

# A COMPLEMENTARY FORMULATION TOOLBOX

## DISCOVER A BETTER WAY™ with ANGUS

In addition to multifunctional additives, ANGUS offers a range of other unique chemistries for use in a variety of paints and coatings applications. Contact an ANGUS Sales Representative for more information on product availability in your specific region.

PRODUCT	DESCRIPTION	CHEMISTRY	APPLICATIONS
ALKATERGE™ E	Nonvolatile surface active agent; anti-foam agent; antioxidant for solvent-borne formulations	Oxazoline	Pigment grinding and dispersion; penetrant in paper and textiles
ZOLDINE™ MS-PLUS	Moisture scavenger for solvent-borne formulations	Oxazolidine	Polyurethane and polyurea coatings, sealants and elastomers
ZOLDINE™ XL-29SE	Crosslinker for aqueous and solvent-borne carboxylated resin systems	Polycarbodiimide	Wood, leather, and plastic coatings; waterborne inks, adhesives, and metal coatings
NIPAR S-10™	Solvent	Nitroparaffin	Industrial, wood and electrostatic spray coatings; printing inks; strippers/finish removers and industrial solvent blends
FLEXITANE™	Solvent	Nitroparaffin	
AVATANE™	Solvent	Nitroparaffin	
DMMOPA	Experimental multifunctional additive and stabilizer for waterborne formulations	Etheramine	Automotive and industrial paints; 1k polyurethane dispersions; alkyd emulsions; inks
DMTA	Multifunctional additive and neutralizer for waterborne formulations	Tertiary amino alcohol	2K polyurethane dispersions; concrete, wood, automotive, and metal coatings; adhesives

### THE RIGHT SOLUTIONS FOR A SUSTAINABLE FUTURE

AEPD VOX 1000 is classified as a non-VOC multifunctional additive in Europe and Asia Pacific, and is considered a low-VOC additive in the rest of the world. In addition, AMP multifunctional additive is the only organic amine to achieve VOC-exemption status from the U.S. Environmental Protection Agency (EPA), Environment Canada and the South Korea National Institute of Environment and Research (NIER).

#### 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](http://angus.com) or contact us at [info@angus.com](mailto:info@angus.com).



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[angus.com](http://angus.com)

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# MULTIFUNCTIONAL ADDITIVES

## For Paints and Coatings

DISCOVER A BETTER WAY™



# VERSATILITY. EFFICIENCY. STABILITY.

## MULTIFUNCTIONAL PERFORMANCE IN A WIDE RANGE OF APPLICATIONS

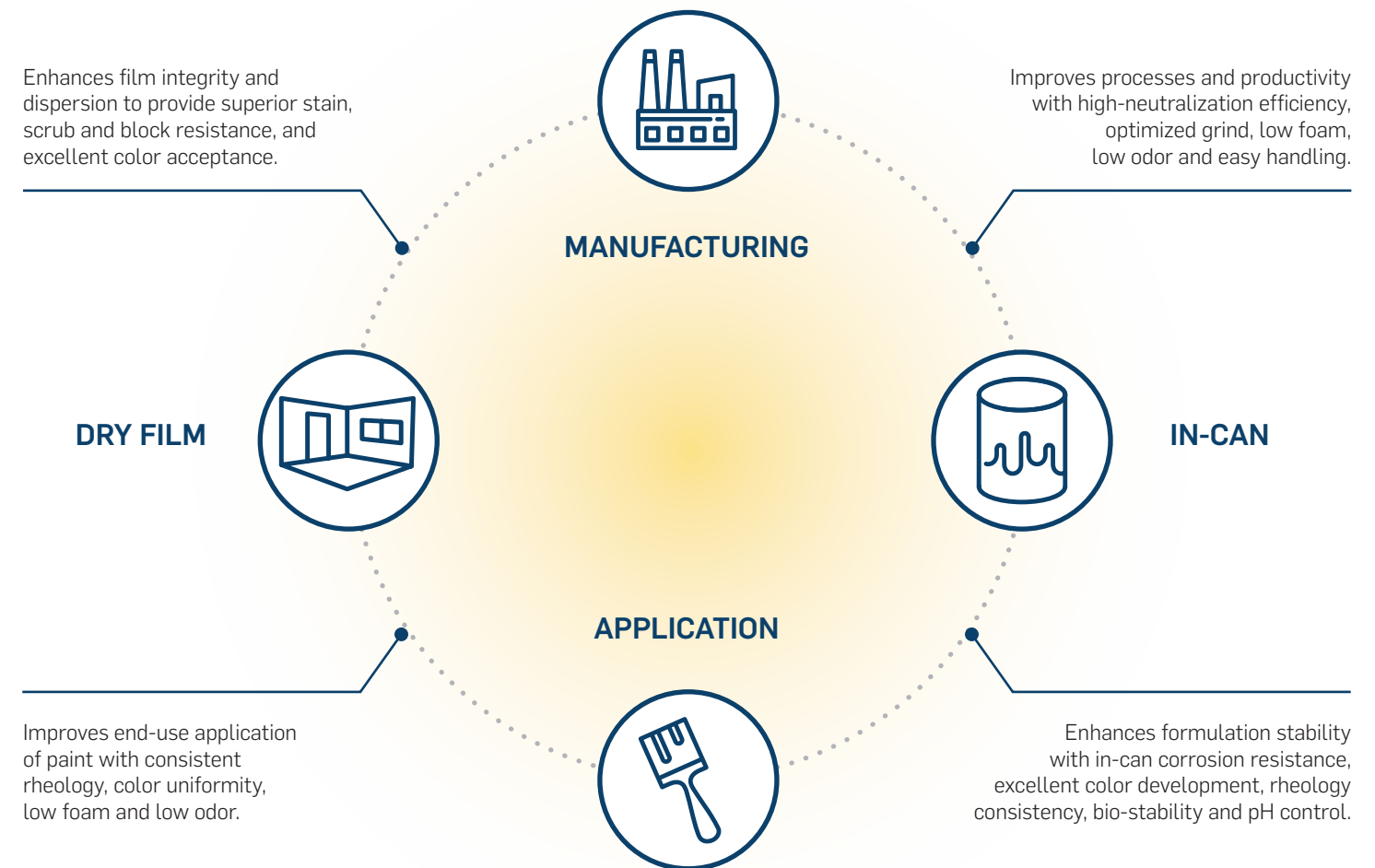
ANGUS Chemical Company is a leading global manufacturer of specialty additives, intermediates, performance enhancers and process aids that help paints, coatings and inks—and the companies that manufacture them—perform better.

