

Key Performance Advantages

- Superior buffering properties
- Excellent color stability
- Low odor



Personal Care

NEUTRALIZING AMINES

For Personal Care Ingredients

ANGUS Chemical Company primary amino alcohols provide valuable benefits as neutralizing agents for acid- functional cosmetic raw materials when compared with other alkaline materials. ANGUS amino alcohols show better pH buffering properties and alcohol compatibility when compared to inorganic bases and also demonstrate excellent color stability.

In addition, the ANGUS products offer universal cosmetic acceptability, low odor levels and primary-amine functionality.

The key application areas for these materials are hair styling and skin products.

2-Amino-2-Methyl-1-Propanol (AMP) in Hair Styling Products

For decades, AMP™ has been the neutralizer of choice for anionic film-forming hair-fixative resins. This strong base is available in two forms:

- **Water-Containing AMP-ULTRA™ PC 2000** (a liquid) for use in aqueous/low VOC products
- **Water-Free AMP ULTRA™ PC 1000** (a semi-solid) for use in non-aqueous products

AMP offers water- and alcohol-solubility, as well as an excellent toxicity profile. Its relatively low molecular weight permits less amine to be used for neutralization than is required for most other cosmetic-grade amines and it can aid in plasticizing film-forming resins. Although not totally non-volatile, its low vapor pressure results in low odor and it is VOC-exempt according to the U.S. EPA. AMP provides superior color stability versus other amines and possesses primary-amine functionality. It offers its unique utility in aerosol spray products, pump sprays, gels and mousses.

Applications

- Used as an alkaline neutralizer/solubilizer for anionic hair-fixative resins
- Can be used by formulator or resin supplier
- Recommended by resin manufacturers in suggested starting formulations
- Adds to corrosion protection in water-containing aerosol products
- Proven performance for more than 30 years
- Worldwide availability

Skin Products

AMP (including aminomethyl propanol) is a strong base that is completely alcohol- and water-miscible. It demonstrates low volatility and low vapor pressure. The toxicity of AMP is mild enough to permit its use in personal care and cosmetic applications.

AMPD™ (including aminomethyl propanediol) has a long successful history of worldwide use in neutralizing and solubilizing acid-functional compounds in skin care as well as hair care preparations. It is included in hypoallergenic and eye-area cosmetics.

TRIS AMINO™ (including tromethamine), chemically known as tris(hydroxymethyl)-aminomethane, is well-known in cosmetic formulations and products as a mild alkaline buffer and solubilizer. It is the neutralizer of choice for carbomers, when used in thickened or gelled topical preparations. TRIS AMINO is pharmacopoeia-listed world-wide (as tromethamine or trometamol).

Comparison on Neutralizing Amines


Product	pKa (20°C)	Molecular Weight
AMP	9.82	89
MEA	9.44	61
MIPA	9.40	75
NH ₃ (29.4%)	9.24	17
DEA	8.88	105
AMPD	8.76	105
DIPA	8.70	133
TRIS AMINO	8.03	121
TIPA	7.86	191
TEA	7.77	149

Applications

- Neutralizers/solubilizers for carbomer thickeners/gellants
- Fatty-acid soaps are useful in oil-in-water emulsification
- Neutralizers/solubilizers for phenylbenzimidazole sulfonic acid active sunscreen
- AMP/carbomer combination produces stable high-alcohol aqueous gels
- Can be used in creation of other personal care ingredients
- Provide pH buffering/stabilizing action
- May assist in particle-dispersion stabilization

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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