



Ensuring Bacterial Control

Metal processing lubricants.

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Changes to our industry

Back in 2017, the lubricant industry faced the challenge of substituting formaldehyde releasing biocides. Formaldehyde had long been classed as a category 1B carcinogen, but as a result of the changes, products containing more than 0.1% or 1,000 PPM (parts per million) of these formalin-release type biocides (MBM and MBO) now carry the category 1B Hazard Identification. Despite work from the industry, aiming to allow for the classification according to the amount of free formaldehyde present, formalin-releasing species were re-classified according to their total potential to release formaldehyde and not through actual measurement in use.

Under the updated CLP regulations, if certain FAD biocides are present at a concentration of 1,000 PPM or above, emulsions in use will carry the category 1B Hazard Classification in addition to the risks already associated with used metalworking fluids. This threshold will be exceeded during maintenance additions of MBO and MBM tank-side biocides.

This makes it all the more critical that metalworking fluids are maintained well

Clean and closely monitored metalworking fluids require fewer interventions and post treatments. When swarf is removed regularly, this helps to keep the fluid clean by removing the potential seeding grounds for bacterial colonies.

A good record of pH and concentration can help to detect changes in a fluid, and concentration adjustments can be made, which may resolve an issue quickly. Regular dipslide testing and recording of these results then demonstrates that bacteria are kept under control.

Other lubricant suppliers may have chosen to control the bacteria in metalworking fluids in a different way.



Demonstrating bacterial control is simple, in a FUCHS metalworking fluid partnership.

Bioconcept fluids are formulated by certain suppliers to contain intended bacteria at extremely high levels. The supplier intends the presence and proliferation of the intended bacteria will limit the growth of other bacteria which may be unintentionally introduced to the emulsion. While bioconcept fluids are not suited to conventional microbiological testing, for example dipslides, they are not exempt from microbiological monitoring.

The duty holder must ensure that the emulsion does not become contaminated with unintended bacteria, and the levels of these bacteria must be proven to be below the Health and safety executive (HSE)'s prescribed limit of 10^4 CFU/ml. When bacteria are present at or above this limit, actions must be taken to reduce this contamination. The challenge which users of bioconcept fluids face, is differentiation between expected bacteria and the bacteria which are unintentionally introduced as a result of day-to-day use.

Conventional dipslide testing is the most accessible, established and economical evaluation method for traditional emulsion chemistry. For bacterial strain isolation and evaluation of bioconcept fluid performance, laboratory testing is recommended, which can prove costly.

Working safely with MWF

We believe that the best way for a metalworking fluid user, to ensure that their employees are not exposed to unacceptable levels of harmful bacteria, is to maintain a robust, bacteria-free metalworking fluid, tested by dipslide, in accordance with the HSE's prescribed frequency. Recordkeeping of these results is, in our opinion, the most effective method to demonstrate bacterial control. FUCHS are proud to cooperate with our customers, and we can provide a full training and testing package, including dipslide testing on site, or remotely with submitted samples. We can perform checks to verify your own in-house methods, or we can provide full training, so that the end user company can carry out the required monitoring checks completely independently.

Ensuring that a fluid contains acceptable levels of ALL bacteria, is the simplest way to demonstrate that it is not contaminated with unacceptable levels of harmful bacteria.

FUCHS is proud to have played a key part in the establishment of best practise guidance, endorsed by the HSE, in collaboration with our lubricant manufacturer partners, in the United Kingdom Lubricants Association (UKLA).

FUCHS is offering a proven alternative in terms of sump life with far greater operator safety. By sourcing additives which are REACH compliant, FUCHS is able to offer the most sustainable solutions to all users.

FUCHS Service Fluid Management Packages	STANDARD	PLUS	PREMIUM
Soluble metalworking fluids condition monitoring checks (concentration, pH)	✓	✓	✓
Tramp oil monitoring	✓	✓	✓
Access and visibility to FluidsConnect reporting software	✓	✓	✓
Soluble metalworking fluid temperature testing	✓	✓	✓
Tank side additions completed as required		✓	✓
Machines returned to optimal operating condition		✓	✓
Microbiological Dip-slide Testing		✓	✓
5S for all areas managed by FUCHS (Point of application labelling and reporting)		✓	✓
Metalworking fluid fines and conductivity testing			✓
Stock control and management			✓

Our latest Global platform incorporates additives that are intrinsically robust and do NOT rely on FAD technology in the concentrate or from secondary sources e.g. through support from tank-side additions.

Contact us

Please contact us to discuss your specific application and product requirements, our team are available to advise and recommend in product selection.

Technical Helpdesk,
Monday to Friday 09:30 to 16:30.
Telephone: +44 (0) 1782 203 878

Urgent enquiries outside of normal working hours.
Telephone: +44 (0) 1782 203 700
Email: uktechnicalenquiries@FUCHS-oil.com

Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.

Contact:



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