

**Typical Properties**

Appearance	Colorless to Clear Pale Yellow Liquid
Active Ingredient	Methylene Bismorpholine
Specific Gravity@25°C	1.050 - 1.200
Viscosity@40°C, cSt	4 - 10
pH Value (5% Water Dilution)	9.0 -11.0

**Product Description**

**SMARTCIDE MBM** is a liquid, organic broad spectrum preservative designed for use in both the concentrate and working dilutions of soluble oil, semi-synthetic and synthetic metalworking fluid systems, which may be subject to microbial degradation. It is effective against both bacteria and fungi.

**Advantages**

- Cost effective;
- Proven efficacy against a broad range of bacteria and fungi at recommended use levels;
- Extends life of metalworking fluids;
- Easy to use liquid, at 0.15% (1500ppm) concentration in end-use dilution;
- For use in individual sumps as well as large central systems;

**Efficacy**

**SMARTCIDE MBM** has shown excellent efficacy against:

Bacillus subtilis; Proteus vulgaris; Desulfovibrio desulfuricans;  
 Klebsiella pneumoniae; Enterobacter aerogenes; Staphylococcus aureus;  
 Escherichia coli; Streptococcus faecalis; Proteus vulgaris.

**Use level**

**SMARTCIDE MBM** at appropriate use levels in both laboratory and field evaluations, inhibits microbial growth. Products protected with **SMARTCIDE MBM** can generally resist long-term, repeated challenge of microorganisms. Depending on the levels of protection required, **SMARTCIDE MBM** should be added to the metalworking fluid concentrates at levels of 2-5%, to provide 1,000 - 2,000 ppm in the final dilutions of the metalworking fluids. In order to evaluate the correct use levels, it is important to carry out laboratory tests.

<b>Applications</b>	<b>Suggested Treat Rates, %wt</b>
Concentrate	2 - 5
Dilution	0.1 - 0.2

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