

SUPPORTING GROWTH THROUGH A SUSTAINABLE APPROACH



Over our 70-year history, we have maintained an enduring commitment to supporting the sustainable growth of the market through innovation that delivers value to our customers, our partners and for ANGUS. **Our toolkit of specialty additives is designed to address the latest trends and regulatory requirements that impact not only formulators and manufacturers, but also operators and consumers.**



HEALTH & SAFETY

The majority of ANGUS chemistries are California Prop 65 friendly and can help meet requirements for low- and no-VOC formulations



ENVIRONMENT

Globally compliant, broadly registered and readily biodegradable in the environment



CONTINUED INNOVATION

ANGUS continues to develop new, innovative chemistries to meet changing market needs

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**™

angus.com

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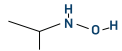
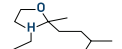
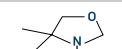
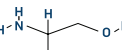
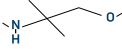
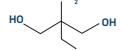
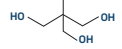

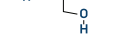
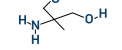
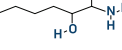
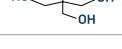
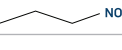
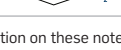
HOUSEHOLD, INDUSTRIAL AND INSTITUTIONAL CLEANING

Specialty Additive Selection Guide

DISCOVER A **BETTER WAY**™

DISCOVER THE PERFORMANCE, EFFICIENCY AND VERSATILITY OF ANGUS CHEMISTRIES

As the world's leading manufacturer of nitroalkane chemistries, ANGUS offers an unmatched portfolio of globally registered additives that meet the most complex formulating and regulatory requirements. From sustainability to compatibility, ANGUS additives help improve the performance, profile and productivity of your cleaning products, even in the most demanding applications.

CHEMICAL NAME	CHEMICAL FORMULA	CHEMICAL STRUCTURE	CAS#	MW (g/mol)	pH (0.1M)	pKa	APPEARANCE	% ACTIVE	COLOR	SOLUBILITY (in water)	FUNCTION/DESCRIPTION
Alkylhydroxylamines											
N-Isopropylhydroxylamine *	C3H9NO		5080-22-8	75.11	10.3	6.2	Liquid	15%	Colorless	Miscible with water	Shortstop for rubber, O2 scavenger/ metal passivator
Oxazolines & Oxazolidines											
4-ethyl-2-(8-heptadecenyl)-2-oxazolemethanol	Reaction product of TOFA and 2-amino-2-methyl-1-propanol	Oxazoline	68140-98-7	365.6	NA	NA	Viscous liquid	100%	Brown	Insoluble	Surface active agent, invert emulsifier
2-heptadecenyl-4,4(5H)-oxazoledimethanol	Reaction product of TOFA and Tris(hydroxymethyl)aminomethane	Oxazoline	28984-69-2	367.57	NA	NA	Solid	100%	White to Tan	Insoluble	Surface active agent, invert emulsifier
Ethanol, 2,2'-(2-heptadecyl-4(5H)-oxazolyldiene bis (methylene oxy-2,1-ethanedioxy)) bis	Ethoxylated reaction product of TOFA and Tris(hydroxymethyl)aminomethane	Oxazoline	95706-86-8	545.8	10.7	NA	Liquid	100%	Brown	Dispersible	Emulsifier
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	C11H23NO		143860-04-2	185.31	NA	NA	Liquid	95%	Colorless	Hydrolyzes rapidly	Moisture scavenger
4,4-dimethyloxazolidine	C5H11NO		51200-87-4	101.15	10.5-11.5	8.4 (calc)	Liquid	78%	Yellow	Soluble in water	Crosslinker; buffering agent; corrosion inhibitor
Amino Alcohols											
2-aminopropanol	C3H9NO		6168-72-5	75.11	10.7	9.4	Liquid	100%	Colorless to light yellow	Miscible with water	Synthesis, neutralizer
2-amino-2-methyl-1-propanol	C4H11NO		124-68-5	89.14	10.8	9.8	Liquid or waxy solid	75%-100%	Colorless	Miscible with water	Neutralizer, corrosion control, biocide enhancement
2-amino-2-ethyl-1,3,-propanediol	C5H13NO2		115-70-8	119.16	10.4	8.8	Liquid	85%-100%	Yellow	Miscible with water	Formaldehyde scavenger, neutralizer
Tris(hydroxymethyl)aminomethane	C4H11NO3		77-86-1	121.14	9.9	8.0	Crystals or liquid	40%-100%	White (crystals); colorless to brown (liquid)	Greater than 50%	Buffer and synthesis
2-dimethylamino-2-methyl-1-propanol	C6H15NO		7005-47-2	117.19	11.2	10.2	Liquid	80%	Colorless to yellow	Miscible with water	Corrosion control, biocide enhancement
2-amino-1-butanol	C4H11NO		96-20-8	89.14	10.8	9.5	Liquid	95%-100%	Yellow	Miscible with water	Synthesis, corrosion control, aluminum staining control, biocide enhancement
2-amino-2-methyl-1,3-propanediol	C4H11NO2		115-69-5	105.14	10.2	8.8	Crystals or liquid	60%-100%	Colorless to yellow	Miscible with water	Buffer, synthesis starting material
3-amino-4-octanol	C8H19NO		1001354-72-8	145.25	10.8	9.8	Liquid	85%	Colorless	5% soluble in water	Corrosion control, aluminum staining control, biocide enhancement
2-(dimethylamino)-2-(hydroxymethyl)-1,3-propanediol	C6H15NO3		1112-24-9	149.19	10.4	9.2	Liquid	60%	Off-white	Greater than 60%	Neutralizer; buffer
2-amino-1-butanol and 2-amino-2-ethylpropanediol	See 2-amino-1-butanol and 2-amino-2-ethyl-1,3,-propanediol	Referenced above	96-20-8 and 115-70-8	See 2-amino-1-butanol and 2-amino-2-ethyl-1,3,-propanediol	10.7	See 2-amino-1-butanol and 2-amino-2-ethyl-1,3,-propanediol	Liquid	85%	Yellow to green	Miscible with water	Neutralizer
Nitroalkane Solvents											
NIKANE™*	See NIPAR S-10 and Nitroethane	See NIPAR S-10 and Nitroethane	79-24-3 and 108-03-2	See NIPAR S-10 and Nitroethane	NA	NA	Liquid	100%	Colorless to light yellow	2-4%	Solvent
FLEXITANE™*	See NIPAR S-10 and Nitroethane	See NIPAR S-10 and Nitroethane	79-24-3 and 108-03-2	See NIPAR S-10 and Nitroethane	NA	NA	Liquid	100%	Colorless to light yellow	4%	Solvent
AVATANE™*	See NIPAR S-10 and Nitroethane	See NIPAR S-10 and Nitroethane	79-24-3 and 108-03-2	See NIPAR S-10 and Nitroethane	NA	NA	Liquid	100%	Colorless to light yellow	4%	Solvent
NIPAR S-10™*	C3H7NO2		108-03-2	89.1	NA	NA	Liquid	100%	Colorless to light yellow	1.5%	Solvent
Nitroethane*	C2H5NO2		79-24-3	75.07	NA	NA	Liquid	100%	Colorless to light yellow	4.5%	Solvent

*The majority of these ANGUS chemistries are California Proposition 65 friendly. Please contact an ANGUS representative for further clarification on these noted chemistries.