



METALWORKING FLUID ADDITIVES

Selection Guide

EXTENDED FLUID LIFE. ENHANCED CORROSION CONTROL. IMPROVED ENVIRONMENTAL PROFILE.

As the world's leading supplier of nitroalkane chemistries, ANGUS offers an unmatched portfolio of globally registered additives that meet the most complex formulating and regulatory requirements. From readily biodegradable and low-secondary-amines, to high-efficiency neutralization, multi-metal compatibility and extended fluid life, ANGUS additives help improve the performance, profile and productivity of metalworking fluids, even in the most demanding environments.

KEY | GOOD + | BETTER +++ | BEST +++++

MULTIFUNCTIONAL NEUTRALIZING ADDITIVES

PRODUCT	PHYSICAL PROPERTIES			PERFORMANCE ATTRIBUTES					CHEMICAL INVENTORIES										
	pKa	Secondary Amine Content	Water Solubility	pH Neutralization	Cast Iron Corrosion	Aluminum Staining	Fluid Longevity	Cobalt Leaching	USA (TSCA)	CANADA (DSL)	EUROPE (REACH)	KOREA	JAPAN	CHINA	AUSTRALIA	NEW ZEALAND	MEXICO*	PHILIPPINES	TAIWAN
CORRGUARD™ 95	9.8	5 - 7%	100%	+++++	++	++	++	+++++	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
CORRGUARD™ LSA	9.8	<0.75%	100%	+++++	++	++	++	+++++	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
CORRGUARD™ FLEX	9.5 & 8.8	<1%	100%	+++	++++	++++	++++		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
CORRGUARD™ FS	9.7	<7%	100%	++++	+++	+++	+++		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
CORRGUARD™ EXT	9.8	<2%	5%	++	+++++	+++++	+++++	+++	⊙	⊙	⊙	⊙	⊙	⊙		⊙		⊙	⊙

MULTIFUNCTIONAL EMULSIFIERS

PRODUCT	PHYSICAL PROPERTIES			PERFORMANCE ATTRIBUTES						CHEMICAL INVENTORIES										
	HLB	Secondary Amine Content	Water Solubility	Hard Water Stability	Cast Iron Corrosion	Foaming	Lubrication	Film Forming	Aluminum Staining	USA (TSCA)	CANADA (DSL)	EUROPE (REACH)	KOREA	JAPAN	CHINA	AUSTRALIA	NEW ZEALAND	MEXICO*	PHILIPPINES	TAIWAN
CORRGUARD™ LF-100	8 - 10	NA	Dispersible	+++++	+++	+++++				⊙		⊙			⊙		⊙			
CORRGUARD™ SI	NA	<2%	Dispersible		+++++		+++	+++++	+++++	⊙		⊙	⊙	⊙	⊙		⊙			⊙
ALKATERGE™ E	<5	NA	Insoluble	+++	+	+	+	+++		⊙	⊙	⊙			⊙	⊙	⊙			⊙
ALKATERGE™ T	<5	NA	Insoluble	+++	+	+	+	+++		⊙	⊙	⊙	⊙			⊙	⊙	⊙		⊙

SPECIALTY ADDITIVES TO ADDRESS SPECIFIC FORMULATION NEEDS

ANGUS offers specialty amino alcohols that help meet specific performance requirements for metalworking fluids, such as low secondary amines, vapor phase corrosion inhibition, and formaldehyde and odor scavenging.

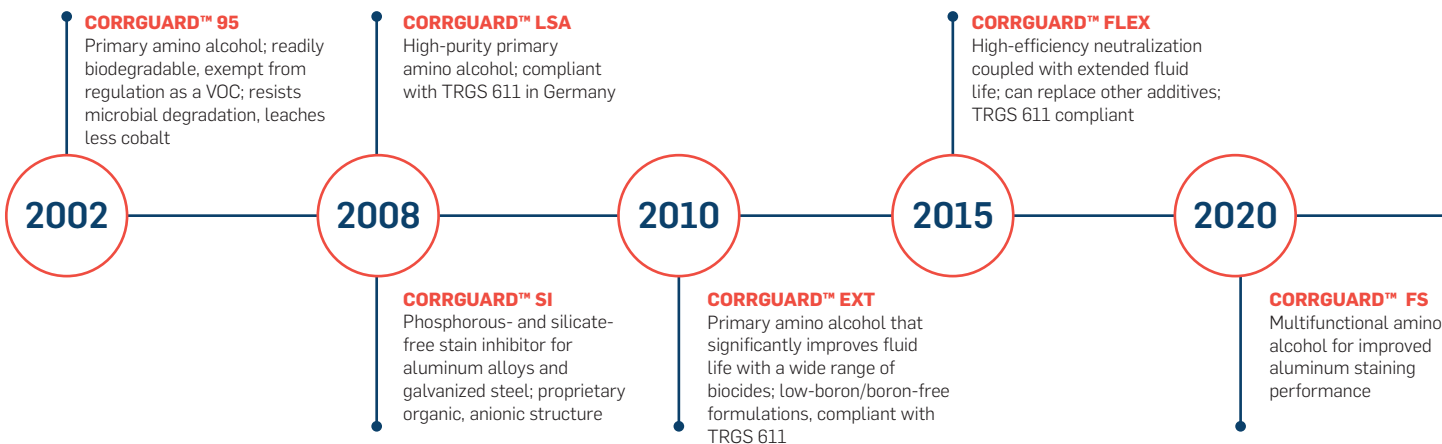
PRODUCT	PHYSICAL PROPERTIES		PERFORMANCE ATTRIBUTES			CHEMICAL INVENTORIES										
	pKa	Water Solubility	Vapor Phase Corrosion	Odor Scavenging	Formaldehyde Scavenging	USA (TSCA)	CANADA (DSL)	EUROPE (REACH)	KOREA	JAPAN	CHINA	AUSTRALIA	NEW ZEALAND	MEXICO*	PHILIPPINES	TAIWAN
AEPD™-85	8.8	100%		+++++	+++++	⊙	⊙	⊙	⊙		⊙	⊙	⊙	⊙	⊙	⊙
DMAMP-80™	10.2	100%	+++++	+	+	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		⊙

* Draft Inventory

SUPPORTING GROWTH THROUGH A SUSTAINABLE APPROACH

Over our 70-year history, we've gained deep expertise and experience that enables us to continuously develop solutions that help the best metalworking fluids perform better. We also have maintained an enduring commitment to supporting the sustainable growth of the metalworking fluid market through innovation that delivers value to our customers, our partners and for ANGUS.

A HISTORY OF SUSTAINABLE INNOVATION



Our toolkit of metalworking fluid additives is designed to address the latest trends and regulatory requirements that impact not only formulators and manufacturers, but also operators and end users.

HEALTH AND SAFETY

- Low boron
- No formaldehyde
- Low secondary amines

ENVIRONMENT

- Broadly registered
- Globally compliant
- Readily biodegradable in the environment

PRODUCTIVITY AND PROFITABILITY

- Multifunctional pH buffering
- Extended fluid life when used with registered biocides
- Works across a broad range of formulation platforms

PRODUCT STEWARDSHIP

ANGUS encourages its customers to review their applications of ANGUS products from the standpoint of human health and environmental quality. To help ensure that ANGUS products are not used in ways for which they are not intended, ANGUS personnel will assist customers in dealing with environmental and product safety considerations. For assistance, product Safety Data Sheets, or other information, please visit angus.com or contact us at info@angus.com.



DISCOVER A **BETTER WAY™**

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