

METAL REMOVAL FLUIDS

QUAKERCOOL® 700 XF HIGH PERFORMANCE - MINERAL OIL FREE MICROEMULSION APPLICATION SHEET

BENEFITS

- » **Mineral oil free advanced lubrication technology based on a microemulsion of proprietary synthetic esters**
- » **Working solutions range from transparent to translucent** depending on makeup water quality
- » **Excellent short-term corrosion protection** is provided on ferrous surfaces including machine ways and spindles. **Resists washing out machine lubricants**
- » **Provides superior tool life even at low concentrations**
- » **Will not stain automotive or aerospace aluminum alloys** at recommended concentrations
- » **Rinses clean, leaving an excellent non-tacky residue**
- » **Lower vapor pressure technology results in an operator friendly environment**

APPLICATIONS

The QUAKERCOOL® 700 XF high-performance, mineral oil free microemulsion metalworking fluid is a proven performer in exotic Machining and Grinding operations on titanium alloys, stainless steels, and other high nickel-chrome alloys. It is also used for critical surface finish machining of cast and wrought aluminium. QUAKERCOOL® 700 XF effectively resists microbiological growth and contains no chlorinated compounds, formaldehyde release agents, Boron, MEA, or secondary amines.

PROPERTIES - CONCENTRATE

PROPERTY	TYPICAL VALUE
Appearance	Clear amber fluid
Pounds per gallon at 60°F	8.48 lbs/gal
Flash Point via COC	Boils at 212°F (100°C)
Odor	Amine-like
pH	10.4

PROPERTIES - DILUTION

PROPERTY	TYPICAL VALUE
Appearance at 5%	Amber
pH @ 5%	9.45



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APPLICATION SHEET

CLEANING AND PROTECTING

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

FLUID MAINTENANCE

This product is diluted into water prior to use. Always add product to water to avoid creating an invert emulsion. For most machining and grinding operations, the dilution range is 6% to 10% by volume. Initial water hardness range of 50-300 ppm (as calcium carbonate) is typically suitable. Please consult your Quaker Process Engineer for more information.

STORAGE AND HANDLING

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 100°F (40°C).

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 **QUAKERCOOL® 700 XF** is to titrate using a pH meter and a dilute acid as follows:

1. Collect a sample of the **QUAKERCOOL® 700 XF** 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 3.4 using 0.5N Hydrochloric acid (HCl).
4. Record the ml of acid used and divide by a factor of 0.91. Record this number as the concentration of your system.

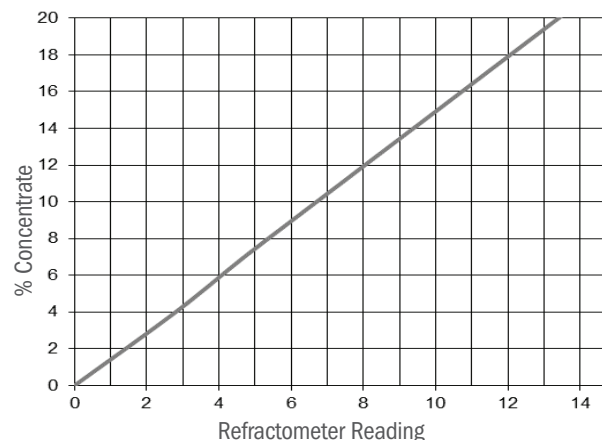
If you do not have titration equipment or are unfamiliar with the methods, your Quaker representative can provide detailed instructions and a list of suggested equipment.

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 1.47 = Approximate concentration of **QUAKERCOOL® 700 XF**

REFRACTOMETER CHART



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