

product data sheet

VARCOOL 2140

A high performance multi-functional metalworking fluid

VARCOOL 2140 is a high lubricity formulation containing a unique combination of technologically advanced lubricants the product offers superior tramp oil rejection, low usage rates and fantastic operator acceptance.

VARCOOL 2140 is a high performance, semi-synthetic metalworking fluid formulated for machining and grinding of a wide range of materials. This formulation achieves the highest levels of ferrous rust protection whilst also maintaining low levels of foam even in soft water areas. The product forms a stable translucent micro emulsion in both soft and hard waters and is inhibited against bacterial growth.

VARCOOL 2140 has been developed for moderate to difficult machining operations and contains HP (high performance) esters, is free of chlorine and secondary amines. It is suitable for use across a wide range of materials, ferrous, non-ferrous and aerospace alloys.

Applications

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

Features & Benefits

- Excellent performance characteristics
- Contains HP ester additives
- Biocide and chlorine free
- Low foam in high pressure systems
- Suitable on ferrous, non-ferrous, aluminium and aerospace alloys
- Suitable for use in soft to hard water
- High performance in arduous operations
- Micro emulsion provides excellent flushing and cooling

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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 2140 Typical Characteristics

Characteristic	Typical Data	Characteristic	Typical Data
Appearance	Amber liquid	IP287 corrosion breakpoint	3%
Odour	Sweet	Specific Gravity (@20°C)	1.00
Emulsion Appearance	Translucent	Loadbearing capacity (kg/mm ²)	1.63
PH (@ 5% concentration)	9.3	Refractometer conversion factor	1.60

Additional Technical Information

VARCOOL 2140 is a truly versatile water soluble metalworking fluid that can be used across a diverse range of metals, applications and water hardnesses. The performance parameters of Varcool 2140 make it an ideal candidate product to be used throughout a machine shop as a high performance general purpose coolant and grinding fluid. If further information is required please consult your local selling agent or Varol Technical Department for further information

VARCOOL 2140 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 Viscosity 32 - 320	Slideway
Varform	Comprehensive range of neat forming oils, including water extendable versions and vanishing oils	Varmulti Viscosity 32 - 680	Multilube - Slideway, Gear, Hydraulic
Varclean	Aqueous based wash fluids, surface cleaners and solvent degreasers	Vargear Viscosity 68 - 460	Industrial Gear
Varcool & Vargrind	Comprehensive range of high performance water soluble fluids. Low, medium, high oil content and synthetics	Varpress Viscosity 5 - 150	Hydraulic oil range covering zinc containing, zinc free and high VI

Operational Recommendations

VARCOOL 2140 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 2140** 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 2140 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.