

FUCHS Industrial Lubricants

ECOCOOL

Advanced Coolantology



ECOCOOL ULTRALIFE Water Soluble Coolant Technology

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



YOUR PERFECT PRODUCT PARTNER



FUCHS is the world's largest independent lubricant manufacturer. The Group comprises 55 operating companies with 34 production plants worldwide.

We have more than 100 years' experience of manufacturing and supplying lubricants within the UK. We believe that the perfect lubricant partner should not only supply high performance lubricants, but also provide service and support to customers. Our experienced team work closely with customers, from choosing the right lubricant to fluid condition monitoring, ensuring they receive the most from their lubricants.

We research, develop and manufacture bespoke lubricants; technology that is approved for use by leading manufacturers and available globally via the FUCHS organisation. Our innovative lubricants can help reduce maintenance costs, increase tool life and minimise downtime.

In addition to products developed for industry in the UK, we have access to more than 2,500 industrial FUCHS products from within the Group. Customers can make use of FUCHS's technical expertise and product availability on a global scale, providing access to international fluid technology.

QUALITY IS OUR WAY OF LIFE



UK machining companies operate in a highly competitive market, characterised by increasing pressure to reduce costs, improve productivity and maintain high levels of quality and service.

To add to these concerns, the Health and Safety Executive (HSE) is now monitoring manufacturers to ensure they are fulfilling their duty of care to employees. This follows a serious outbreak of respiratory illness caused by the inhalation of, and reaction to, bacteria in the mist generated by used water soluble metalworking fluids.

For many years, FUCHS has been a trusted partner in supplying high-quality fluids and providing first class after-sales service to machining companies of all sizes. We maintain our position at the forefront of coolant development by working closely with leading manufacturers, as well as having our own extensive research and development facilities that test for compatibility and machining performance.

Dedicated to Research and Development

The **ECOCOOL ULTRALIFE** range is a testament to our knowledge and experience and meets all of the demands faced by today's metalworking industry. It has been specifically designed to offer superb machining performance under increased feed and speed rates. It also provides increased resistance to bacterial growth and exceptionally clean machining performance with low foaming characteristics.

As one of the world's leading manufacturers of coolants, we are

committed to developing and manufacturing innovative, high quality products that are safer to use, more ecologically acceptable and superior in their technical performance.

We are also members of the UKLA Metalworking Fluid Product Stewardship Committee, a group of companies that put health, safety and environmental issues at the forefront of the development and supply of their products.



ADVANCED COOLANTOLOGY



The FUCHS **ECOCOO ULTRALIFE** range of premium water soluble metalworking fluids is the result of hard work by our project team of chemists and application engineers. Their aim was to re-examine the key performance criteria for water soluble cutting fluids and develop a market-focused "Best in Class" range of products, taking into account the current and future implications of HSE directives, biocide regulations and waste disposal issues.

The result is "Advanced Coolantology", a range of coolants designed to offer optimum machining performance and surface finish, exceptional long life performance and the ultimate in machine cleanliness for an improved working environment.

The **ECOCOO ULTRALIFE** range contains six variants designed to provide a suitable fluid, regardless of machining application, workpiece material or water type.

The products give remarkably fine cutting performance and enhanced surface finish, especially when used with modern multi-tool CNC machines. Easily emulsified, they have been designed to provide excellent machine cleanliness during operation, a low propensity to foam and an improved working environment.

Each product offers the optimum performance for the operation and material type. The range includes semi-synthetic and fully synthetic versions and has the capability to adapt to modern manufacturing techniques, including coated tooling and more exotic metals.

Advanced Coolant Technology for the Future

Choosing the most appropriate fluid is not straightforward and simply opting for the cheapest product is the road to false economy. Accuracy, finish, cycle time, up time, productivity and overall component cost will be affected by the fluid in use, so please seek the advice of an expert.

FUCHS offers a free service to review a manufacturer's cutting fluid usage and advise on how costs can be reduced, by extending the life of the coolant, increasing tool life or reducing consumption.

With the development of the **ECOCOO ULTRALIFE** range, FUCHS has once again been at the forefront of metalworking fluid technology. With extensive knowledge and experience, investment in high-tech laboratory equipment and a worldwide information sharing scheme, we are able to maintain our position as a leading supplier of coolants.



COST SAVING OPPORTUNITIES

The Fluid That Works Harder - So You Don't Have To!

Compared to other types of lubricants, metalworking fluids need extra care and attention to maintain their effectiveness. Contamination can have a detrimental effect on the coolant. Bacteria can degrade the technical performance properties of water soluble oils, causing the coolant to separate, lose its lubricant characteristics and reduce its service life.

The FUCHS **ECOCOOL ULTRALIFE** range has been specifically designed to resist bacterial growth, meaning that the fluid requires less maintenance and monitoring. It also increases sump life, reduces fluid consumption, reduces waste and disposal, as well as lowers the risk of operator health issues. All of these benefits provide significant commercial advantages to users.

The **ECOCOOL ULTRALIFE** range also offers industry-leading tramp oil rejection rates, which helps to maintain the condition of the fluid for even longer. Tramp oil, which is residue oil that has leaked from machine tool lubrication (slideway, hydraulics, etc.) into the coolant system, is the single largest contamination problem faced by manufacturers.

Tramp oil has a lower specific gravity than the coolant, meaning it floats on top and seals off the system from air. This provides the perfect conditions to enable bacteria to multiply rapidly and causes the coolant to degrade through oxygen deprivation.

