

Key Performance Advantages

- Wide variety of uses in several applications
- Remains liquid at low temperatures (versions containing added water)
- Exempted from regulation as a VOC by U.S. EPA



Paints and Coatings

AMP[®]

2-AMINO-2-METHYL-1-PROPANOL SOLUTION

CAS Registry No.124-68-5

AMP Dispersant is a multifunctional specialty additive containing 2-amino-2-methyl-1-propanol. This mobile liquid with a relatively low viscosity remains liquid at temperatures as low as 0°C/32°F to permit easy and convenient handling. AMP use benefits include, but are not limited to, the following:

- Acts as a co-dispersant for particulate systems
- Efficient amine for resin neutralization
- High base strength
 - Relatively low odor
 - Relatively low molecular weight
- Acts as a formaldehyde scavenger
- Carbon dioxide neutralizer and pH adjuster for steam-condensate lines
- Key component of low cobalt-leaching metalworking fluids
- Useful raw material for synthesis applications
- Component of powerful anionic emulsifier systems
- Multiple FDA approvals for indirect food contact applications

Typical Properties

The following are selected formulating properties of AMP. They are not to be considered product specifications.

Characteristic	Typical Value
Specific gravity @ 25/25°C (77 / 77°F) (with ~5% water)	0.942
Weight per gallon @ 25°C (77°F) (with ~5% water)	7.85 lb
APHA color	<20
Coefficient of expansion, 20 to 90°C (68 to 194°F)	0.00096°C
Flash point, Setflash closed cup	76.7°C (170.1°F)
Vapor pressure@20°C (68°F) mm Hg/Pascal	0.34 / 45.33
Freezing point (with ~5% water)	-2°C (28°F)
Surface tension, neat in 10% aqueous solution	36-38 dynes/cm ~58 dynes/cm
pH of 0.1 M aqueous solution @ 20°C (68°F)	11.3
pKa @ 25°C (77°F)	-9.82
Refractive index, n_d @ 20°C (68°F)	1.4568

Uses

LATEX EMULSION PAINTS: AMP is a very efficient co-dispersant for pigments. In addition, AMP contributes pH stability, low odor, and anticorrosive properties, as well as promoting acceptance of colorants.

POLYETHYLENE AND WAX: AMP is an effective emulsifier by either normal emulsification techniques or those requiring pressure.

WATERBORNE COATINGS: AMP is a very efficient amine for neutralizing the carboxylic acid moieties in acid-functional resins to make them suitable for use in water-borne coatings and other aqueous applications. Such coatings formulations exhibit higher gloss and greater water resistance than do formulations based on other neutralizing amines.

BOILER-WATER SYSTEMS: Corrosion in boiler-water systems can be controlled successfully by use of AMP as the amine additive to remove CO₂.

METALWORKING FLUIDS: AMP is a high performance alkanolamine, proven as a multifunctional additive for metalworking fluids. It is a highly efficient alkalinity enhancer which also provides corrosion inhibition properties. It is resistant to microbial degradation and does not leach cobalt from carbide tooling. As an added feature, AMP enhances the performance of triazine biocides while reducing levels of airborne formaldehyde. AMP does not contribute to ammonia release as do some other amines.

PERSONAL CARE: AMP is compatible with virtually all fixative resins. Its high base strength and low molecular weight allow formulators to use significantly less AMP for resin neutralization. It can also be used to neutralize Carbomer resins, in emulsification together with stearic acid and to make amides and other derivatives used as cosmetic ingredients (CTFA/INCI designation: Aminomethyl propanol).

AQUEOUS SOLUTIONS: AMP also functions in dilute aqueous solutions containing small amounts of formaldehyde to scavenge that which otherwise might be released to the atmosphere.

Technical bulletins giving detailed suggestions on the uses of AMP are available. Some applications have specific regulatory requirements; please check with your ANGUS representative regarding appropriate product grades for your use.

FDA Clearances

AMP possesses the following FDA clearances. Please check with your ANGUS representative regarding appropriate product grades for your use.

CFR 175.105 lists AMP among substances cleared for use as components of food packaging adhesives (AMP is designated as aminomethylpropanol in the regulation).

CFR 176.170 and 176.180 — AMP is cleared for use as an indirect food additive for use as a pigment dispersant at levels not to exceed 0.25% by weight of pigment. The resulting dispersion may be used to coat paper which will contact fatty, dry, or aqueous foods in room temperature, refrigerated, or frozen storage.

CFR 175.300 lists substances cleared for use as components in resinous and polymeric coatings intended for use in contact with food. AMP is listed as a permissible catalyst for modification of triazine-formaldehyde resins in paragraph (b)(3)(xiii)(a) of this section. The FDA has identified AMP by the ambiguous name "methylpropanolamine". The resins and coatings cleared under Section 175.300 have been cleared by cross reference for use as provided in the following sections:

CFR 175.380 Xylene-formaldehyde resins condensed with 4,4'-isopropylidenediphenol-epichlorohydrin epoxy resins

CFR 175.390 Zinc-silicon dioxide matrix coatings

CFR 177.1210 Closures with sealing gaskets for food containers

CFR 177.2260 Filters, resin-bonded

AMP has also received BFR (Bundesinstitut für Risikobewertung) approval under Recommendation XXXVI "production aid as dispersant and flotation agent in the manufacture of paper and board for food contact use."

The information here is for use as a general guideline. Uses are subject to good manufacturing practices and any limitations that are a part of the regulations. The regulations should be consulted for complete details. Specific regulations will be reviewed upon request. The final responsibility is, however, up to the user who should consult legal counsel.

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 contact your ANGUS representative at the numbers provided in this document. When considering the use of any ANGUS product in a particular application, review the latest Safety Data Sheet to ensure that the intended use is within the scope of approved uses and can be accomplished safely. Before handling any of the products, obtain available product safety information including the Safety Data Sheet(s) and take the necessary steps to ensure safety of use.

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