

grotan[®] A 12

Preservative for technical products

- Contains no formaldehyde
- Synergistical effect in combination with BIT
- Stable, even at high pH-values
- Broad, balanced spectrum of effect against bacteria, yeasts and moulds
- Excellent efficacy against pseudomonas
- Effective even in very low use-concentrations
- Good anticorrosion properties

Active substance		
EINECS-Name:	CAS-No.:	EC-No.:
N-(3-Aminopropyl)-N-dodecylpropane-1,3-diamine	2372-82-9	219-145-8

Physico-chemical properties	
Colour	nearly colourless - light yellow
Form	Liquid
Odour	amine-like
Density (20 °C)	ca. 0.865 g/ml
Boiling point/boiling range	> 280 °C
Flash point	> 65 °C
Viscosity (20 °C)	24.18 mPa*s
Water solubility	completely miscible
Foaming	Foaming possible
VOC-Content to Directive 2004/42/EC	none
pH (10 g/l in water)	ca. 10.6

Fields of application		
The optimum use level should be evaluated by means of a repeated challenge test (e.g. at Schülke Technical and Microbiological dept). Limits for labelling can be seen from the separate Schülke labelling sheet.		
Use biocides safely. Always read the label and product information before use.		
Recommended dosage		
Watermiscable metalworking fluids	0.5 - 2 g/kg	(0.05 - 0.2 %)
Technical emulsions	0.5 - 2 g/kg	(0.05 - 0.2 %)
Metal working fluid concentrates	10 - 40 g/kg	(1 - 4 %)

Indications for use	
General Information	Grotan [®] A 12 is fully effective in cationic and non-ionic systems. Presence of anionic substances may lead to decreased efficacy. Foaming possible
Solubility	Fully soluble in water.
Recommended use pH range	3 - 13
Maximum use temperature	max. 100 °C
Additional advice	Cleaning of equipment is possible by rinsing with water.

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>Escherichia coli</i>	0.016	<i>Staphylococcus aureus</i>	0.015	<i>Candida albicans</i>	0.031
<i>Klebsiella pneumoniae</i>	0.031			<i>Rhodotorula mucilaginosa</i>	0.008
<i>Proteus mirabilis</i>	0.075			Moulds	MIC
<i>Pseudomonas aeruginosa</i>	0.031			<i>Fusarium oxysporum</i>	0.031

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Compatibility*		
	compatible	to be avoided
concentrate	high-alloyed stainless steel (e. g. 1.4571), polyethylene, polytetrafluoroethylene	no data available

*Compatibility has to be proved in each case

Labelling	
R-phrases(s)	R48/22, R35, R50
S-phrases(s)	S26, S28, S35, S36/37/39, S45, S61
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
 Grotan[®] A 12 contains only biodegradable components. Dilutions of Grotan[®] A 12 do not normally interfere with the operation of waste water treatment plants. The canisters and drums used by Schülke are made of polyethylene (HDPE) and are labelled accordingly. The 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)
PICCS (Philippines)
AICS (Australia)
IECSC (China)
Fullfills the requirements of the TRGS 611 (Germany)

Transport & Storage	
Dangerous goods	Yes
UN-Number	2922
Packaging group	II
Package sizes	8 kg, 160 kg, 800 kg
Shelf life	24 Months
Storage	Keep container tightly closed. Keep container in a well-ventilated place. Protect from frost, heat and direct sunlight. Recommended storage temperature: 15 - 30°C

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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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