

**MicroLubricant ML-450**  
**Minimum Quantity Lubrication**  
**Medium Duty MQL**  
**For Steel and Aluminum Alloys**



**PRODUCT DESCRIPTION**

*MicroLubricant ML-450* is a naturally derived minimal quantity lubricant typically applied in “drops” to eliminate traditional flood coolant applications. *MicroLubricant ML-450* is ideally suited for *near dry machining* operations. *MicroLubricant ML-450* is an excellent choice for tough aluminum alloys, tool steels and super alloys. *MicroLubricant ML-450* is the ideal replacement for any operation using water dilutable coolants.

Micro Lubrication, now that's... **Clever.**

**BENEFITS**

- ✓ *Heat Treatable*
- ✓ *Eliminates* coolant maintenance
- ✓ *Eliminates* corrosion
- ✓ *Eliminates* post cleaning process
- ✓ *Eliminates* rancidity and odors
- ✓ *Eliminates* costly additives
- ✓ *Eliminates* mixing/measuring
- ✓ *Eliminates* smoke and oil residue
- ✓ *Eliminates* coolant waste
- ✓ *Improves* air quality – no misting
- ✓ *Eliminates* staining on sensitive metals
- ✓ **100% Biodegradable**
- ✓ Produces dry chips – easier to process
- ✓ Cost effective
- ✓ *Eliminates* petroleum oils
- ✓ *Reduces* friction and heat
- ✓ *Faster* machining – *Improved* finishes
- ✓ *Eliminates* tramp oils

**APPLICATIONS**

All metal operations benefit from MQL due to the unique lubrication properties, including but not limited to the specific operations listed below:

- ✓ Sawing & Cut-Off
- ✓ General and CNC Machining
- ✓ Rollforming
- ✓ Spinning
- ✓ Deep hole drilling
- ✓ Vacuum forming – Mold Release
- ✓ Injection molding
- ✓ Metalforming operations

**DIRECTIONS FOR USE**

*MicroLubricant ML-450* is used as received. The lubricant is typically applied directly to the cutting tool through an adjustable applicator that does not atomize. *MicroLubricant ML-450* must contact the tool **before** cutting or forming begins. Increasing the feed rate eliminates hot parts and reducing the feed rate eliminates hot tooling.

**PROPERTIES**

Appearance	Orange, clear liquid	Water Solubility	N/A
Odor	Bland	pH	N/A

**PACKAGING**

*MicroLubricant ML-450* is available in 1 gallon containers, 5 gallon pails, 55 gallon drums and 330 gallon

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for loss, damage, or expense, direct or consequential, arising out of their use.

No one understands micro lubrication better than Metalloid, so no one else can bring you advanced technology that works on the issues that matter to you. Get the whole story by calling Metalloid at **800.686.3201**.



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