

A-GAS™

Speciality Chemicals

AGAS MPG PLUS



Secondary Refrigerants like Mono Propylene Glycol are used in the refrigeration industry to minimise the quantity of primary refrigerant required to meet the systems cooling requirements.

The primary refrigerant is usually expensive, a synthetic greenhouse gas or it can sometimes be a very hazardous product for the operator to handle (eg Ammonia or hydrocarbons). A secondary loop is therefore used to transfer the cool from the primary refrigeration unit around the system using a product with good heat transfer properties, that protects the system from corrosion and is non hazardous for the operator and the public.

A-Gas MPG Plus is a non-toxic 'ready to use' heat transfer fluid based on mono propylene glycol that has organic corrosion inhibitors added to keep the secondary system clean and ensure you get optimal corrosion protection. This easy to use product gives freezing and corrosion protection in secondary loop applications down to minus15 deg C. These applications include beer, milk, beverage and fresh fruit cooling systems.

A-Gas MPG Plus is compatible with most other mono propylene glycol based heat transfer fluids, but exclusive use of the *A-Gas MPG Plus* is recommended to maximise the corrosion protection of the system.

SPECIFICATIONS:

Product:	Inhibited Mono Propylene Glycol
Colour:	Light blue — green
pH:	8.7
Freeze Point:	-15 deg C
SG:	1.029

PACKS:

5kg Bottle 20kg Pail 216kg Drum

Note: *A-Gas MPG Plus* can only be used in non contact food cooling applications and can not be used in direct contact with food.

Disclaimer: All information contained in this document is accurate to the best of our knowledge and belief as at the time of publication. However, the company makes no warranty or representation, express or implied, as to the accuracy or completeness of such information.

CORROSION PROTECTION

Secondary Refrigerants like Mono Propylene Glycol are used in the refrigeration industry to minimise the quantity of primary refrigerant required to meet the systems cooling requirements. The secondary refrigerants are designed to operate in closed systems as oxygen in combination with metals will cause corrosion. Most corrosion inhibitors will deplete faster in an open system where oxygen is present.

A-Gas MPG Plus is a non-toxic ‘ready to use’ heat transfer fluid based on mono propylene glycol that has organic corrosion inhibitors added to keep the secondary system clean and ensure you get optimal corrosion protection.

This optimised inhibitor package based on carboxylate technology also guarantees a longer lifetime than traditional products. ‘Topping up’ systems with water is not recommended as the water will decrease the freezing protection level and will dilute the inhibitors allowing corrosion to take place.

CORROSION PROTECTION TEST:

ASTM D1384	Weight Loss in mg/coupon				
	Brass	Steel	Cast Iron	Aluminium	Copper
Standard Limit (Max)	10.0	10.0	10.0	30.0	10.0
MPG — Std inhibitor	1.0	-0.1	-0.1	-0.9	1.5
A-Gas MPG Plus	0.6	0.2	0.1	-2.0	0.9

Note: a negative figure indicates a weight gain

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ENGINEERING GUIDELINES

Secondary Refrigerants like Mono Propylene Glycol are used in the refrigeration industry to minimise the quantity of primary refrigerant required to meet the systems cooling requirements. The secondary refrigerants are designed to operate in closed systems as oxygen in combination with metals will cause corrosion.

Before filling the secondary system with A-Gas MPG Plus the system should be clean and pressure tested. The heat transfer fluid (HTF) should be filled from the lowest point to expel any entrapped air from the high points using mandatory air purging devices installed on the system.

Due to expansion of the HTF at lower temperatures the system must be designed with a suitable size expansion tank so the pipes do not burst or seals leak at lower temperatures.

It is recommended to use only 'ready for use' products that have been especially and accurately formulated for the freezing temperature selected. Dilution of a concentrate in the field with tap water, especially with high chlorides, will markedly affect the corrosion rate in the system. Only distilled or softened water should be used for dilution if using an MPG concentrate and only if accurate measuring and mixing can be guaranteed.

Once filled do not start the system fluid pump until the system has been air purged. To avoid erosion in the system it is recommended that the flow rate is limited to 1.5m/s.

Suitable pipe materials are copper, brass, steel, cast iron. ABS and PP plastic pipes can be used but not recommended for low temperatures. Zinc and galvanised steel are not recommended materials for use with mono propylene glycols. It is also recommended that 0.6-0.8mm filter be placed on the pressure side of the pump to trap any corrosion products.

For elastomers and materials suitable for seals and valves please refer to the specific information sheet available.

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ELASTOMER COMPATIBILITY

Secondary Refrigerants like Mono Propylene Glycol are used in the refrigeration industry to minimise the quantity of primary refrigerant required to meet the systems cooling requirements.

A-Gas MPG Plus is a non-toxic 'ready to use' heat transfer fluid based on mono propylene glycol that has organic corrosion inhibitors added to keep the secondary system clean and ensure you get optimal corrosion protection.

Choice of materials for gasket and pump seal selection is important to prevent leaks from occurring in the closed system. The following list gives some polymers that are expected to be compatible with the A-Gas MPG Plus product.

- Viton (FPM)
- Nitrile Rubber (NBR)
- Ethylene Propylene Diene Rubber (EPDM)
- Polyethylene (LDPE and HDPE)
- Polypropylene (PP)
- Butyl Rubber
- Neoprene
- Polyamide
- Polyvinylchloride (PVC)

The manufacturer of the elastomer should be contacted to ensure that the operating temperature range of the heat transfer fluid is compatible to the elastomer selected.

The increased viscosity of the A-Gas MPG Plus at lower temperatures must also be allowed for when choosing the pump seal materials.

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