

Grotan® WS Plus



Schülke & Mayr

TECHNICAL LEAFLET

WS plus PRESERVATIVE FOR TECHNICAL PRODUCTS

- ❑ Bactericidal and fungicidal effect
- ❑ Broad, balanced spectrum of effect (incl. sulphate-reducing bacteria)
- ❑ Good immediate effect
- ❑ Good anti-corrosive properties
- ❑ Contains no nitrate, nitrosing agents or organically bound chlorine (has no effect on the AOX value)

Technical data

		CAS-Nr.
Actives	α , α' , α'' -Trimethyl-1,3,5-triazine-1,3,5-(2H,4H,6H)-triethanol Pyridine-2-thiol-1-oxide, Sodium salt	25254-50-6 3811-73-2
Appearance	Yellow liquid	
Density (20 °C)	1.084 – 1.104 g/ml	
Viscosity (DIN 53 211)	Flow time approx. 90 sec (20 °C)	
Odour	Amine-like	
Refractive index (20 °C)	1.464 – 1.476	
Boiling point	> 100 °C	
Flashpoint (ISO 2719)	> 100 °C	

Use concentration

	Recommended dosage	
Watermiscable metalworking fluids	0.15 %	The optimum use level should be evaluated by means of a repeated challenge test (e.g. BOKO-Test by S&M – Technical and Microbiological dept). Use biocides safely. Always read the label and product information before use.
Technical emulsions	0.15 %	
Metalworking fluid concentrates (0.15% in the end dilutions)	2 – 4 %	

Instructions on application

Grotan® WS Plus is suitable for use in coolant concentrates, technical emulsions or solutions and water-mixed coolants. **Grotan® WS Plus** can be used in the pH ranges from 8 to 11. **Grotan® WS Plus** is temperature-stable, and can be used at high temperatures up to 80 °C. In order to avoid microbial growth and the associated consumption of preservative from the outset, it is recommended that **Grotan® WS Plus** is added to the fresh coolant mix. Booster dosing is carried out at weekly to fortnightly intervals, depending on the coolant discharge. **Grotan® WS Plus** should be added at a point with good turbulence in order to ensure optimum distribution in the system. Before the plant is refilled, system cleaning is recommended (e.g. with **Grotanol®**).

Microbiological efficacy

The efficacy of the product has been tested against the following microorganisms according to DGHM (German Society for Hygiene and Microbiology) – MIC in % of the product.

Bacteria	MIC	Fungi	MIC
Alcaligenes faecalis	0.025	Aspergillus niger	0.025
Brevibacterium ammoniagenes	0.025	Aspergillus oryzae	0.100
Escherichia coli	0.010	Fusarien	0.010
Micrococcus luteus	0.010	Penicillium funiculosum	< 0.006
Proteus vulgaris	0.010	Penicillium expansum	< 0.006
Pseudomonas aeruginosa	0.025		
Pseudomonas putida	0.050		
Pseudomonas stutzeri	0.025		
Legionella pneumophila (prEN 13623)	0.1 (in 24 h)		
Sulphate-reducing bacteria	MIC	Yeasts	MIC
Desulfovibrio desulfuricans	< 0.0005	Candida albicans	0.010
		Candida mogii	0.010

Compatibility

Aqueous dilution (0.15 %)	No significant difference to tap-water.
Material compatibility	On contact with copper or copper-containing alloys, discolourations of the surface wetted with Grotan® WS Plus can occur if the coolants do not contain a copper corrosion inhibitor. From the available test results, it can be concluded that the addition of Grotan® WS Plus has virtually no influence on the medium to be preserved. When selecting sealing materials, piping systems, collection baths, etc., the presence of Grotan® WS Plus as the preservative in the recommended use-concentration can be disregarded.
Plastics	In the laboratory tests, Grotan® WS Plus proved to have good material compatibility with plastics; in the case of most plastics the swelling of the test objects was less than as a result of the effect of tap water.
Sealants	The sealing materials tested were virtually unaffected by Grotan® WS Plus , so all common sealing materials can be used when using Grotan® WS Plus .
Advice for post dosaging	In the concentrate, Grotan® WS Plus causes no corrosion to steel, stainless steels, aluminium or zinc. In the case of copper and brass there is a slight effect, and discolourations occur on the surface of the metals.

Safety & Labelling

R- and S-Phrases	R 22, 36/38, 43, 52 S 24, 37
Labelling	Xn (Harmful)
For further hazard instructions and safety advice please refer to the actual material safety data sheet.	

Environmental information

At a sufficient degree of dilution, all components of **Grotan® WS Plus** are completely biodegradable. Dilutions of **Grotan® WS Plus** do not interfere with the operation of municipal sewage treatment plants. **Grotan® WS Plus** contains no organic chlorine compounds, so that there is no effect on the AOX as a result of **Grotan® WS Plus** in the waste water. **Grotan® WS Plus** contains no organic solvents. The canisters and drums used by Schülke & Mayr are made of polyethylene (HDPE) and are labelled accordingly. The 1000 kg - containers are covered by a return scheme that in Europe ensures collection of the used containers free of charge and appropriate re-use. The labels are made of PE. S&M packaging materials contain no PVC and can be recycled.

For further information please ask for our detailed environmental report.

Listings and approvals of active ingredients

EINECS / ELINCS (Europe)
TSCA (USA)
DSL / NDSL (Canada)
Fullfills the requirements of the TRGS 611 (Germany)

Shelf life / Transport / Storage

Shelf life	24 months from date of production
Dangerous good	No
Package sizes	10 kg, 200 kg, 1000 kg
Storage	Protect from frost, heat and direct sunlight. Store at room temperature in the original container.

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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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