

grotan[®] F 10

Preservative for technical products

- Fungicidal effect
- Broad spectrum of efficacy
- Good immediate effect
- Free of nitrate, nitrosating agents, formaldehyde/ formaldehyde donor compounds
- Contains no organically bound chlorine (has no effect on the AOX value)

Active substance

EINECS-Name:	CAS-No.	EC-No.
2-Octyl-2H-isothiazol-3-one	26530-20-1	247-761-7
Pyridine-2-thiol-1-oxide, Sodium salt	3811-73-2	223-296-5

Physico-chemical properties

Colour	tan
Form	Liquid
Odour	characteristic
Density (20 °C)	1.075 - 1.095 g/ml
Refractive index (20 °C)	1.500 - 1.512
Initial boiling point	ca. 120 °C
Flash point (ISO 2719)	> 100 °C
Flow time (DIN 53224 - 20 °C)	< 15 s
VOC-Content to Directive 2004/42/EC	71 %

Fields of application

The optimum use level should be evaluated by means of a repeated challenge test (e.g. at schülke Technical and Microbiological department).

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

	Recommended dosage	
Watermiscable metalworking fluids	0.15 - 0.30 g/kg	(0.015 - 0.030 %)
Technical emulsions	0.15 - 0.30 g/kg	(0.015 - 0.030 %)
Aqueous systems	0.15 - 0.30 g/kg	(0.015 - 0.030 %)
Metalworking fluid concentrates [0.25 g/kg (0.025 %) in the end dilutions]	2 - 5 g/kg	(0.20 - 0.50 %)

Indications for use

General Information	grotan [®] F 10 is suitable for use in water-mixed metalworking fluids, metalworking fluid concentrates and other technical emulsions.
Recommended use pH range	5 - 11
Maximum use temperature	max. 40 °C
Additional advice	In order to avoid microbial growth and the resultant consumption of preservative from the outset, it is advisable to add grotan [®] F 10 to the fresh mix of metalworking fluid. More can be added at weekly to fortnightly intervals depending on the discharge of the metalworking fluid. When adding grotan [®] F 10, it should be added at a point with good turbulence in order to ensure good distribution in the system. Before refilling the plant, system cleaning is recommended (e.g. with grotanol [®]). When using in water-mixed metalworking fluids and metalworking fluid concentrates without adequate bacteriostatic effect, the additional use of an amine-free bactericide like grotan [®] TK 5 is recommended.

Microbiological efficacy

The efficacy of the product has been tested against the following microorganisms according to DGHM (German Society for Hygiene and Microbiology). Determination of the minimum inhibitory concentration in the serial dilution test produced the following values (MIC in % of the product):

Bacteria (gram-negative)	MIC	Bacteria (gram-positive)	MIC	Yeasts	MIC
				<i>Candida albicans</i>	0.0016
				Moulds	MIC
				<i>Aspergillus niger</i>	0.0062
				<i>Aureobasidium pullulans</i>	0.0001
				<i>Fusarium oxysporum</i>	0.0008
				<i>Penicillium expansum</i>	0.0062
				<i>Penicillium funiculosum</i>	0.0008
				<i>Trichophyton mentagrophytes</i>	0.0004

grotan[®] F 10

Compatibility*		
	compatible	to be avoided
concentrate	sealants, PVC (hard), polyethylene, polypropylene, stainless steel, steel	copper, aluminium, zinc, brass, bronze, chloroprene rubber, polymethyl methacrylate (PMMA), acrylo-nitrile butadiene styrene polymer (ABS), nitrile rubber
Further information	On contact with non-ferrous metal or non-ferrous metal containing alloys, discolourations of the surface wetted with grotan [®] F 10 can occur if the coolants do not contain a non-ferrous corrosion inhibitor.	

*Compatibility has to be proved in each case

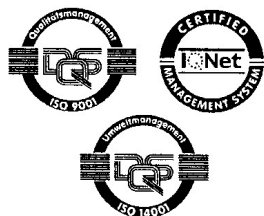
Labelling	
R-phrases(s)	R20/21, R34, R43, R50/53
S-phrases(s)	S26, S29, S35, S36/37/39, S45
Labelling	C (Corrosive), N (Dangerous for the environment)
	For further hazard instructions and safety advice please refer to the actual material safety data sheet.

Environmental information
 At a sufficient degree of dilution, all components of grotan[®] F 10 are completely biodegradable. Dilutions of grotan[®] F 10 do not normally interfere with the operation of waste water treatment plants. grotan[®] F 10 contains no organic chlorine compounds, so that there is no effect on the AOX as a result of grotan[®] F 10 in the waste water. The canisters and drums used by schülke are made of polyethylene (HDPE) and are labelled accordingly. The 1000 kg containers are covered by a return scheme that ensures collection of the used containers free of charge and appropriate reuse all over Europe. The labels are made of PE. schülke 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)
AICS (Australia)
ECL (Korea)
IECSC (China)
PICCS (Philippines)
Fulfills the requirements of the TRGS 611 (Germany)

Transport & Storage	
Dangerous goods	Yes
UN-Number	1760
Packaging group	II
Package sizes	10 kg, 200 kg, 1000 kg
Shelf life	12 Months
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. It is the responsibility of the final product manufacturer to assure that claims made for the final product are in conformance with all applicable local laws. In other respect our Conditions of Sale and Supply apply.

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