

product data sheet

VARCOOL 1005

Soluble oil metalworking fluid

Varcool 1005 is a metal working fluid that produces a milky white emulsion that is free from boric acid and biocides, being suitable for use in both hard and soft water. The product forms a stable emulsion that is highly inhibited against bacterial growth.

Varcool 1005 has been developed to exhibit full multi-metal compatibility and is suitable for economical use on a wide variety of machining applications.

Varcool 1005 exhibits excellent lubricity characteristics, making the product suitable for a whole variety of machining applications whilst maintaining machine cleanliness and operator acceptability.

Applications

Reaming	Tapping and threading
Deep hole drilling and boring	Turning
Milling	Centerless grinding

Features & Benefits

- Excellent performance characteristics
- Free of chlorine, sulphur and phosphorous EP additives
- Boron free
- Suitable on steel, aluminium, titanium, nickel
- Suitable for use in hard and soft water
- High performance in arduous operations

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Typical Operations

Drilling & boring	8% to 12%	General machining	4% to 6%
Reaming	8% to 12%	Centerless grinding	3% to 10%
Threading, tapping	5% to 10%	Metal forming	4% to 12%
Broaching, sawing	8% to 10%	Turning, milling	4% to 6%

Varcool 1005 Typical Characteristics

Characteristic	Typical Data	Characteristic	Typical Data
Appearance	Amber liquid	IP287 corrosion breakpoint	3%
Odour	Bland	Specific Gravity (@20°C)	0.992
Emulsion Appearance	Milky White	Loadbearing capacity (kg/mm ²)	1.05
PH (@ 5% concentration)	9.5	Refractometer conversion factor	2.0

Additional Technical Information – Varcool 1005

Varcool 1005 is free of boron; boric acid has been given the status of a SVHC (substance of very high concern). Boric acid derivatives are used in a number of water-mix metal working fluids. Although there has been a lot of work to prove that the boric acid derivatives do not contain free boric acid there has been a move in the market to move away from boric acid derivatives in water-mix metal working fluids.

Bio-stability - these products give excellent bio-control maintaining bacteria levels well within the HSE (Health and Safety Executive) guidelines.

Corrosion inhibition - These products give equivalent corrosion protection, or better than boron containing products.

For maximum service life, coolant systems should be cleaned and sterilised by treatment with **Varclean System Cleaner**. This high performance system cleaner can be used whilst production is continued for up to 24 hours prior to exchange of fluids. Please refer to the **Varclean System Cleaner** data sheet for detailed application information or contact your Varol sales agent.

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Varol Metalworking		Varol Machine Lubricants	
Varcut	Neat cutting oils, high performance, extensive range of viscosities	Varlube S Visc 32 - 320	Slideway
Varform	Comprehensive range of neat forming oils, including water extendable versions and vanishing oils	Varmulti Visc 32 - 680	Multilube - Slideway, Gear, Hydraulic
Varclean	Aqueous based wash fluids, surface cleaners and solvent degreasers	Vargear Visc 68 - 460	Industrial Gear
Varcool & Vargrind	Comprehensive range of high performance water soluble fluids. Low, medium, high oil content and synthetics	Varpress Visc 5 - 150	Hydraulic oil range covering zinc containing, zinc free and high VI

Operational Recommendations

Varcool 1005 is designed to be mixed with water; it has been developed to exhibit full multi-metal compatibility and is suitable for use in soft and hard water types.

Mix emulsions of **Varcool 1005** with water by adding concentrate to water and then mixing or use a suitable proportioning mixer unit, these are available on request. The use of an airline to mix the solution is not recommended. Machine top up may require a weaker dilution than the initial machine charge concentration. Recommended concentrations can vary depending on operations, materials, tooling, coolant pressure, coolant flow. The above information is given for guidance. Please contact your representative for further advice.

Varcool 1005 should always be stored indoors and protected from frost. Good standards of hygiene and housekeeping should always be adopted when using any metalworking fluid. A separate SDS is available for this product.

As with all modern cutting fluids, concentration control is of paramount importance, therefore regular check by use of a refractometer is recommended for this product. It should be noted that the individual product refractometer correction factor should always be used to ensure accuracy.