

grotan[®] BA 21

Preservative for technical products

- Synergistic combination of benzisothiazolone (BIT) and bis(3-aminopropyl)dodecylamine
- Broad, balanced spectrum of effect against bacteria, yeasts and moulds
- Enhanced efficacy especially against pseudomonas sp.
- Free of chloromethylisothiazolone, formaldehyde, formaldehyde depots and other aldehydes
- Effective even in very low use-concentrations

Active substance

EINECS-Name:	CAS-No.	EC-No.
N-(3-Aminopropyl)-N-dodecylpropane-1,3-diamine	2372-82-9	219-145-8
1,2-Benzisothiazol-3(2H)-one	2634-33-5	220-120-9

Physico-chemical properties

Colour	light yellow - yellow
Form	Liquid
Odour	characteristic
Density (20 °C)	1.045 - 1.055 g/cm ³
Refractive index (20 °C)	1.370 - 1.380
Initial boiling point	ca. 100 °C
Flash point (ISO 2719)	> 100 °C
Flow time (DIN 53211 - 20 °C)	< 15 s
Water solubility (20 °C)	in all proportions
Foaming characteristics	Foaming possible (in water)
VOC-Content to Directive 2004/42/EC	none

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). 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	0.2 - 2.0 g/kg	(0.02 - 0.2 %)
Technical emulsions	0.2 - 2.0 g/kg	(0.02 - 0.2 %)
Metal working fluid concentrates	4 - 20 g/kg	(0.4 - 2 %)

Indications for use

General Information	grotan [®] BA 21 is suitable for use in water-mixed metalworking fluids, metalworking fluid concentrates and other technical emulsions. Presence of anionic substances may lead to decreased efficacy. Foaming possible
Solubility	Fully soluble in water.
Recommended use pH range	3 - 11
Maximum use temperature	max. 100 °C
Additional advice	More can be added at weekly to fortnightly intervals depending on the discharge of the metalworking fluid. When adding grotan [®] BA 21, 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 [®]). 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>	0.008	<i>Staphylococcus aureus</i>	0.008	<i>Candida albicans</i>	0.031
<i>Klebsiella pneumoniae</i>	0.016			<i>Rhodotorula mucilaginosa</i>	0.031
<i>Pseudomonas aeruginosa</i>	0.063			Moulds	MIC
<i>Pseudomonas fluorescens</i>	0.008			<i>Fusarium oxysporum</i>	0.016
<i>Pseudomonas putida</i>	0.016				

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Compatibility*		
	compatible	to be avoided
concentrate	high-alloyed stainless steel (e. g. 1.4571), steel, polytetrafluoroethylene (PTFE), ethylene-propylene-terpolymer (EPDM), polystyrene, polyethylene, polyvinylchloride, fluorinated rubber, natural rubber, nitrile rubber	polycarbonate, PVC (soft), sealants and plastics other than mentioned, copper, aluminium, zinc, brass
aqueous dilution (0.2 %)	sealants (polytetrafluoroethylene is recommended)	Water incompatible materials, otherwise see advice for the undiluted product

*Compatibility has to be proved in each case

Labelling	
R-phrases(s)	R35, R43, R50
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
 grotan[®] BA 21 contains only biodegradable components. Dilutions of grotan[®] BA 21 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 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)
PICCS (Philippines)
AICS (Australia)
IECSC (China)

Transport & Storage	
Dangerous goods	Yes
UN-Number	1719
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.

schülke subsidiaries:



Belgium
 S.A. Schülke & Mayr
 Belgium N.V.
 1830 Machelen
 Tel. +32-02-479 73 35
 Fax +32-02-479 99 66

The Netherlands
 Schülke & Mayr Benelux B.V.
 2003 LM-Haarlem
 Tel. +31-23-535 26 34
 Fax +31-23-536 79 70

China
 Schülke & Mayr GmbH
 Shanghai Representative Office
 Shanghai 200041
 Tel. +86-21-62 17 29 95
 Fax +86-21-62 17 29 97

Switzerland
 Schülke & Mayr AG
 8003 Zürich
 Tel. +44-466 55 44
 Fax +44-466 55 33

France
 S & M France
 75341 Paris Cedex 07
 Tel. +33-1-44 11 00 81
 Fax +33-1-44 11 02 41

The United Kingdom
 Schülke & Mayr UK Ltd.
 Sheffield S9 1 AT
 Tel. +44-1142-54 35 00
 Fax +44-1142-54 35 01

Italy
 Schülke & Mayr Italia S.r.l.
 20148 Milano
 Tel. +39-02-40 21 820
 Fax +39-02-40 21 829

Other Distributors:

Argentina · Australia · Austria · Belarus · Benin · Brazil · Bulgaria · Canada · Croatia · Czech Republic · Denmark · Egypt · Estonia · Finland · Ghana · Greece · Hong Kong · Hungary · India · Indonesia · Iran · Israel · Japan · Jordan · Korea · Kuwait · Latvia · Lebanon · Lithuania · Macedonia · Malaysia · New Zealand · Nigeria · Norway · Oman · Philippines · Poland · Portugal · Russia · Saudi Arabia · Singapore · Slovakia · Slovenia · South-Africa · Spain · Sweden · Syria · Taiwan · Thailand · Turkey · Ukraine · United Arab Emirates · USA · Vietnam · Yemen

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.

Schülke & Mayr GmbH
 22840 Norderstedt
 Germany
 Tel. +49 40 52100-0
 Fax +49 40 52100-244
www.schuelke.com
 sai@schuelke.com