



Polartech® 8440 Boron Based, Aqueous Phase Corrosion Inhibitor Package

Description

Polartech® 8440 is a flexible and versatile boron based, secondary amine free, formaldehyde-release biocide free, water soluble aqueous phase synthetic corrosion inhibitor package.

Polartech® 8440 can be used to form the basis of a series high performance grinding and cutting fluids. Polartech® 8440 is also designed for use in conjunction with the oil phase emulsifier package Polartech® 8280.

Polartech® 8440 is based on Italmatch's BA series technology and technology used in Polartech® MP 900 CU. Both are proven to have robust, long lasting high performance. Polartech® 8440 provides this technology in a unique package format, avoiding costly R&D development time. Polartech® 8440 offers blenders the flexibility to produce a range of synthetic and semi-synthetic metalworking fluids to meet the high demands of the modern machine shop with the latest EHS standards.

Polartech® 8440 also addresses the problems associated with difficult water qualities in order to deliver exceptional performance and productivity for the end user.

Key Performance Benefits

- A Premium secondary amine free and formaldehyde-release biocide free package with high activity delivering high performance, robust corrosion protection (ferrous and yellow metals)
- Italmatch's boron based technology enhancing long fluid life
- Excellent pH buffering to maintain fluid life and reduce maintenance time
- Easy to handle
- Low foaming in soft water and clean in hard water, reducing maintenance time
- Multiple blending options, allowing simplification of formulation and component inventory
- Flexibility of treat rate
- Low tendency to form sticky residues, making machine tool maintenance easier
- TRGS 611 / REACH compliant
- Efficient flushing action and fines separation to keep the grinding/cutting zone clear and protect the workpiece
- Optimised to work with Polartech® 8280

Typical Package Characteristics

Appearance:	Clear water white/pale straw
Specific Gravity at 15.5°C	1.2
Kinematic viscosity at 40°C, cSt	349
Total Alkalinity, % KOH	35
pH @ 5% in Deionised	9.8
IP287 Fe corrosion, % bp	1.5

Typical Applications of Finished Fluids Using Polartech® 8440

- Synthetic Watermix Cutting / Grinding Fluids
- Semi-synthetic watermix metalworking fluids
- General machining of mainstream ferrous alloys including free cutting aluminium
- Grinding
- Heavy duty machining* (at high concentrations)
- Machining of stainless steel, titanium and nickel alloys (at high concentrations)*

*when additional polymer is included

Storage

Store inside warehouse, ideally between 10°C and 30°C
Shelf life of 12 months from date of manufacture
Store out of direct sunlight
Avoid water collecting on barrel top





Recommended Blend

Component	%wt
Polartech® 8440	35.0
Good Quality Water	Difference
Fungicide ¹	0.6
Chelating Agent ²	0.2
Polymer (if required) ³	5.0-10.0
Antifoam (when polymer is added) ⁴	0.05

¹Sodium Omadine

²Dissolvine GL 38

³Polartech® LA 8425

⁴Polartech® AF 2000

Test

Concentrate Appearance
 Emulsion Stability at 5% in Deionised Water
 Emulsion Stability at 5% in 200ppm
 pH (at 3% in deionised)
 Refractometer Factor
 IP125 Ferrous corrosion at 2%

IP287 Cast Iron Corrosion

DIN 51360 Pt II

CNOMO Foam Test
(5% in 50ppm)

Manufacturing Guidance

- Ideal blending temperature is between 20°C and 30°C
- Add good quality water to the blending vessel
- Add Polartech® 8440 with good mixing
- Add selected fungicide and chelating agent with good mixing
- Add the polymer, if required, and mix thoroughly for a further 30minutes.

Please contact Italmatch Chemicals for further detailed formulation and blending guidance.

Typical Performance Characteristics

Amber liquid
 Clear stable solution
 Clear stable solution
 9.6
 2.6
 0/0-0

