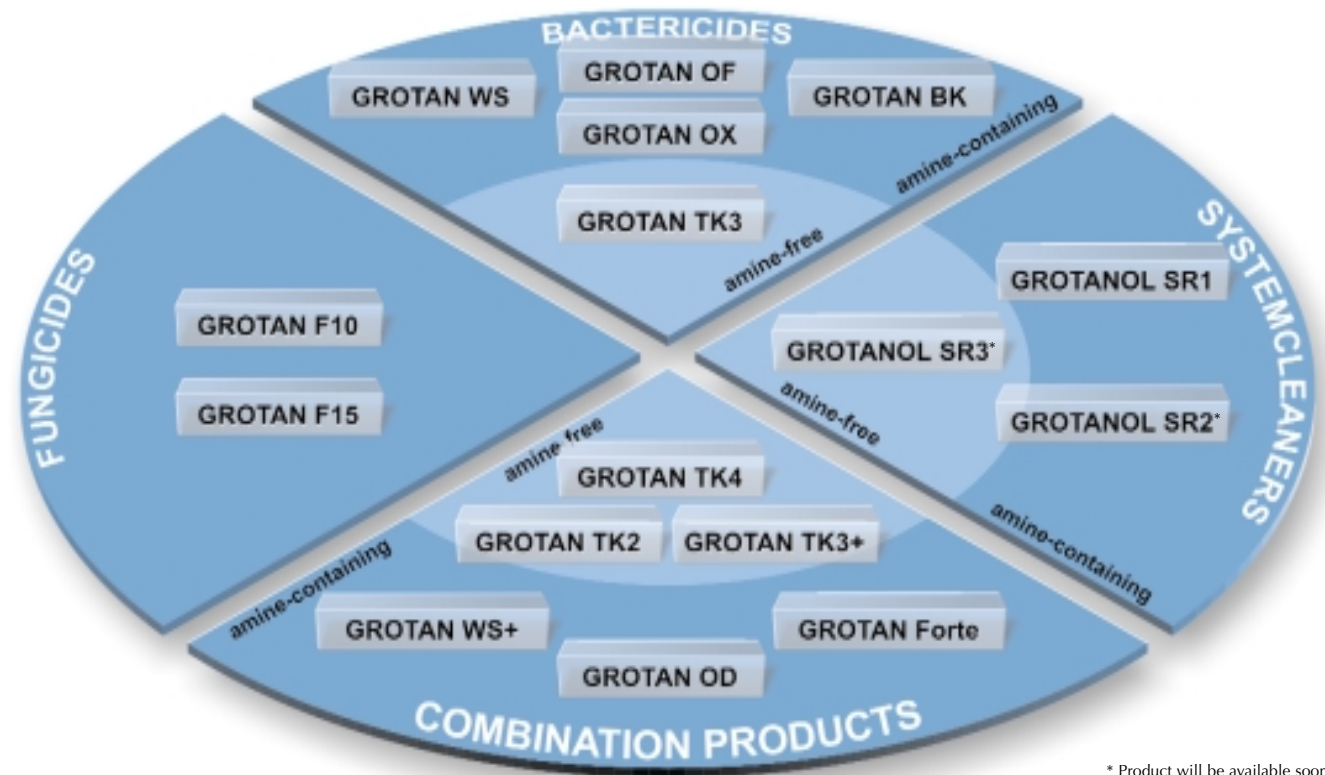


PRESERVATIVES FOR THE METALWORKING INDUSTRY



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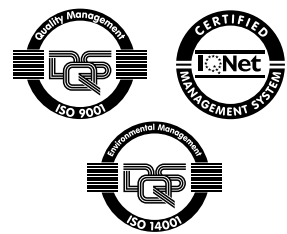
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Our recommendations regarding our products are based on in-depth scientific testing in our Research Department, they are given in good faith, but no liability can be derived from them. In other respects our Conditions of Sale and Supply apply.

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OPTIMAL PROTECTION FOR YOUR PRODUCTS AND PLANT



Use biocides safely. Always read the label and product information before use.



Preserve your reputation:

Preservation instead of contamination



Water-based coolants are used everywhere in metalworking: drilling, turning, milling, sawing, grinding, etc. However, the water in the coolants offers microorganisms an attractive environment. Contamination and subsequent spread of bacteria, yeasts and fungi can therefore hardly be avoided. As a result of their high growth potential, microbes can multiply within a few hours from 100 to 10,000,000 organisms per ml.



What consequences can that have? The microorganisms can alter the composition of the coolant and the technical properties, e.g. reducing the emulsifiers. They excrete metabolites that alter the pH value and cause unpleasant odours. Uninhibited growth can lead to the formation of biofilms in the system. These can grow to a thickness of several centimetres and result in blockages and impurities.

The symptoms of contamination are diverse and unpleasant: fall in pH, reduction of protection against corrosion, blockage of pipes and filters, odour formation, oil separation, foam formation, and the sudden occurrence of skin irritation.



