

METAL REMOVAL FLUIDS

QUAKERAL® 370 HEAVY-DUTY - CHLORINE-FREE EMULSIFIABLE APPLICATION SHEET

BENEFITS

- » **Excellent detergency**, fines handling properties and **does not produce sticky residues for better working conditions**
- » **Low foaming micro-emulsion resists air entrapment and decreases risk of pump cavitation** which prevents premature pump wear, improves quality and increases productivity
- » **Ester lubricity additives produce very long tool life and improved surface quality leading to operational savings**
- » **Biostatic technology provides sump life of 12 months.** Minimizes machine down time, eliminates unpleasant odors and reduces disposal costs
- » **Free of chlorine, sulfur, phenol, nitrite, and diethanolamine (DEA).** Neutral odor provides an operator friendly environment and will not stain most aluminum alloys
- » **Tight micro-emulsion provides excellent tramp oil rejection and reduced drag-out**

APPLICATIONS

QUAKERAL® 370 is a high-performance emulsifiable metalworking fluid used for heavy-duty Machining and Grinding operations. The fluid is based on proprietary advanced ester technology. It can be used on all general metalworking applications but is particularly suitable for difficult machining of titanium, aluminum, steel and alloy steels, as well as operations such as:

- » Broaching
- » Creep Feed Grinding
- » Gun Drilling
- » Hobbing
- » Mapal Reaming
- » Tapping

QUAKERAL® 370 meets South Coast Air Quality Management District (SCAQMD) 2012 requirements under Rule 1144 (ASTM E1868-10 TGA).

PROPERTIES - CONCENTRATE

PROPERTY	TYPICAL VALUE
Appearance	Clear to slightly hazy yellow to amber
Pounds per gallon at 60°F	8.22 lbs/gal
Flash Point via COC	Boils at >200°F / >93°C
pH Neat	9.4
Odor	Slight Amine

PROPERTIES - DILUTION

PROPERTY	TYPICAL VALUE
Appearance at 5.0%	Off-White Emulsion
pH (typical working solution)	9.3
VOC at 10%	11 g/L / 0.09 lbs/gal

QUAKERAL® 370

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APPLICATION SHEET

STORAGE AND HANDLING

QUAKERAL® 370 is available in drums (54 gal/444 lbs) or totes (320 gal/2,630 lbs). This product has a shelf life of 6 months. Like most chemicals, it should be stored out of direct sunlight in temperatures between 40°F (4°C) and 110°F (43°C).

CLEANING AND PROTECTING

To clean and protect after the metal removal operation, use QUAKERCLEAN® (cleaners) and FERROCOTE® (corrosion preventives) to enhance process compatibility.

CONCENTRATION CONTROL

Good control of coolant concentration is important to maintain optimum metalworking performance, as well as to insure the chemical and biological stability of your fluids. Proper concentration also helps keep your total operating cost - including tooling and chemicals - at a minimum.

The best method for checking the concentration of QUAKERAL 370 is to titrate using a pH meter and a dilute acid as follows:

1. Collect a sample of the QUAKERAL® 370 working solution from your machine or coolant system while the fluid is being circulated. Avoid collecting tramp oils or taking samples from a stagnant area.
2. Carefully measure 25ml of this fluid into a clean 250ml beaker, and add 75ml of distilled or deionized water.
3. Slowly and carefully titrate this mixture, while continuously stirring, to a pH of 4.3 using 0.5N Hydrochloric acid (HCl).
4. Record the ml of acid used and divide by a factor of 0.66. Record this number as the concentration of your system.

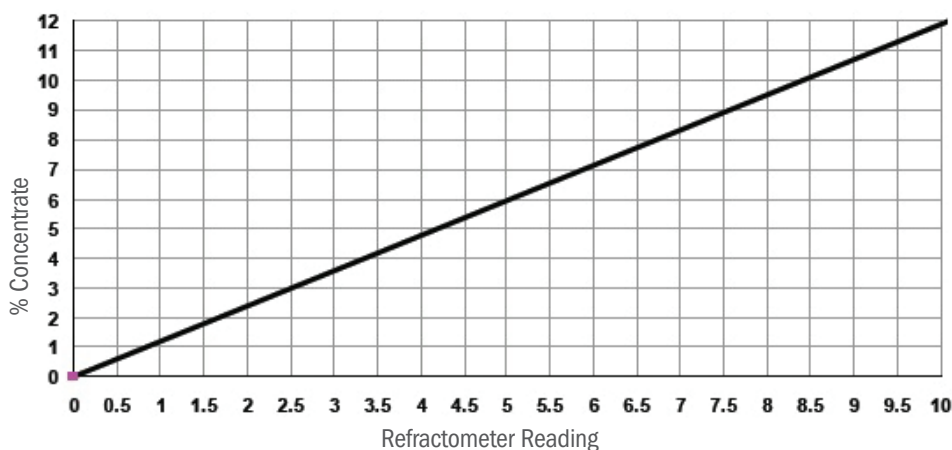
If you do not have titration equipment or are unfamiliar with the methods, your Quaker representative can provide detailed instructions and a list of suggested equipment.

In situations where titration is not feasible, you can use a refractometer to get a good approximation of coolant concentration. If you are not familiar with refractometers, or do not have one, your Quaker representative can suggest the proper equipment and show you how to use it.

Once you have obtained the refractometer reading for your system you can use the chart below or use the following equation to determine approximate concentration:

Refractometer reading x 1.19 = Approximate concentration of QUAKERAL® 370

REFRACTOMETER CHART



quakerchem.com | 1.800.523.7010