METALWORKING FLUIDS

Q8 Brunel XF 753

Q8 Brunel XF 753 is a semi-synthetic metalworking fluid in which mineral oil is replaced by premium synthetic base oils derived from natural gas.

MARKET DEMAND

Growing attention to sustainability and workplace safety is driving demand for emulsifiable fluids that meet increasingly stringent requirements. The replacement of formaldehyde-releasing agents with alternative biocides has improved toxicological profiles, but can increase allergy risks. Moreover, mineral oils contain PAHs (polycyclic aromatic hydrocarbons), which are well-known carcinogens. Regulations on antimicrobial additives have made microbiological control more challenging, raising the risk of contamination and unpleasant odors in emulsions.

APPLICATIONS

This product in the 700 series is specifically designed for machining aluminum alloys used in the aerospace and automotive industries. It is engineered to perform in a wide range of medium-to-high severity operations on both ferrous and non-ferrous materials, including titanium alloys. It does not stain aluminum alloys and can also be used on copper alloys.

COMPLIANCE

Aerospace Approvals

- PCS 4001 Approval
- Dassault Approval
- Complies with Airbus AIMS 12.10.00

Electronics

- ASML OMNEO Grade II Approval

Nuclear Industry

- PMUC Approval

Q8OILS SOLUTION

Q8 Brunel XF 753 *has been developed to offer the highest possible safety and sustainability profile: it uses natural gas-derived hydrocarbons instead of mineral oil and is free from boron and biocides. It ensures excellent chemical and biological stability, high cutting performance, full compatibility with aluminum alloys, and a superior safety profile compared to traditional semi-synthetic products.*

KEY FEATURES

Natural gas-derived hydrocarbons represent a more advanced alternative to mineral oils and provide significant benefits for emulsifiable fluids:

- *Enhanced cleaning properties for better machine and surface cleanliness;*
- *Lower oxidation tendency;*
- *Greater purity, leading to improved biostability, reduced maintenance costs, and lower waste generation*

Q8 Brunel XF 753 *was awarded at METEF in the "Green Materials and Processes" category for its high technological content, innovation, and focus on sustainability in aluminum machining. METEF is the leading international exhibition for the aluminum, metals, and industrial technologies supply chain.*

RESULTS

Using the Tapping Torque Test, a comparative efficiency analysis was conducted on steel and aluminum alloys:

Aluminum 6082

+19,8%

vs traditional EP fluid with chlorin

+8%

vs traditional EP fluid without chlorin

Aluminum 7075

+30,8%

vs traditional EP fluid with chlorin

+9,1%

vs traditional EP fluid without chlorin

OUTSTANDING PERFORMANCE & INNOVATIVE SAFETY PROFILE

Its boron- and biocide-free formulation, developed with a focus on safety and environmental respect, ensures excellent resistance to microbiological contamination.
The high biostability extends the life of the emulsion, reducing the need for biocide addition and minimizing waste generation.
The result is more efficient production process management and significant operational cost savings.

Challenge Tests were used to evaluate the biostability of metalworking fluids, where high concentrations of bacteria and fungi were inoculated weekly into the emulsion.

At the end of each week, the level of bacterial and fungal proliferation in the sample is checked.

The test is stopped and considered failed when, for two consecutive weeks, contamination reaches 1×10^6.

Q8 Brunel XF 753 achieved extraordinary performance: the test was interrupted after 22 weeks, with no contamination developed.