

# product data sheet

## **VARCOOL 3053**

### **A high performance multi-functional metalworking fluid**

**VARCOOL 3053** is the latest in chlorine free technology offering significant advantages in performance without the use of chlorinated additives. It is inherently low foam and is excellent in soft to hard water. It is suitable for use on a wide range of difficult materials and is a perfect choice for aerospace and high technology manufacturing.

**VARCOOL 3053** offers unrivalled cutting and wetting performance and can be used in all types of arduous manufacturing applications. The performance additives incorporated into the fluid provides outstanding surface finish on all types of steel, aluminium, titanium and other aerospace alloys. The unique formulation prevents scum and soap formation associated with more reactive materials and can be used across a wide range of filtration / types of filter media systems without causing blinding.

**VARCOOL 3053** incorporates the latest performance additives; the product also exhibits excellent lubricity characteristics to provide both good tool life and surface finish. The product is highly resistant to bacteria formation and exhibits excellent corrosion resistance whilst maintaining machine cleanliness and operator acceptability.

#### **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 3053 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 <sup>2</sup> )	1.63
PH (@ 5% concentration)	9.3	Refractometer conversion factor	1.60

## Additional Technical Information

**VARCOOL 3053** 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 3053 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 3053** 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	
<b>Varcut</b>	Neat cutting oils, high performance, extensive range of viscosities	<b>Varlube S</b> Viscosity 32 - 320	Slideway
<b>Varform</b>	Comprehensive range of neat forming oils, including water extendable versions and vanishing oils	<b>Varmulti</b> Viscosity 32 - 680	Multilube - Slideway, Gear, Hydraulic
<b>Varclean</b>	Aqueous based wash fluids, surface cleaners and solvent degreasers	<b>Vargear</b> Viscosity 68 - 460	Industrial Gear
<b>Varcool &amp; Vargrind</b>	Comprehensive range of high performance water soluble fluids. Low, medium, high oil content and synthetics	<b>Varpress</b> Viscosity 5 - 150	Hydraulic oil range covering zinc containing, zinc free and high VI

## Operational Recommendations

**VARCOOL 3053** 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 3053** 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 3053** 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.