MAK TRIPONOL

Superior metalworking fluids with active chemistry

MAK Triponol is a range of transparent neat metal cutting oils with active sulphur suitable for a wide range of applications. They are blended from highly refined, high viscosity index base oils with extreme pressure additive. Lubricity additive ensures reduction in friction at the chip-tool interface and provides superior surface finish. These oils are suitable for operations of difficult to machine metals. They tend to stain copper and its alloys.

Grades: MAK Triponol range has the following grades – **B, C, D, R, H** and **HX**

Applications:
These high performance neat cutting oils have different viscosity grades with different levels of extreme pressure capability. They are suitable for all ferrous metals like low carbon steel, bearing steel, tensile steel etc.

Grades: B, C, D, R
These grades are predominantly used for general machining of steels in automatics lathes, screw cutting machines, gear cutting etc. MAK Triponol D is approved by M/s. TATA Motors for metal cutting operation.

Recommended Use	B	C	D	R
Gear Cutting, Tapping, Threading, Milling, Shaping	√√	√	√	--
Broaching	--	--	--	--
Slow Speed General Machining	--	√√	√√	--
Belt or Strip Grinding	--	--	--	√√

√√ Main applications, √ Check with supplier

Grades: H, HX
These are the low viscosity oils in the series with very high weld load and are suitable for severe operations. They are particularly designed for cutting operations of materials difficult to machine, deep hole drilling and broaching operation.

Recommended Use	H	HX
Deep Hole Drilling/ Gun Drilling	√√	√√
Broaching	√√	√√
Grinding	--	--
Tapping, Threading, Milling, Gear Cutting	--	--

√√ Main applications

Performance/ Benefits:

Excellent EP property – active sulphur provides excellent load bearing capability and protection to tools and also ensures superior surface finish to the job.

High VI – ensures adequate film strength even at high temperatures. It is suitable for single sump machines also.

Excellent Lubricity – contains fatty oil to provide excellent lubricity and to reduce friction. It improves the surface finish and extends tool life.

Excellent Rust Protection – for both machine tools and work pieces.

Outstanding Oxidation Resistance – prevents the formation of sludge and enhances the life. Reduces the cost of operation.

Light Colour – light transparent colour ensures good visibility during the operation.

Low Oil Mist Characteristics – reduces oil consumption and provides good working environment.

Heavy Duty Performance – enhances tool life and ensures precision finishes.

Specification:

- MAK Triponol C – IS 3065:1985 (Reaffirmed 2013)
- MAK Triponol B, D, R, H & HX – Proprietary Grade

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Typical Physico-Chemical Data: MAK Triponol

Characteristics	Method	B	C	D	R	H	HX
Appearance	Visual	Clear	Clear	Clear	Clear	Clear	Clear
Colour	Visual	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent
Density, g/cc @15^{O}C	ASTM D1298	0.8798	0.8802	0.8914	0.853	0.8836	0.8700
Copper Corrosion, 100^{O}C, 3 hrs.	ASTM D130	4c	4c	4c	4a	4c	4c
Flash Point, COC, ^{O}C	ASTM D92	166	166	196	180	170	170
Kinematic Viscosity @40^{O}C, cSt	ASTM D445	24.40	35.20	31.44	12.50	13.46	18.73
Weld Load, kg	ASTM D2783	400	620	800	400	800	>800

Additive:

	B	C	D	R	H	HX
Sulphur	√	√	√	√	√	√
Chlorine	--	--	--	√	--	--
Phosphorus	--	--	√	--	--	--
Fatty Oil	√	√	--	√	√	√
Ester	--	--	--	--	--	--

Storage & Handling:
These products should be stored inside. Keep it properly sealed to avoid contamination. Avoid freezing. Shelf life is 3 yrs. under protected storage conditions.

Health & Safety:
These oils are unlikely to be hazardous when properly used in recommended applications. Contamination of the oil from other oils, greases, chemicals, dirty water etc. can occur during the use. It should be avoided. Regular monitoring of the in-use product is recommended.

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