Mikrocount® combi in use






Count on Mikrocount®

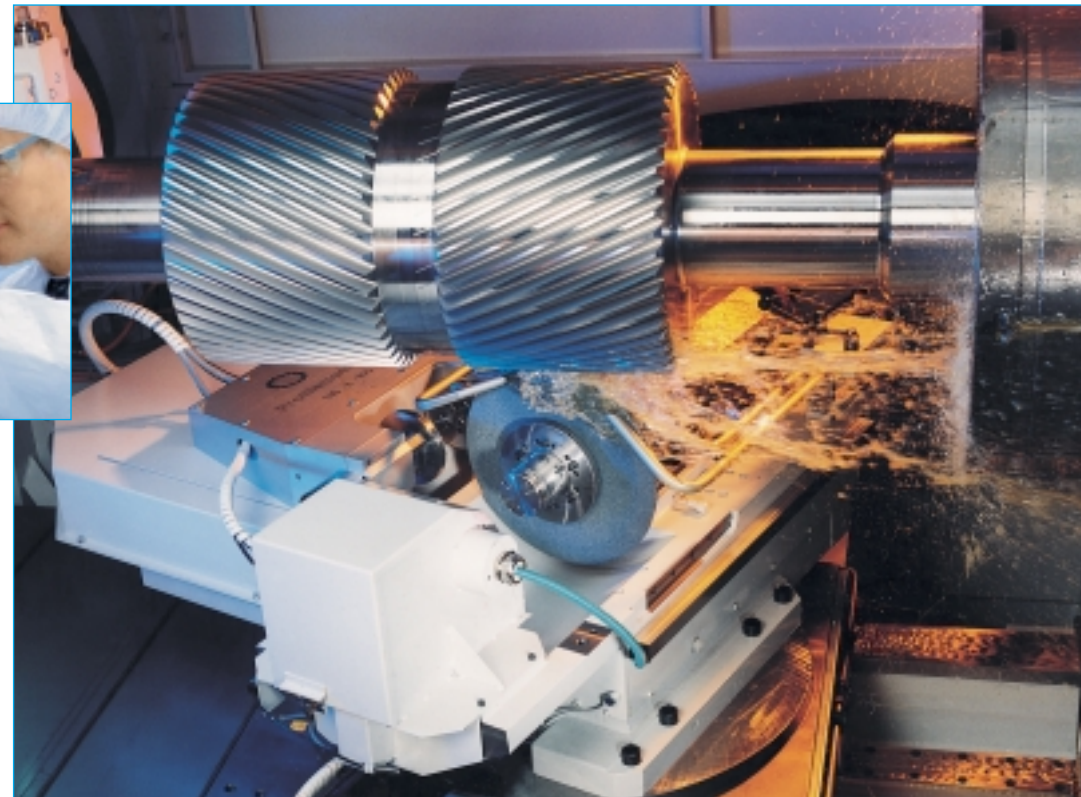
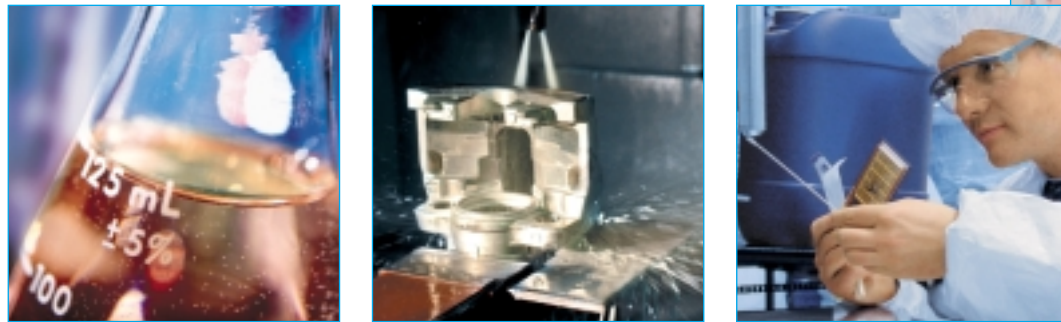
Do you have problems with microorganisms? Are you not sure?

The degree of contamination can be determined rapidly and reliably with our microorganism contamination indicator **Mikrocount® combi**. It gives reliable information about the nature and amount of microorganisms present and serves as an aid when planning further hygiene measures and for continuing hygiene checks.



More than a century of competence in preservation and hygiene...

