

# parmetol<sup>®</sup> A 28 S

## Preservative for household products

- Water based combination of chloromethyl-/ methylisothiazolone (CMI/ MI) and bronopol
- Suitable for preservation of water based household products
- Enhanced efficacy especially against pseudomonas sp.
- Suitable when N-/ O-formals cannot be used e. g. for technical reasons
- Free of organic solvents

Active substance			
INCI name	EINECS-Name:	CAS-No.	EC-No.
2-Bromo-2-nitropropane-1,3-diol	Bronopol	52-51-7	200-143-0
Methylchloroisothiazolinone	5-Chloro-2-methyl-2H-isothiazol-3-one	26172-55-4	247-500-7
Methylisothiazolinone	2-Methyl-2H-isothiazol-3-one	2682-20-4	220-239-6
(Mixture of 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one)		55965-84-9	

Physico-chemical properties	
Colour	nearly colourless - light yellow
Form	Liquid
Odour	nearly odourless
Density (20 °C)	ca. 1.072 - 1.092 g/ml
Refractive index (20 °C)	1.345 - 1.357
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 (DIN 53902)	Non foaming (0.1 % 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.
<b>Use biocides safely. Always read the label and product information before use.</b>

	Recommended dosage	
Washing-up liquids	0.3 - 1.5 g/kg	(0.03 - 0.15 %)
Detergent	0.3 - 2.0 g/kg	(0.03 - 0.20 %)
Liquid laundry detergents	0.3 - 2.0 g/kg	(0.03 - 0.20 %)
Fabric softener	0.3 - 1.0 g/kg	(0.03 - 0.10 %)
Window cleaners	0.5 - 1.5 g/kg	(0.05 - 0.15 %)
Liquid scouring cleansers	0.5 - 3.0 g/kg	(0.05 - 0.30 %)
Wet wipes	1.0 - 3.0 g/kg	(0.10 - 0.30 %)
Wax emulsions	0.3 - 3.0 g/kg	(0.03 - 0.30 %)
Other uses	Kindly contact us.	

Indications for use	
General Information	parmetol <sup>®</sup> A 28 S is fully effective both in anionic as well as cationic and non-ionic systems. High pH values (> pH 8.5) should be avoided. Acidic pH values have no negative influence on the effectiveness.
Solubility	Fully soluble in water and in most polar organic solvents. Virtually insoluble in non polar solvents.
Compatibility with sulphite ions	parmetol <sup>®</sup> A 28 S is inactivated by sulphite ions. Excessive sulphite > 10 ppm must be avoided.
Recommended use pH range	3 - 8.5
Maximum use temperature	max. 60 °C (depending on pH; recommended: max. 40 °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. Avoid alkaline pre-solutions. Avoid secondary amines. 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>Enterobacter gergoviae</i>	< 0.025	<i>Staphylococcus aureus</i>	0.050	<i>Candida albicans</i>	< 0.025
<i>Escherichia coli</i>	< 0.025	<i>Kocuria rhizophila</i>	< 0.025		
<i>Klebsiella pneumoniae</i>	< 0.025			Moulds	MIC
<i>Pseudomonas aeruginosa</i>	< 0.025			<i>Aspergillus niger</i>	0.100
<i>Pseudomonas fluorescens</i>	< 0.025			<i>Penicillium funiculosum</i>	< 0.025
<i>Pseudomonas putida</i>	< 0.025				

# parmetol® A 28 S

Compatibility*		
	compatible	to be avoided
concentrate	plastics, sealants, high-alloyed stainless steel (e. g. 1.4571)	metallic materials, fluorinated rubber, PVC (soft)
aqueous dilution (0.2 %)	No significant difference to water	Water incompatible materials

\*Compatibility has to be proved in each case

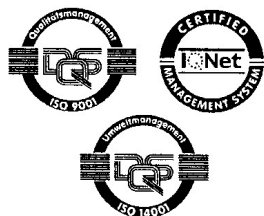
Labelling	
R-phrases(s)	R38, R41, R43, R51/53
S-phrases(s)	S24, S26, S35, S37/39
Labelling	Xi (Irritant), N (Dangerous for the environment)
	For further hazard instructions and safety advice please refer to the actual material safety data sheet.

**Environmental information**  
 parmetol® A 28 S contains only biodegradable components. Dilutions of parmetol® A 28 S 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	Transport & Storage												
EINECS / ELINCS (Europe) TSCA (USA) ECL (Korea) DSL / NDSL (Canada) ENCS (Japan) PICCS (Philippines) IECSC (China) AICS (Australia) BfR XIV, XXXVI FDA 175.105 / 176.300 / 176.170	<table border="1"> <tr> <td>Dangerous goods</td> <td>Yes</td> </tr> <tr> <td>UN-Number</td> <td>3082</td> </tr> <tr> <td>Packaging group</td> <td>III</td> </tr> <tr> <td>Package sizes</td> <td>25 kg, 200 kg, 1000 kg</td> </tr> <tr> <td>Shelf life</td> <td>24 Months</td> </tr> <tr> <td>Storage</td> <td>Protect from frost, heat and direct sunlight. Store at room temperature in the original container.</td> </tr> </table>	Dangerous goods	Yes	UN-Number	3082	Packaging group	III	Package sizes	25 kg, 200 kg, 1000 kg	Shelf life	24 Months	Storage	Protect from frost, heat and direct sunlight. Store at room temperature in the original container.
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Ecolabel			
	Basic criteria	Product type	max. use concentration
European Flower	2003/200/EC	Laundry detergents	0.20 %
European Flower	2005/342/EC	Hand dishwashing detergents	0.15 %
European Flower	2005/344/EC	all-purpose cleaners and cleaners for sanitary facilities	0.20 %

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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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