

# Balmerol® Protosol MC

Soluble Cutting Oil

Product Data Sheet

## Product Description

BALMEROL PROTOSOL MC is emulsifiable oil specially developed for metal cutting operations. Balmerol Protosol MC meets IS: 1115-1986 and is easily emulsified in hard or soft water with minimum agitation. It has high emulsion and PH stability, even at temperatures up to 500°C, thereby ensuring uniform properties during prolonged recirculation. Balmerol Protosol MC shows no change in characteristics upon freeze-thawing and has excellent cleanliness and burn off properties. Balmerol Protosol MC has good anti frictional and load-bearing properties to reduce tool wear and improved surface finish. This superior performance is achieved at lower emulsion strength thereby reducing oil consumption.

## Applications

BALMEROL PROTOSOL MC is suitable for various cutting operations of ferrous and nonferrous metals. The excellent cooling and lubrication properties at chip/tool interface ensures long tool life and improved surface finish in machining operations using 4 - 5 % aqueous emulsion while a more dilute emulsion is suitable for grinding operations. In order to achieve maximum benefits, the optimum emulsion strength for a specific application area may be determined through the process of extended trials. Balmerol Protosol MC concentrate / high strength emulsion has good rust inhibitive properties and is recommended as an effective temporary corrosion protective during intermediate idle periods in multiple stage metal cutting operations.

## Availability

BALMEROL PROTOSOL MC is normally available in drum and pail.

## Typical Data

BALMEROL Protosol MC (Soluble cutting oil)				
No	Characteristics	Unit	Method	Spesification
1	Appearance	--	Visual	Clear & Bright
2	Colour	--	Visual	Dark brown
3	Kinematic Viscosity @ 40°C	cst	ASTM D 445	27.08
4	Water content	% by wt	TMM	5
Emulsion water				
5	a) 5 : 1 ratio in 400 ppm hard water	ml	TMM	0.2
	b) 20 : 1 ratio in 400 ppm hard water			0.1
Frothing test				
6	a) 5 : 1 ratio in 400 ppm hard water	ml	TMM	No froth after 15 minutes
	b) 20 : 1 ratio in 400 ppm hard water			
Cast iron corrosion test				
7	a) 20 : 1 ratio in 400 ppm hard water	ml	TMM	0 / 1-1
8	Flash point, COC	°C	ASTM D 92	170
9	Copper strip corrosion @ 100 deg C for 3 hr	-	ASTM D 130	1b

## Health and Safety

Balmerol Protosol MC is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Safety Data Sheet (SDS) are followed.

For further information, contact:

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