuit hot water and chilled water systems. This product has been approved under the NSF/CIAS Scheme product certification scheme. Serviceblend UFH protects steel, cast iron, copper, brass and aluminium.

### Highly Stable Biocide Solution

Serviceblend UFH contains a biocide designed to eliminate and prevent bacterial growth, helping maintain the efficiency, effectiveness, and life of the heating system. This biocide remains highly stable across a broad temperature range to maintain optimum performance.

### Usage information

This product is intended to be used as an additive for water within closed loop heating or cooling distribution systems. This should be dosed at 1L of Serviceblend UFH per 180L system volume.

## Other Serviceblend formulations available

- **Serviceblend PRE:** An aqueous blend of chelants, dispersants and wetting agents which loosens, mobilises and dissolves corrosion deposits.
- **Serviceblend BIO:** Aqueous, broad spectrum biocide solution, ideally suited to shock clean a system prior to filling with glycol.
- **Serviceblend OLC:** A blend of cleaning and dispersing agents with an effective bio dispersant. Cleans and passivates bare metal surfaces, preventing under deposit corrosion and prolonging system life. NOTE This product lifts and mobilises system contaminants including biofilm, it should only be used in conjunction with in-line or side stream filtration.
- **Serviceblend INH:** Multi-metal corrosion and scale inhibitor for closed circuit hot water and chilled water systems. This product has been approved under the NSF/CIAS Scheme product certification scheme (formerly BuildCert). Protects steel, cast iron, copper, brass and aluminium. Compatible with ethylene glycol and propylene glycol. Suitable for industrial and domestic systems.
- **Serviceblend PUR:** Deionised water.

Lubricants

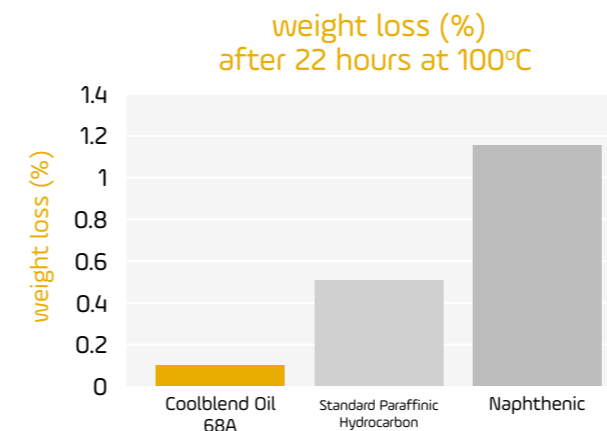
coolblend  
OIL

coolblend  
OIL

## 68A Ammonia

Coolblend Oil 68A is an OEM approved refrigeration oil formulated for ammonia compressors. With its low fluid loss rate, extreme cool temperature fluidity and additional wear protection, Coolblend Oil 68A reduces oil consumption, promotes greater oil return and maintains thermal transfer efficiency, whilst helping promote system longevity.

### Volatility



#### Low Volatility

Coolblend Oil 68A's low volatility reduces oil carryover. Up to 80% less oil carryover than naphthenic and PAO/AB formulations.

### Specifications

Property	Coolblend Oil 68A
ISO Grade	68
Viscosity at 40°C (cSt)	62
Viscosity Index	110
Specific Gravity at 15°C	0.85
Pour Point (°C) (cSt)	-42
Flash Point (°C) (cSt)	248
Copper Strip Corrosion, 100°C for 3hrs	1a

#### Low Viscosity

Coolblend Oil 68A's low viscosity helps maintain high fluidity in extreme cool temperatures. Operate refrigeration system at temperatures as low as -45°C.

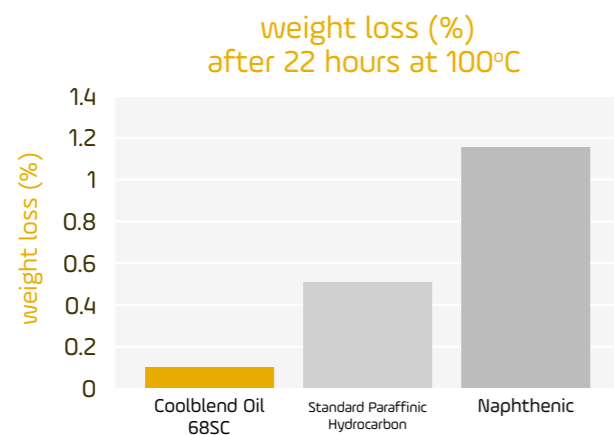
for use in  
Ammonia  
Compressors

# coolblend OIL

## 68SC Seal Conditioner

Coolblend Oil 68SC is an OEM approved ammonia refrigeration oil, formulated with a seal conditioner additive to reduce the likelihood of oil and refrigerant leakage. With its low fluid loss rate and extreme cool temperature fluidity, Coolblend Oil 68SC reduces oil consumption, promotes greater oil return and maintains thermal transfer efficiency.

### Volatility



### Low Volatility

Coolblend Oil 68SC's low volatility reduces oil carryover. Up to 80% less oil carryover than naphthenic and PAO/AB formulations.

