



# METALWORKING ADDITIVES

## TECHNICAL DATA SHEET

Zschimmer & Schwarz offers a wide variety of additive technology used to formulate high-performance metal-forming and metal-removal fluids.

- ▶ Maximise heat transfer and coolant life
- ▶ Improve surface finish and corrosion protection
- ▶ Reduce friction and manufacturing costs

WETTING AGENTS							
PRODUCT NAME	VISCOSITY AT 20 °C [mPa s]	CLOUD POINT IN WATER [°C]	SURFACE TENSION [mN/m]	FOAMING	SOLUBILITY		
					WATER	ISOPROPANOL	MINERAL OIL
OXETAL ID 104	20–30	< 0	26	low	partial	good	partial
PROPETAL 105	40–50	< 5	26	low	partial	good	insoluble
ZUSOLAT 1004	20–30	< 5	26	medium	partial	good	good
OXETAL 500/85	70–90	32	27	high	good	good	partial

PROPETAL – LOW-FOAMING SURFACTANTS							
PRODUCT NAME	CLOUD POINT [°C]		SURFACE TENSION [mN/m]	FOAM VOLUME 30 sec/5 min	CONTACT ANGLE [°]		
	WATER	BDG			ALUMINIUM	GLASS	PARAFILM
PROPETAL 200	< 0	25	30.5	20 / 0	20	25	50
PROPETAL 300	< 0	15	32.2	0 / 0	35	36	63
PROPETAL 400	< 1	16	32.6	0 / 0	–	–	–
PROPETAL 105	< 5	48	26.7	35 / 35	3	12	36
PROPETAL 120	22	35	30.1	20 / 15	6	12	50
PROPETAL 220	18	35	32.0	0 / 0	–	–	–
PROPETAL 130	32	43	29.8	120 / 40	4	12	49
PROPETAL 140	39	50	29.7	140 / 50	5	7	48
PROPETAL 150	50	57	29.1	150 / 55	6	11	49
PROPETAL 160	60	65	28.8	280 / 90	7	11	49

MULSIFAN – EMULSIFIERS FOR TECHNICAL APPLICATIONS								
PRODUCT NAME	CHEMICAL DESCRIPTION	PHYSICAL FORM AT 20 °C	HLB VALUE	CLOUD POINT [°C]			SURFACE TENSION [mN/m]	FOAMING
				1% IN DE-MIN. WATER	1% IN 10% NaCl	5 g IN 25 g 25% BDG		
MULSIFAN RT 1	Blend of anionic and nonionic	liquid	10	–	–	55–60	30	low
MULSIFAN RT 7	Ethoxylated triglyceride	liquid	10	–	–	60–65	34	low
MULSIFAN RT 11	Fatty alcohol polyglycol ether	wax	16	–	75–80	–	40	high
MULSIFAN K 326	Blend of anionic and nonionic	liquid	10	–	–	–	26	high
MULSIFAN RT 410 G	Blend of PAG end ester	liquid	10	–	–	35–45	28	low

Please inquire about additional tailor-made products that can be made to fit your exact performance requirements.



## CORROSION PROTECTION

PRODUCT NAME	CHEMICAL DESCRIPTION	PHYSICAL FORM AT 20 °C	ACTIVE INGREDIENT [%]	P CONTENT [%]	pH (1%)	VISCOSITY AT 20 °C [mPa s]	FOAMING	SOLUBILITY	
								WATER	ISOPROPANOL
PHOSFETAL 201	Alkyl polyglycol ether phosphate, acid	liquid	100	3.7	1.5	200	high	partially	good
PHOSFETAL 201 K	Potassium alkyl polyglycol ether phosphate	liquid	90	3.2	7	500	high	good	partially
PHOSFETAL 213	Alkyl polyglycol ether phosphate, acid	liquid	100	3.6	2.5	500–600	medium	partially	good
PHOSFETAL 218	Fatty alcohol phosphate, acid	liquid	100	8.3	1.5	700	low	insoluble	good
PROTELAN LS 9011	Sodium lauroyl sarcosinate	liquid	30	–	9.5–11	300	high	good	partially

## CUBLEN PHOSPHONATES – ANTI-SCALING AND CORROSION INHIBITORS

PRODUCT NAME	COMPOSITION OF THE SOLUTION	pH (1%)	P CONTENT [%]	MAX. Cl CONTENT	APPLICATION
CUBLEN AP 1	ATMP acid	< 2	15	0.05	Aluminium (acidic), galvanised and carbon steel
CUBLEN BTP 480	BHMTMP acid	< 2	9.9	6	Steel, oil field, down hole
CUBLEN CAP 242	Alkylamino phosphonate K-salt	7	3.9	0.1	Additive for emulsions, aluminium, steel
CUBLEN DNC 450	DTPMP acid	< 2	12.2	0.02	Galvanised and carbon steel
CUBLEN F 3226	HDTMP potassium salt	7	6.2	4	Carbon steel, aluminium
CUBLEN K 3014	HEDP sodium salt	11.5	6.4	0.1	Carbon steel
CUBLEN MA	Inhibitor formulation	2	10		Copper, brass, carbon steel
CUBLEN NCD 732	DTPMP sodium salt	7	6.4	0.02	Galvanised and carbon steel
CUBLEN P 50	PBTC acid	< 2	5.7		Tinplate, carbon steel
CUBLEN PEP 556	PAPEMP sodium salt	5	7.0	3	Carbon steel
CUBLEN R 50	HEMPA acid	< 2	12.1	4	Carbon steel

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**Disclaimer:** The information contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. This product information is not intended to provide legal or regulatory advice about product uses or claims in any jurisdiction and should not be relied upon for such guidance. Since global regulatory requirements differ, parties accessing this information are solely responsible for determining whether the products and/or claims comply with applicable local laws and regulations, including but not limited to import and export regulations. Please contact your local Zschimmer & Schwarz representative for more product information. Zschimmer & Schwarz assumes no liability for any use of our products that is not in compliance with the requirements of the country of the user. OXETAL, PROPETAL, ZUSOLAT, MULSIFAN, PHOSPHEAL, PROTELAN and CUBLEN are trade names of companies of the Zschimmer & Schwarz Group.

**Labelling:** Details about the classification and labelling of our products and further advice on safe handling are contained in the current safety data sheets.

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