

## APPENDIX 3



# TRIM<sup>®</sup> VX

## *Extreme Lubricity Emulsion*

### GENERAL DESCRIPTION

TRIM<sup>®</sup> VX is a soluble oil (chemical emulsion) coolant designed to do the heaviest duty machining operations. VX is often used as a replacement for straight cutting and grinding oils. It contains very high levels of EP additives including stable chlorine and sulfur. Additional friction modifiers, including sulfurized fats and particle size modification technology, are used to reduce the mechanical friction seen in many heavy-duty machining and grinding operations.

### ADVANTAGES

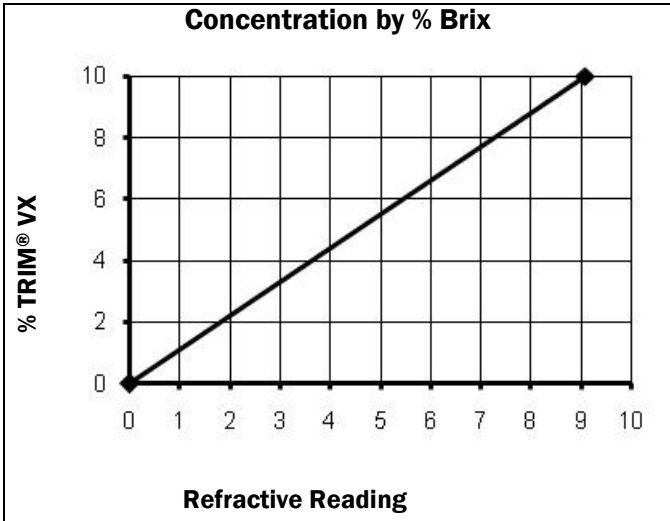
- Even with all these EP additives and friction modifiers, VX will not stain “white and yellow” metals
- Cools better than straight oil to allow higher metal removal rates without heat damage
- Contains a proven and highly effective extreme pressure (EP) additive to control built-up edge and prevent wheel loading and packing
- Leaves a soft fluid film to prevent sticky ways, chucks, tool holders, and fixtures
- Coolant residue is easily removed with water, working solution, or aqueous cleaners
- Easy recycling or disposal with conventional techniques and equipment

### APPLICATION GUIDELINES

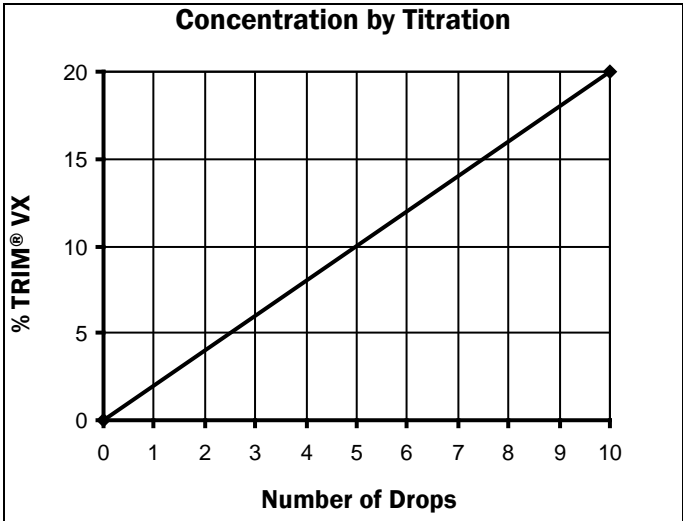
- VX is designed to do the heaviest operations possible with water miscible metal removal fluids.
- It is compatible with TRIM SOL<sup>®</sup> and all other TRIM<sup>®</sup> soluble oils, and may be used as an additive to them.
- While it is intended primarily for use in metal removal, it has been very successful in some stamping and drawing operations.
- Higher concentrations are recommended on soft, gummy materials and for lower speed operations where friction reduction and control of the built-up edge are critical. In high-speed operations where heat removal is the critical issue, it can be run at lower concentrations.
- Concentrations in excess of 7% provide the best sump life.
- For additional product applications information, including performance optimization, please contact your Master Chemical Authorized Distributor at [2trim.us/distributors.php](http://2trim.us/distributors.php) your District Sales Manager, the Tech Line at 1-800-537-3365, or visit our web site at [www.masterchemical.com](http://www.masterchemical.com).

### PHYSICAL PROPERTIES (TYPICAL DATA)

|                                |             |  |                                |
|--------------------------------|-------------|--|--------------------------------|
| Color (Concentrate) .....      | Dark brown  | Flash Point .....                            | None to boiling (ASTM D92-12B) |
| Color (Working Solution) ..... | Light brown | pH (Typical Operating as a Range) .....      | 8.3-9.3                        |
| Odor .....                     | Mild        | Coolant Refractometer Factor % Brix .....    | 1.1                            |
| Form .....                     | Liquid      | Titration Factor (CGF-1 Titration Kit) ..... | 2.000                          |



% Concentration = Refractive Reading x Refractive Factor  
Coolant Refractometer Factor % Brix = 1.1



% Concentration = No. of Drops x Titration Factor  
Titration Factor = 2.000

RECOMMENDED METALWORKING CONCENTRATIONS

- Moderate-duty machining .....5%-7%
- Heavy-duty machining .....7%-10%
- Very heavy-duty machining .....10%-20%
- Design concentration range.....5%-20%

MIXING INSTRUCTIONS

- Using DI or mineral-free water will improve sump life, reduce concentrate usage, reduce carryoff, and improve corrosion inhibition.
- Emulsion products such as VX work best if mixed with room temperature water. Add the coolant concentrate to the water; NEVER THE REVERSE.
- Using premixed coolant as makeup will improve performance and reduce coolant purchases. The makeup concentration you use should balance the water evaporation rate with the coolant carryout rate. (Adding makeup coolant at 40%-60% of the desired working concentration will generally maintain the proper concentration in the sump.)

HEALTH & SAFETY

See the most recent MSDS at [2trim.us/ms/?i=144](http://2trim.us/ms/?i=144).



NOTES

- Use Master STAGES™ Whamex™ for a quick and thorough pre-cleaning of your machine tool and coolant system prior to charge-up.
- Before using this product on any metals and applications not specifically recommended, consult Master Chemical Corporation.
- This product should not be mixed with other metalworking fluids or metalworking fluid additives, except as recommended by Master Chemical Corporation, as this may reduce overall performance, result in adverse health effects, or damage the machine tool and parts. If contamination occurs, please contact Master Chemical Corporation for recommended action.
- VX working solution is a light brown color.
- Packaging: North America – 5-gallon pail, 54-gallon drum, 270-gallon recyclable bin, and tank wagon lot; Europe/Asia – 20-litre pail, 204-litre drum, 1000-litre IBC.

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