### Specifications

Property	Coolblend Oil 68SC
ISO Grade	68
Viscosity at 40°C (cSt)	61.5
Viscosity Index	109
Specific Gravity at 15°C	0.85
Pour Point (°C) (cSt)	-42
Flash Point (°C) (cSt)	247
Copper Strip Corrosion, 100°C for 3hrs	1a

### Low Viscosity

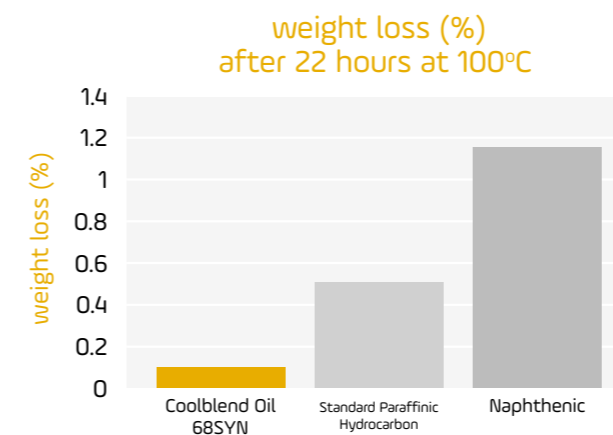
Coolblend Oil 68SC's low viscosity helps maintain high fluidity in extreme cool temperatures. Operate refrigeration system at temperatures as low as -45°C.

# coolblend OIL

## 68SYN Synthetic Oil

Coolblend Oil 68SYN is an OEM approved polyalphaolefin (PAO) base refrigeration oil, formulated specifically for extreme cool ammonia systems. Developed using highly stable POA oils, Coolblend Oil 68SYN offers lower oil carryover rates than mineral oils. Coolblend Oil 68SYN is a food grade formulation meeting H-1 requirements.

### Volatility



### Low Volatility

Coolblend Oil 68SYN's low volatility reduces oil carryover. Up to 80% less oil carryover than naphthenic and PAO/AB formulations.

### Specifications

Property	Coolblend Oil 68SYN
ISO Grade	68
Viscosity at 40°C (cSt)	64
Viscosity Index	145
Specific Gravity at 15°C	0.83
Pour Point (°C) (cSt)	-54
Flash Point (°C) (cSt)	264
Copper Strip Corrosion, 100°C for 3hrs	1a

### Low Viscosity

Coolblend Oil 68SYN's low viscosity helps maintain high fluidity in extreme cool temperatures. Operate refrigeration system at temperatures as low as -54°C.

# Maintaining & testing glycol based heat transfer fluids

HVAC systems experience changes such as leaks and corrosion within their piping components that can ultimately affect the heat transfer fluid used within them. Observing these changes can significantly increase the effectiveness and longevity of the fluids.

A benefit of in-house laboratory testing at Blended is that pre-emptive actions can be taken before the point of costly system failure.

## Our testing includes:

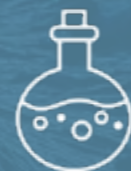


### pH levels check

A common route of glycol decay is oxidation, this route causes the formation of acidic chemicals which are corrosive. Under normal circumstances corrosion inhibitors will prevent corrosion from small amounts of acidic compounds.

Many corrosion inhibitors are most effective at basic pH levels and if the formation of these acidic compounds lowers the pH it can reduce the effectiveness of the corrosion inhibitor or in some cases stop it working entirely.

Measurement of the glycol pH allows the monitoring of the situation so preventative action can be taken if needed.



### Determination of iron content

If corrosion is occurring inside your system, then this can be accurately monitored via the iron content of the glycol. Most systems are built with steel and if the metal begins to corrode this can be readily detected by increasing iron content in the glycol mixture.

Our spectroscopic method allows for very accurate determination of the iron content in samples.



### Review of conductivity

This measurement allows for determination for dissolved salts in the glycol mixture.

These dissolved solids promote corrosion and can indicate that incorrect water is being used for the loading or top up of the system.



### Refractometry

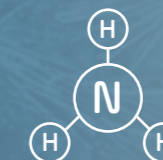
This provides an accurate measurement of glycol within the system. With this information it should be possible to determine if a leak has formed on your system somewhere. As water is used to top up the system as per usual (due to water loss) the glycol content will decrease. It is key to maintain glycol levels to keep the frost protection for your system.



### Turbidity Assessment

This is a measure of how cloudy the glycol is. Most problems that can occur in your system be it corrosion or otherwise will cause the glycol mixture to go cloudy.

Turbidity measurements allow you to measure this and determine if your glycol is becoming contaminated with suspended solids.



### Ammonia Presence Testing

Using our advanced spectroscopic equipment, it is possible to determine if the glycol has been contaminated with ammonia.

This would be indicative of cross contamination between primary and secondary refrigerant.

# Our Office

Elsham Wold  
Industrial Estate,  
Brigg, DN20 0SP

Opening Hours:  
Monday – Friday 8.30am to 5.00pm

**01652 680555**

For out of hours emergencies please dial  
01652 680555 and press **option 4**.



[www.blendedproducts.com](http://www.blendedproducts.com)

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