

product data sheet

VARCOOL 1010

A high oil content soluble oil metalworking fluid

Varcool 1010 is a boron free high oil containing metal process fluid which produces a milky white emulsion when diluted in water. The product is compounded to form a stable emulsion in both hard and soft water and is highly inhibited against bacterial growth.

Varcool 1010 has been developed to exhibit full multi-metal compatibility and is suitable for economical use on a wide variety of machining applications.

Varcool 1010 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
- Centreless grinding
- Rolling and forming

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

Typical Operations

■ Drilling, boring	8% to 12%	■ General machining	4% to 6%
■ Reaming	8% to 12%	■ Centreless 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 1010

Characteristics	Typical Data	Characteristics	Typical Data
Appearance	Amber liquid	IP287 corrosion breakpoint	3% (v/v)
Odour	Bland	Specific Gravity (@20°C)	0.90
Emulsion Appearance	Milky White	Loadbearing capacity (kg/mm ²)	1.050
PH (@ 5% concentration)	9.5		

product data sheet

Additional Technical Information – Varcool 1010

Varcool 1010 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.

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 1010 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 1010** 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 1010 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 MSDS 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.