

grotan[®] TK 5

Preservative for household products

- Suitable for preservation of water based household products
- Good immediate effect
- Good head space protection
- Broad, balanced spectrum of effect against bacteria, yeasts and moulds
- Effective in pH ranges up to 12
- Contains no organically bound chlorine (has no effect on the AOX value)

Active substance			
INCI name	EINECS-Name:	CAS-No.:	EC-No.:
Dimethylol Glycol	(Ethylenedioxy)dimethanol	3586-55-8	222-720-6

Physico-chemical properties	
Colour	colourless - light yellow
Form	Liquid
Odour	aldehyde like
Density (20 °C)	1.248 - 1.260 g/ml
Refractive index (20 °C)	1.456 - 1.569
Initial boiling point	ca. 100 °C
Flash point (ISO 2719)	91 °C
Flow time (DIN 53211 - 20 °C)	< 25 s
Water solubility (20 °C)	in all proportions
Foaming (DIN 53902)	Non foaming (0.15 % in water)
VOC-Content to Directive 2004/42/EC	66 %
pH (10 g/l)	ca. 6 - 8

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). Use biocides safely. Always read the label and product information before use.		
	Recommended dosage	
Washing-up liquids	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Liquid laundry detergents	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Window cleaners	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Liquid scouring cleansers	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Liquid detergents, highly alkaline	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Wet wipes	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Wax emulsions	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Sanitation / Disinfection	1.5 g/kg	(0.15 %)
Other uses	Kindly contact us.	

Indications for use	
General Information	Grotan [®] TK 5 is fully effective both in anionic as well as cationic and non-ionic systems.
Solubility	Fully soluble in water.
Recommended use pH range	3 - 12
Maximum use temperature	max. 60 °C
Additional advice	If possible, to be incorporated at an early stage during production. pH, temperature and redox conditions are to be taken into consideration. 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>Alcaligenes faecalis</i>	< 0.025	<i>Staphylococcus aureus</i>	0.050	<i>Candida albicans</i>	0.400
<i>Escherichia coli</i>	0.050			<i>Rhodotorula mucilaginosa</i>	0.050
<i>Klebsiella pneumoniae</i>	0.050			Moulds	MIC
<i>Proteus mirabilis</i>	0.050			<i>Alternaria alternata</i>	0.050
<i>Pseudomonas aeruginosa</i>	0.050			<i>Aspergillus niger</i>	0.100
<i>Pseudomonas fluorescens</i>	0.050			<i>Aspergillus oryzae</i>	0.100
<i>Pseudomonas putida</i>	0.050			<i>Fusarium oxysporum</i>	0.100
				<i>Penicillium expansum</i>	0.100
				<i>Penicillium funiculosum</i>	< 0.025
				<i>Trichoderma viride</i>	0.050

grotan[®] TK 5

Compatibility*		
	compatible	to be avoided
concentrate	plastics, sealants, stainless steel, steel, aluminium, zinc, copper	brass
aqueous dilution (0.15 %)	No significant difference to water	Water incompatible materials
Further information	On contact with non-ferrous metal or non-ferrous metal containing alloys, discolourations of the surface wetted with Grotan [®] TK 5 can occur if the coolants do not contain a non-ferrous corrosion inhibitor. From the available test results, it can be concluded that the addition of Grotan [®] TK 5 has virtually no influence on the medium to be preserved. When selecting sealing materials, piping systems, collection baths, etc., the presence of Grotan [®] TK 5 as the preservative in the recommended use-concentration can be disregarded.	

*Compatibility has to be proved in each case

Labelling	
R-phrased(s)	R22, R36/37/38
S-phrased(s)	S26, S35
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[®] TK 5 are completely biodegradable. Dilutions of Grotan[®] TK 5 do not normally interfere with the operation of waste water treatment plants. Grotan[®] TK 5 contains no organic chlorine compounds, so that there is no effect on the AOX as a result of Grotan[®] TK 5 in the waste water. 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)*
ECL (Korea)
DSL / NDSL (Canada)*
ENCS (Japan)*
AICS (Australia)
PICCS (Philippines)
BfR XIV, XXXVI
Fulfills the requirements of the TRGS 611 (Germany)
* In preserved aqueous products the (ethylenedioxy)dimethanol can be described also as a hydrolyzing product, ethane-1,2-diol and formaldehyde.

Transport & Storage	
Dangerous goods	No
UN-Number	-
Packaging group	-
Package sizes	10 kg, 200 kg, 1200 kg
Shelf life	24 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

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

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

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

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

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

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

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