Our unique, multifunctional chemistries, such as AMP™, AEPD™ VOX 1000, DMAMP-80™, and TRIS AMINO™ Crystals, enable formulators and manufacturers to maximize the performance and value of their paints and coatings across a wide variety of applications:

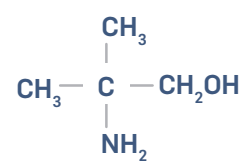
- Waterborne and solvent-borne architectural paints
- Wood coatings
- Industrial coatings
- Pigment / slurry dispersions
- Powder coatings
- Automotive OEM and refinishing
- Emulsion polymerization
- Leather and textiles
- Infrastructure and marine coatings
- Inks
- Packaging coatings

## REDEFINING **VERSATILITY** AND **PERFORMANCE**

For more than 70 years, ANGUS has made sustained and significant contributions to the global paint and coatings market by using our deep expertise and unique nitroalkane chemistries to deliver value and multifunctional performance benefits at all stages of a formulation's lifecycle.



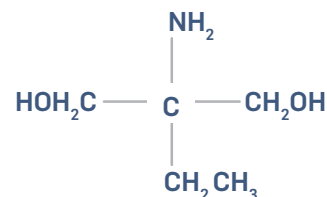
**AMP**  
2 - amino - 2 - methyl -  
1 - propanol



pKa: 9.72 @ 25°C

**AEPD VOX 1000**

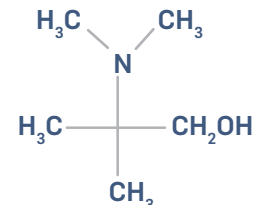
2 - amino - 2 - ethyl -  
1,3 - propanediol



pKa: 8.76 @ 25°C

**DMAMP**

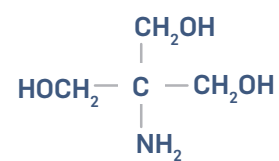
2 - dimethylamino - 2 - methyl -  
1 - propanol



pKa: 10.2 @ 25°C

**TRIS AMINO CRYSTALS**

2 - amino - 2 - hydroxymethyl -  
1,3 - propanediol



pKa: 8.08 @ 25°C

## DID YOU KNOW?

In the production of latex paints, AMP, AEPD and DMAMP function as a powerful co-dispersants by enhancing the performance of anionic dispersants, in turn helping reduce the use levels of primary dispersants. In addition, using AMP in the grind is proven to help produce paints with maximum hiding power, color acceptance, and stability at considerably lower anionic dispersant levels than are normally required to achieve similar results.

The chart to the right illustrates that, as a main dispersant, AMP is more effective than polyacrylate. The combination of AMP and polyacrylate dispersant is much more effective than polyacrylate alone in dispersing TiO<sub>2</sub>.

