grotanol® FF 1 N

Microbiocidal system cleaner for circulation systems and production plants

- Synergistic combination of benzisothiazolone (BIT) and bis(3-aminopropyl)dodecylamine
- Contains no formaldehyde
- Excellent cleaning and microbicidal effect
- Broad, balanced spectrum of effect against bacteria, yeasts and moulds
- Good immediate effect
- Good anticorrosion properties
- Usable for all steel, non-ferrous and aluminium alloys
- Contains no organically bound chlorine (has no effect on the AOX value)

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
Pyridine-2-thiol-1-oxide, Sodium salt	3811-73-2	223-296-5

Other compounds

non-ionic surfactants	> 5 - < 15 %

Physico-chemical properties

Colour	light yellow - yellow
Form	Liquid
Odour	nearly odourless
Density (20 °C)	1.006 - 1.020 g/ml
Refractive index	1.363 - 1.377
Flash point (ISO 2719)	> 100 °C
Flow time (DIN 53211 - 20 °C)	< 15 s
Water solubility (20 °C)	completely miscible

Fields of application

The recommended use levels relate to the total formulation in each case. The values given are recommended guidelines. The optimum use-concentration depends on the degree of soiling.
Use biocides safely. Always read the label and product information before use.

	Recommended dosage	
Metalworking fluid plants, production plants, circulating systems and equipment	10 - 30 g/kg	(1 - 3 %)

Indications for use

General Information	Depending on the degree of soiling, grotanol® FF 1 N is used 1 % - 3 % in an aqueous solution. In order to achieve an optimum cleaning effect, a contact time of at least 6 - 24 hours is recommended.
Metal working fluid systems	In metalworking fluid systems grotanol® FF 1 N can be added to the emulsion before the last shift begins and allowed to circulate. In general, work can be continued while the system cleaner is being used. Emulsifiers carry away the tramp oil and loosened dirt in the system. To prevent blockages, inspection of filters and overflows is advisable. Together with the microbiological sanitization, i.e. germ reduction in the system, there is a very good cleaning effect. After only 6 - 24 hours the cleaning is finished and the system is sanitized due to the excellent microbicidal efficacy of grotanol® FF 1 N. Please note that in cases of especially heavy contamination it is advisable to combine chemical and mechanical system cleaning. At the end of the residence time, which usually lasts for one shift, the metalworking fluid dilution containing the system cleaner can be discharged, split and disposed of as usual.
Recommended use pH range	3 - 12

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
Escherichia coli	0.002	*Staphylococcus aureus*	< 0.001	*Candida albicans*	0.004
Pseudomonas aeruginosa	0.002				
Klebsiella pneumoniae	< 0.001			**Moulds**	**MIC**
				Fusarium oxysporum	< 0.001
				Aspergillus brasiliensis	0.008

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Compatibility*		
	compatible	**to be avoided**
aqueous dilution (1.0 %)	plastics, sealants, stainless steel, steel, aluminium, zinc, copper, brass, bronze	Water incompatible materials
Further information	From the available test results, it can be concluded that the addition of grotanol® FF 1 N has virtually no influence on the medium to be preserved.	

*Compatibility has to be proved in each case

Labelling	
Hazard statements	H315, H317, H318, H400
Precautionary statements	P273, P280, P302 + P352, P305 + P351 + P338, P310
Labelling	Danger - GHS05 (Corrosion), GHS07 (Exclamation mark), GHS09 (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 grotanol® FF 1 N are completely biodegradable. Dilutions of grotanol® FF 1 N do not normally interfere with the operation of waste water treatment plants. grotanol® FF 1 N contains no organic chlorine compounds, so that there is no effect on the AOX as a result of grotanol® FF 1 N in the waste water. The canisters and drums used by Vink 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. Vink 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)
PICCS (Philippines)
CSNN (Taiwan)
NZIoC (New Zealand)
Fullfills the requirements of the TRGS 611 (Germany)

Transport & Storage	
Dangerous goods	Yes
UN number	3082
Packaging group	III
Package sizes	10 kg, 200 kg, 1000 kg
Shelf life	18 Months
Storage	Protect from frost, heat and direct sunlight. Store at room temperature in the original container.

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