

KAO FINDET MB AKYPO® ROX

METALWORKING ADDITIVES

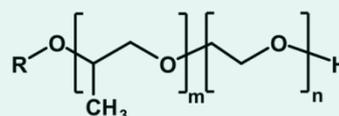
LOW FOAMING NONIONIC EMULSIFIERS

Multifunctional low foaming nonionic emulsifiers designed to meet the severe conditions of metalworking applications.

MAIN PROPERTIES

- Low foaming nonionic emulsifier
- High-efficiency main emulsifier
- Excellent environmental profile
- Liquid and easy to formulate
- Synergistic effects with AKYPO® PO-EO, RO or RA for optimized hard water stability and lime soap dispersion
- Globally registered

AKYPO® ROX
KAO FINDET



R = C₁₆₋₁₈
m = 6-9
n = 2-9

TECHNICAL DATA*	HLB	CONTACT ANGLE ON STEEL (DCO4B)	SURFACE TENSION (mN/m)	SOLUBILITY IN WATER	CLOUD POINT (°C)	PRODUCT LABEL
	LUMiFuge® (in-house method)	0.1% in 1% NaOH	0.1% in 1% NaOH (static ring)	neutralized	Hoffmann 5g in 25g BDG	
AKYPO® ROX RS-0602N	4.5	n.s.	n.s.	n.s.	37	! 
KAO FINDET MB-212	5	n.s.	n.s.	n.s.	40	!
AKYPO® ROX RS-0606N KAO FINDET MB-8012	8	45.5	33.2	n.s.	59	!
AKYPO® ROX RC-0960N	11	38.8	31.8	s	68	!

*Please contact us for further information on technical product data. This data is provided as guidance, but does not represent the product specifications in the technical data sheets. Additional information is also available in the product safety data sheets.

FORMULATION AND EMULSION STABILITY

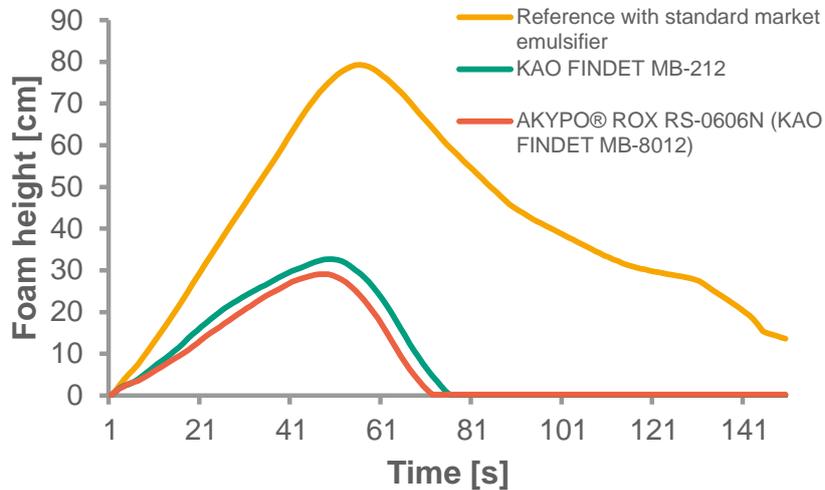
Our KAO FINDET and AKYPO® ROX emulsifiers are very efficient emulsifiers compared with standard market products Cetyl/Oleyl alcohol ethoxylates in similar HLB ranges.

We observed easy formulation with them for different metalworking fluid types. KAO FINDET MB-212 in particular shows a very small gel window when combined with oil and water at different ratios. Particle size distribution of the metalworking formulation is typically very narrow and tends toward smaller particle sizes.



LOW FOAMING BEHAVIOR

AKYPO® and KAO FINDET emulsifiers are designed to be exceptionally low foaming. Foam behavior with different emulsifier combinations was tested with 5% metalworking fluid emulsion at 178 ppm (10°dH) with a Krüss DFA100 Dynamic Foam Analyzer.



SOLUBILITY IN OIL

Solubility of 5% emulsifier in different oils and esters was tested at various temperatures and evaluated without stirring. KAO FINDET and AKYPO® ROX emulsifiers generally perform better than standard market products Cetyl/Oleyl alcohol ethoxylates in similar HLB ranges. Results are shown under most critical conditions at 5°C without stirring; test results were even better at room temperature.

OIL TYPE	AKYPO® ROX RS-0602N	KAO FINDET MB-212	MARKET REFERENCE CETYL/OLEYL ALCOHOL ETHOXYLATE (2 EO)	AKYPO® ROX RS-0606N KAO FINDET MB-8012	MARKET REFERENCE CETYL/OLEYL ALCOHOL ETHOXYLATE (5 EO)	AKYPO® ROX RC-0960N
TMP ester	clear	clear	clear	clear	clear	clear
Pentaerythritol mono oleate	clear	clear	clear	clear	turbid	clear
Medicinal grade white oil (paraffinic)	separation	clear	hazy	separation	turbid	separation
Naphtenic base oil	turbid	clear	hazy	clear	hazy	clear
Refined canola oil	clear	clear	hazy	clear	turbid	turbid
High oleic sunflower oil	clear	clear	hazy	clear	turbid	turbid

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