ECOCOOL ULTRALIFE products are compatible with process and machining fluids, such as machine tool lubricants, and enable tramp oil to be easily removed.

Proven Performance Benefits

The **ECOCOOL ULTRALIFE** products provide a more stable emulsion when mixed with water, helping to reduce premature tool wear and extend tool life. The range has been designed to lubricate and cool effectively, even with coated tooling types. Ultimately it brings better performance in terms of component rejection rates.

Most importantly, the **ECOCOOL ULTRALIFE** range offers "Best in Class" coolant technology, in terms of machining performance. Benchmarked against competitor products, using a specially adapted "Torque Tapping Test", the products showed "Best in Class" performance, requiring less torque to machine various types of metal blocks.

The FUCHS **ECOCOOL ULTRALIFE** range of coolants is the key to profitable machining! Ask for case study documentation.



REGULATION & LEGISLATION

Legal Implications for Manufacturers

Working in close proximity to metalworking fluids can be dangerous. Manufacturers face increasing demands from EU legislation, forcing them to consider the health and safety issues related to their operations. It is important for companies to be aware of their legal duty of care regarding the protection of their work force.



The associated health risks were highlighted by the Health and Safety Executive's (HSE) investigation into an outbreak of respiratory disease at Powertrain Ltd, Birmingham. There were more than 100 confirmed cases of occupational asthma and extrinsic allergic alveolitis, both of which cause long-term breathing difficulties.

The HSE's findings linked these diseases to bacteria growth in water soluble metalworking fluids, inhaled via the mist generated during machining. The investigation also indicated that the outbreak appeared to develop and peak while exposure to mist was at, near or below HSE good practice guidance levels. As a result of this, the HSE withdrew their guidance limits, recognising the potential risk from exposure to even low levels of mist.

Occupational asthma is a serious and growing problem. The HSE estimates that up to 3,000 new cases are diagnosed each year, costing the industry approximately £1.1 billion over 10 years.

The responsibility for worker protection lies with the employer. Those failing to comply with HSE guidelines risk fines and even closure. HSE guidelines state that good coolant control must include:

- Risk assessments that deal with the potential risk of respiratory disease
- Prevention and control of mist exposure
- Direct means of monitoring and controlling bacterial contamination in metalworking fluids

Protecting Your Workforce and Profitability

The **ECOCOOL ULTRALIFE** range has been developed in direct response to these pressures and has been thoroughly researched and tested by FUCHS chemists.

The **ECOCOOL ULTRALIFE** range uses a unique combination of safe, but powerful, biocides to dramatically reduce the rate of bacterial growth in machine sumps. Test results for the **ECOCOOL ULTRALIFE** range show the products to be biologically harder than traditional water soluble cutting fluids, while still maintaining high cutting performance. This reduces the need for tank side additions, maintenance and fluid monitoring, and significantly lowers the risk of employees developing occupational lung disease.

The range makes it easier for companies to comply with other regulations, such as REACH (Registration, Evaluation and Authorisation of Chemicals) and COSHH (Control of Substances Hazardous to Health) by reducing the number of hazardous products and chemicals, such as biocides, on site.

Manufacturers have a corporate responsibility to protect their workforce. They can do this by working with a credible metalworking fluid supplier, such as FUCHS, who understands and is prepared for the latest regulatory demands.

HIGH PERFORMANCE COOLANTS

All of the products in the **ECOCOOL ULTRALIFE** range provide prolonged fluid life, good machine cleanliness and maximised sump life, optimised surface finish and tooling performance. They also have excellent EP, corrosion protection and low foaming properties.



Low Oil Content		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE L	Multi-functional, semi-synthetic fluid for general machining and grinding operations. Specifically designed for use on cast iron and low tensile steel, as well as other ferrous and non-ferrous materials.	9.2 - 9.4	3 - 8%
Medium Oil Content		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE M	Semi-synthetic fluid, with lubricity additives, for use in general machining and some grinding operations. Specifically designed for use on a wide variety of ferrous and non-ferrous materials, including medium to high tensile steels.	9.0 - 9.2%	3 - 6%
Aluminium Applications		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE A	Semi-synthetic fluid, with a high oil content and EP additives, for use in general machining and heavy duty operations. Specifically designed for use on aluminium alloys, stainless steels and automotive aluminium castings.	8.9 - 9.2	5 - 8%
Multi-Metal Capability		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE MM	Semi-synthetic cutting fluid designed for multi-metal capability (including brasses). Specially engineered to provide exceptional cleanliness, particularly when machining materials such as SG Iron. Provides the optimum balance between lubricity and cleanliness.	8.9 - 9.2	5 - 8%
Heavy Duty Applications		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE EP	Semi-synthetic fluid, with a high oil content and EP additives, for use in general machining and heavy duty operations. Specifically designed for arduous machining applications on steel, stainless steel, nimonics and titanium materials.	8.9 - 9.1	5 - 12%
Renewable Resource Technology		pH @ 5%	Recommended Concentration
ECOCOOL ULTRALIFE RR	Fully synthetic, ester based fluid for use in general machining operations. Can also be used in some grinding, drilling and tapping applications. Specifically designed for machining medium to high tensile steels, including alloyed steels, stainless steel and aluminium, as well as non-ferrous metals, such as copper and brass.	8.9 - 9.2	5 - 7%

Our trained metalworking fluid specialists are able to assist with choosing the right product for your application through consultation and site visits.

Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then can the best lubricant system be selected. We will be glad to advise on the right lubrication for each application and also the range of support services we can offer.



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