	Foundation of the company by Rudolf Schülke & Julius Mayr in Hamburg. Presentation of the first ever branded disinfectant in the world – Lysol		Successful combating of the Hamburg cholera epidemic with Lysol		Schülke & Mayr issues its own series of postage stamps for the export business in German East Africa		Market launch of Sagrotan, the world's first household disinfectant.	Introduction of a disinfectant to combat tuberculosis pathogens	First chemical-technical preservative for glues: Grotan	Introduction of an antiviral disinfectant		First patented preservative for paints and varnishes: Parmetol	Introduction of the first preservative for cooling lubricants: Grotan BK	First patented preservative for water-based emulsion paints: Parmetol A 23
1889		1892		1892		1913		1920	1924	1950		1960	1960	1970



Everything runs smoothly

The best protection for your coolants

Coolants are not helpless and at the mercy of microorganisms. Our **GROTAN®** preservatives have been optimised for use in this environment. They act rapidly and effectively, without altering the specific properties of the coolant. The protection against microbiological damaging is lasting, and is resistant to high temperatures and the effect of organic and inorganic substances. Our preservatives have good material compatibility, and meet the legal requirements in the countries of the European Union

(EU). Our principle for the use of preservatives is: 'As little as possible – as much as is necessary'. This is kind to your budget and to the environment. For more than a century the name Schülke & Mayr has stood for innovative, high quality products and competent, customer-orientated service. Our long tradition in microbiology and application technology is not limited to the research and development of effective preservatives. In order to ensure the optimal use of our products, Schülke & Mayr offers its

customers Microbiological Quality Management. This includes qualitative and quantitative determination of the biocide requirement, on-site analyses of industrial and production hygiene, and advice and training for your employees. Together with our customers we develop individual strategies.

Use biocides safely. Always read the label and product information before use.

Regular system cleaning

If preservation is inadequate or the emulsion is too old, the result is dirt deposits and biofilms. These constitute a constant source of contamination in the system. They can cause malfunctions and downtime in the work process. **GROTANOL®** system cleaners disinfect and clean the complete plant, and should be added to the old emulsion 6 – 24 hours before the coolant is changed.

GROTANOL® system cleaners loosen dirt and biofilms and rapidly and reliably kill the microorganisms that are released. As a result, a long working life for newly used emulsions can be achieved.



Heavy fungal infection in a central coolant unit



After system cleaning – the consequences of microbial contamination (corrosion as a result of microorganisms) can clearly be seen

More than a century of competence in preservation and hygiene...

Introduction of Grotamar 71, a biocide for diesel fuels	First Schülke & Mayr preservative for cosmetics: Euxyl K 100	S&M disinfectant against HBV/HIV	Introduction of Octenisept, a mucous membrane and wound antiseptic	Schülke & Mayr celebrates its hundred years of existence	Introduction of Sensiva SC 50, a skincare additive and deodoriser	Schülke & Mayr becomes a subsidiary of Air Liquide AG	Move into the new offices	111 Years	Schülke & Mayr: 111 years young and represented in more than 60 countries	Also for the future the aim is: growth and competence throughout the world ... Schülke & Mayr, your partner for preservation and hygiene in the 21st century
1976	1978	1985	1989	1989	1991	1996	1998	2000	...	

Preservatives for the metalworking industry														System cleaners/ -desinfection
	Grotan® OX	Grotan® OF	Grotan® OD	Grotan® WS	Grotan® WS Plus	Grotan® TK 2	Grotan® TK 3	Grotan® TK 3 Plus	Grotan® BK	Grotan® Forte	Grotan® TK 4	Grotan® F 10	Grotan® F 15	Grotano!® SR 1
Actives														
N-formal	☐	☐	☐	☐	☐	☐ ****	☐ ****	☐ ****	☐	☐	☐ ****			☐
O-formal						☐	☐	☐						
CMI/ MI						☐					☐			
OIT			☐					☐				☐		
IPBC													☐	
Sodium pyrithione					☐					☐		☐		☐
Fields of application / use concentration (%)														
Metalworking fluid concentrates	2 – 4 * / **	2 – 4 * / **	–	2 – 4 **	2 – 4 **	–	2 – 4 * / **	2 – 4 * / **	2 – 4 **	2 – 4 **	–	0.2 – 0.5 ***	1 – 2 *	–
System cleaners	–	10 – 15 * / **	–	–	–	–	10 – 15 * / **	–	–	–	–	–	–	–
Watermiscable metalworking fluids	0.10 – 0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.10 – 0.15	0.015 – 0.030	0.05 – 0.10	1 – 3
Technical emulsions	0.10 – 0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.10 – 0.15	0.015 – 0.030	0.05 – 0.10	1 – 3
Aqueous systems	0.10 – 0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.15	0.10 – 0.15	0.10 – 0.15	0.15	0.15	0.10 – 0.15	0.015 – 0.030	0.05 – 0.10	1 – 3
Concrete admixtures	–	–	–	–	–	–	–	0.20 – 0.30	–	–	–	–	–	–
pH-range for application	8 – 11	8 – 11	8 – 11	8 – 11	8 – 11	3 – 9.5	3 – 12	3 – 11	8 – 11	8 – 11	3 – 9.5	8 – 11	3 – 11	7 – 12
max. manufacturing temperature	80 °C	80 °C	80 °C	80 °C	80 °C	40 °C	60 °C	60 °C	80 °C	80 °C	40 °C	40 °C	40 °C	

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- * 0.10 % in the end dilutions
- ** 0.15 % in the end dilutions
- *** 0.015 – 0.030 % in the end dilutions
- **** amine-free