

AMP-95™ 95% 2-AMINO-2-METHYL-1-PROPANOL SOLUTION

AMP-95™ is the product name under which ANGUS markets 2-amino-2-methyl-1-propanol containing 5% added water. This colorless, mobile liquid with a relatively low viscosity remains liquid at temperatures at temperatures above -2°C to permit easy handling.

Typical properties^(a)

Neutral equivalent.....	93-97
Water (max.).....	5.8% by wt.
Color (max.).....	20 APHA
Molecular weight (calc.).....	89.1
Specific gravity at 25/25°C.....	0.942
Viscosity at 25°C.....	147 mPa•s
Viscosity at 10°C.....	561 mPa•s
Coefficient of Expansion, 20 to 90°C	0.00096/°C
Flash Point, Tag Closed Cup	83°C
Flash Point, Pensky-Martens Closed Cup.....	87°C
Vapor pressure at 20°C.....	~319 hPa
Freezing point.....	-2°C
Surface Tension, neat.....	36-38 mN/m
Surface tension at 10% aqueous solution.....	~58 mN/m
pH of 0.1 M aqueous solution at 20°C.....	11.3
pKa at 25°C.....	9.75
Refractive Index, nD, at 20°C	1.4568

^(a)Values shown are typical properties and are not to be considered product specifications. Test methods available upon request.

Product Benefits

- Efficient amine for neutralization of acid-functional ingredients (resins, corrosion inhibitors, etc.)
- Acts as a co-dispersant for particulate systems
- Component of powerful anionic emulsifier systems
- Acts as a formaldehyde scavenger
- Corrosion inhibitor for steam-condensate lines
- Enables formulation of metalworking fluids
metalworking fluids with extended fluid longevity
- Useful raw material for synthesis applications
- Multiple food contact approvals
- In-can corrosion protection in variety of applications

Uses

Latex emulsion paints

AMP-95 is a very efficient co-dispersant for pigments, and contributes pH stability, low odor, and anticorrosive properties; furthermore, it promotes acceptance of colorants.

Polyethylene and wax

AMP-95 is an effective emulsifier for polyethylene and wax by either the normal emulsification techniques or those requiring pressure.

Waterborne coatings

AMP-95 is a very efficient amino alcohol for neutralizing acid-functional resins to make them suitable for use in waterborne coatings and other aqueous applications. Such coatings formulations exhibit higher gloss and greater water resistance than do formulations based on other neutralizing amino alcohols.

Boiler water systems

Corrosion in boiler water systems can be controlled successfully by use of AMP-95 as the amino alcohol additive to remove dissolved CO₂.

Metalworking fluids

AMP-95 is a high-performance, multifunctional additive for metalworking fluids. It is a highly efficient neutralizer and pH adjuster for use in fluid concentrates and for tank-side pH control. The use of AMP-95 will often improve the biostability of these fluids, which can result in longer fluid life. AMP-95 is one of the least aggressive amines toward the cobalt binder in carbide tooling, compared to other typically used commodities AMP-95 also enhances the performance of certain approved biocides, while reducing levels of airborne formaldehyde. AMP-95 does not contribute to ammonia release as do other amines.

Aqueous solutions

AMP-95 functions in dilute aqueous solutions containing small amounts of formaldehyde to scavenge that which otherwise might be released to the atmosphere.

Regulatory Status

AMP-95 possesses the following U.S. Food and Drug Administration (FDA) clearances:

- **Section 175.105** lists AMP among substances cleared for use as components of food packaging adhesives (AMP is designated as aminomethylpropanol in the regulations).
- **Sections 176.170 and 176.180** AMP is cleared for use as an indirect food additive for use as a pigment dispersant at levels up to 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.
- **Section 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:

- **Section 175.380** Xylene-formaldehyde resins condensed with 4,4'-isopropylidenediphenol-epichlorohydrin epoxy resins
- **Section 175.390** Zinc-silicon dioxide matrix coatings
- **Section 177.1210** Closures with sealing gaskets for food containers
- **Section 177.2260** Filter, resin-bonded

AMP has also received **BgVV approval under Recommendation XXXVI** "Production aid as dispersant and flotation agent in the manufacture of paper and board for food contact use."

Packaging and Storage

AMP-95 is not classified as hazardous under the European Agreement concerning International Carriage of Dangerous Goods by Road (ADR). AMP-95 does not meet any of the defined criteria for "dangerous goods" contained in the International Transportation Regulations

for Air (ICAO Technical Instructions) or for Ocean Transport (IMDG Code).

Shipping containers ^(b)	Net wt.	Gross wt.
Unlined steel drums	195 kg	213 kg
Intermediate bulk containers	950 kg	1003 kg

AMP-95 is corrosive to copper, brass, and aluminum. Contact with these metals should be avoided. Ordinary iron and steel generally are unaffected by this product and are the recommended materials of construction. AMP-95 is a combustible liquid with a relatively high flash point and a low vapor pressure at ordinary temperatures. These properties cause no problems with respect to storage and handling. Do not store near heat or flame.

AMP-95 should not be exposed unnecessarily to the atmosphere, since it can pick up moisture and carbon dioxide due to its amine functionality. Evidence of this may be detected by a weight gain, a lower alkalinity equivalency than when first received, or the formation of cloudy solutions when dissolved in alcohol.

^(b)The shipping containers listed meet UN 1A1 packaging specifications. AMP-95 is also shipped in bulk in tank cars or tank trucks.


Chemical Inventories

Chemical Name	CAS No.	Concentration
2-Amino-2-methyl-1-propanol	124-68-5	>= 89.0 %
2-Methylamino-2-methyl-1-propanol	27646-80-6	<= 7.0 %
Water	7732-18-5	5.0%

EINECS No. 204-709-8

Product Safety

When considering the use of any ANGUS product in a particular application, review the latest Safety Data Sheet (SDS) 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.

Contact Information 	North America +1-844-474-9969	Western Europe +33 (0) 1 34 23 31 60	Middle East and Africa +33 (0) 1 34 23 31 60	Greater China +65 8686 5712	Southeast Asia and New Zealand +65 8686 5712
	Latin America +55 (11) 94245-5307	Central and Eastern Europe +33 (0) 1 34 23 31 60	Indian Subcontinent +000-800-440-5098	Japan and Korea +65 8686 5712	
angus.com	<small> ©™Trademark of ANGUS Chemical Company Notice: No freedom from infringement of any patent owned by ANGUS or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where ANGUS is represented. The claims made may not have been approved for use in all countries. ANGUS assumes no obligation or liability for the information in the document. References to "ANGUS" or the "Company" mean the ANGUS Chemical Company legal entity selling the products to Customer unless expressly noted. NO WARRANTIES ARE GIVEN: ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. Document last updated on: March 27, 2017. </small>				