

# OPTICOOL 972(E)

## Description

OPTICOOL 972(E) is a high performance, low maintenance synthetic fluid. OPTICOOL 972(E) is DEA and Boron free and offers superior lubricity, corrosion inhibition, extreme pressure resistance, rancidity control and hard water stability. OPTICOOL 972(E) is usable in a broad range of machining operations from low to high speed and recommended for alloy steels, cast irons and exotic metals. The heat dissipating properties reduce heat and chip formation, provide rapid cooling of the tool and the workpiece, extending tool life when compared to conventional soluble oils and semi-synthetics.

## Composition

OPTICOOL 972(E) offers maximum lubrication and the most effective extreme pressure and anti-weld additives. These additives along with the base lubricant provide both hydrodynamic (barrier film) and boundary lubrication which effectively extend tool life and result in superior surface finish. The bio-resistant additive package reduces the odors associated with emulsion coolants.

OPTICOOL 972(E) does not contain mineral oil, chlorine, sulfur, nitrites or mercurials.

OPTICOOL 972(E) contains EP and lubricity additives for those extreme jobs that require the additional pressure resistance.

## Typical Physical Properties

	<b>OPTICOOL 972(E)</b>
Form	Liquid Concentrate
Appearance	5% Water
Solubility in Water	Complete
Flash Point	None
Freeze Thaw Stability	Pass
pH Concentrate	9.1
pH 5% Concentration	9.0
Base Fluid	Synthetic
Specific Gravity	1.095
Refractometer factor	2.0 % per °Brix

## Properties

- Excellent Lubricity
- Superior Heat Dissipation
- Synthetic Lubricant Base
- Extreme Pressure Capability
- Excellent Hard Water Stability
- Does Not Mist
- Oil Intolerant – Rejects High % of Tramp Oil
- Superior Settling Prevents the Recirculating of Fines
- Excellent Filterability
- Internal Resistance to Microbial Attack
- Provides Excellent Corrosion Protection

## Suggested uses

- Milling
- Turning
- Grinding
- Stamping
- Drawing
- Broaching
- Drilling
- Reaming
- Sawing
- Tapping
- Fine Threading

## Directions

OPTICOOL 972(E) should be added to water at the recommended starting point. It is important that the coolant be added to water. Do not add water to the coolant.

Before adding OPTICOOL 972(E) to any reservoir remove old coolant, fines and residues from the system. Drain the old coolant from the sump; charge the system with Chesterton's 218(E) HDP at 5% concentration. Circulate the cleaner for up to 2 hours through all lines, tool holders and work pieces.

Dilutions in excess of 25:1 are not recommended since the corrosion protection provided by OPTICOOL 972(E) and its internal resistance to bacterial attack will be reduced.

### Recommended Starting Dilutions

	Stainless Steel High Alloy Steel	Carbon Steel	Cast Iron
Broaching	10%	7%	5%
Drilling	5%	5%	5%
Milling	5%	5%	5%
Reaming	10%	7%	5%
Tapping	10%	7%	5%
Turning	5%	5%	5%
Stamping	10%	10%	10%
Drawing	10%	10%	10%
Grinding	5%	5%	5%
Machining	5%	5%	5%

### Coolant Maintenance

Concentration of the fluid changes constantly during use due to evaporation and “drag out” on chips. Volume loss to evaporation is 100% water. For maximum performance, the concentration should be monitored and maintained on a regular basis. The Brix factor gives the approximate relationship between coolant concentration and refractometer reading.

Often it is helpful to monitor the sump's pH. If the pH is or drops, below 8.5 the sump is imbalanced and requires conditioning. Adding fresh coolant or a sump additive restores the pH level, maximizing coolant performance.

### Clean Up

Residual Coolant on parts, equipment and machine tools is easily removed by rinsing with water.

### Safety

Before using this product, review the Safety Data Sheet (SDS) or the appropriate safety sheet in your area.

### Waste Disposal

Primary treatment by an oil separation or settling tank will remove solids and tramp oil. At this point, it is possible that adjustments to the concentration could be made and the coolant may be reclaimed for continued use.

If reclamation is not possible, check with local authorities on proper procedures for disposal.

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