

PERFORMANCE SHEET

TUBE & PIPE THREADING

QUAKERCOOL® 750 TP

BACKGROUND

For many manufacturers, annual thread tooling costs can be ten times or more than the annual costs of the threading coolant. QUAKERCOOL® 750 TP provides superior tool life, even at low concentrations, and has been shown to achieve up to 25- 35% improvement in tool life which more than offsets the entire annual purchase of the coolant.

The **QUAKERCOOL® 750 TP**, a **high-performance mineral oil-free microemulsion**, is a **proven performer in demanding threading operations**. Effectively **resisting microbiological growth**, it contains **no chlorinated compounds, formaldehyde release agents, Boron, MEA, or secondary amines**. In the tube and pipe manufacturing operations, QUAKERCOOL® 750 TP has demonstrated significant performance in the threading processes with benefits including:

- » Increased tool insert life meaning decreased cost and downtime
- » Compatibility with downstream protective coating systems (UV, water based and solvent based) yielding improved cosmetics and corrosion protection
- » Excellent operator acceptance with its low odor compared to many other coolants as a result of its lower volatility amine package
- » Improved worker environment with no noxious smell from smoking or misting due to its exceptional cooling properties
- » Process improvements such as excellent fines settling and very low to no foam

CHALLENGE

This advanced technology evolved from initial research conducted in our global R&D labs. The formulation principles associated with mineral oil-free technology for machining of advanced materials in the automotive industry provided the foundation for use in pipe threading operations. Initially, depending on the process or operation, multiple coolants were utilized, but the new data resulted in:

- » higher lubricity
- » better quality fluid

This opened the opportunity to design a modular coolant platform, the QUAKERCOOL® 700 series.

We developed the concept of one product family for all the coolants used in the manufacturing of tube and pipe, QUAKERCOOL® 750 TP is specifically for threading, and other formulation variations for hydrotesting, roll forming, sawing and cutting.

BENEFITS

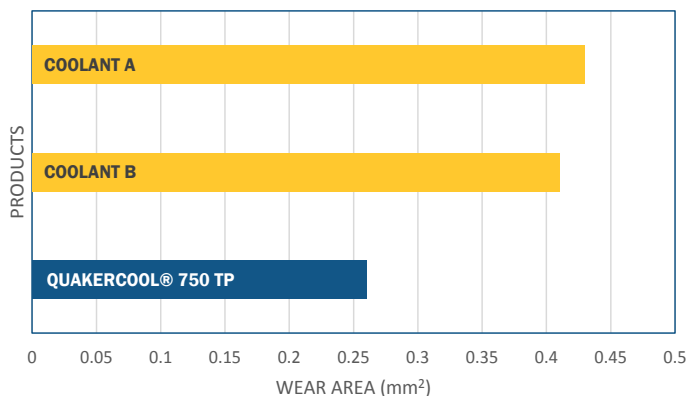
- » **Advanced lubrication technology based on a microemulsion of proprietary synthetic esters**
- » **Working solutions range from transparent to translucent depending on the composition of water quality**
- » **Excellent short-term corrosion protection is provided on ferrous and non-ferrous surfaces**
- » **Provides superior tool life even at low concentrations**
- » **Rinses clean, leaving an excellent nontacky residue**

TEST PARAMETERS

Key performance parameters to differentiate a coolant's performance are its lubrication properties and its coating compatibility.

COMPARISON OF TOOL LIFE

Superior lubrication properties can be demonstrated through a threading fluid machining test involving AISI 4140 steel. This test compares the performance of products in its range. After 144 holes were drilled, the wear on the flank face of the drill was measured.



TEST PERFORMANCE

- » In the threading fluid machining test, the lubrication performance of QUAKERCOOL® 750 TP showed **a 40% reduction in tool flank wear**
- » This translates into longer tool use and lowered replacement costs

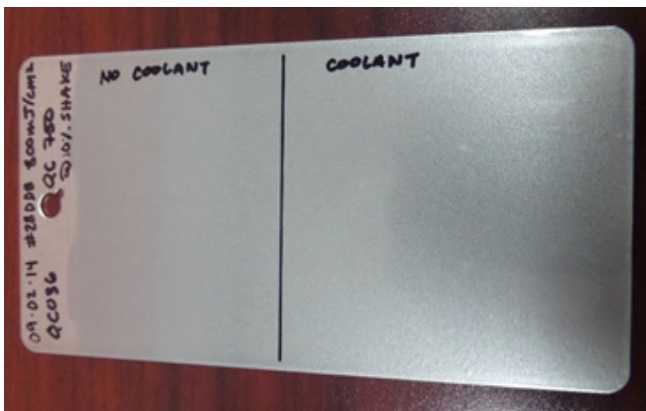
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QUAKERCOOL® 750 TP

COMPARISON OF COATING COMPATIBILITY

- » Coolant compatibility with the downstream coating whether it is a UV, water based or solvent based coating, can be a real problem for Tube and Pipe manufacturers
- » In addition to poor aesthetics, incompatibility between the coolant and coating can also adversely impact adhesion and corrosion protection



COATING COMPARISON: NO COOLANT VS. QUAKERCOOL® 750 TP COOLANT



COATING COMPARISON: NO COOLANT VS. COMPETITIVE COOLANT

TEST PERFORMANCE

- » Coolant incompatibility with the coating can be seen with the “orange peel” appearance on the surface.
- » QUAKERCOOL® 750 TP was developed collaboratively with input from technical experts in our coatings and metalworking laboratories to eliminate this as a concern