

## Key Performance Advantages

- Effective buffer and mild neutralizer
- Soluble in water and alcohol
- Low toxicity



Personal Care

# ULTRA PC™ AMINO ALCOHOLS

## Globally Compliant Neutralizer for Personal Care and Cosmetic Products

With more than 50 years experience in amino alcohol development, ANGUS has designed the ULTRA PC™ portfolio of amino alcohols to meet your global compliance needs: AMP-ULTRA™ PC Neutralizing Amine, AMPD ULTRA PC™ Neutralizing Amine and TRIS AMINO™ ULTRA PC Tromethamine.

With a wide range of base strengths, the ULTRA PC range of amino alcohols set a new quality benchmark as preferred neutralizing agents, providing compliance with the recent European Union and ASEAN Cosmetic Directive rulings on secondary amine and nitrosamine content of raw materials used in the manufacture of cosmetics and personal care products.

## AMP-ULTRA PC

- As of May 2015:
  - Compliant with EU Cosmetics Directive (EC) No. 1223/2009, the recast for the EU Cosmetics Directive 76/768/EEC and Amendments
  - China Food and Drug Administration “Safety and Technical Standards for Cosmetics” compliant
  - 2008 ASEAN Cosmetic Directive compliant
  - CTFA/INCI listed in USA and Japan (aminomethyl propanol)
  - ISO 9001:2000 certified
- Three commercial grades to meet all processing needs
  - AMP-ULTRA PC 1000 (anhydrous)
  - AMP-ULTRA PC 2000 (5% water)
  - AMP-ULTRA PC 3000 (11% water)
- Batch size up to 24 MT
- Standard packaging 190 kg drums; AMP-ULTRA PC 2000 and 3000 also available in 950kg containers
- Global supply capability

## Typical Properties

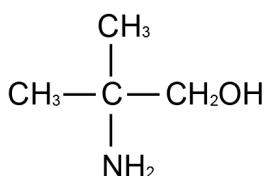
The following are typical physical/chemical properties of AMP-ULTRA PC. They are not to be considered product specifications.

Appearance	Colorless solid or liquid	Consistent and characteristic odor
Assay on a dried basis, % by weight (minimum)	99.0	
Water content, % by weight (maximum)	0.2	
APHA color, 20% aqueous solution (maximum)	20	
Secondary amines, anhydrous, % weight	<0.5	
Nitrosamine content, ppb	<50	

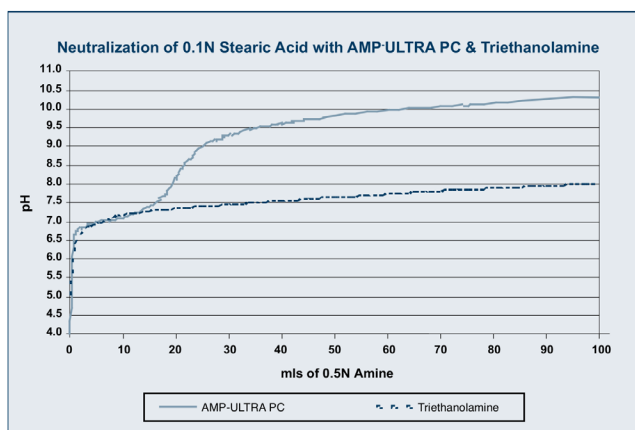
## Application

With its primary amine functionality, water- and alcohol-solubility and excellent toxicity profile, AMP-ULTRA PC is ideal for:

- Aerosol spray products
- Hair fixatives
- Pump sprays
- Styling gels and mousses
- After-sun coolers
- Hand sanitizers
- Sunscreen lotions



The high pKa value (9.72 at 20°C) and low molecular weight of AMP-ULTRA PC typically permits one third less amine to be used for neutralization than is required for most other cosmetic-grade amines. AMP-ULTRA PC provides superior color stability versus other amines and is compatible with virtually all fixative resins. AMP-ULTRA PC is available as an anhydrous solid (AMP-ULTRA PC 1000), a 95% concentration aqueous solution (AMP-ULTRA PC 2000) or an 89% concentration aqueous solution (AMP-ULTRA PC 3000).



## AMPD-ULTRA PC

- As of May 2015:
  - European Cosmetic Directive 76/768/EEC and Amendments compliant
  - China Food and Drug Administration “Safety and Technical Standards for Cosmetics” compliant

- 2008 ASEAN Cosmetic Directive compliant
- CTFA, including listing in USA and Japan (Aminomethyl propanediol)
- ISO 9001:2000 certified

- Batch size up to 2300 kg
- Standard packaging 20 kg drums
- Dependable, global supply capability

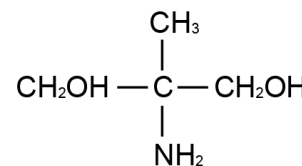
## Typical Properties

The following are typical physical/chemical properties of AMPD ULTRA PC. They are not to be considered product specifications.

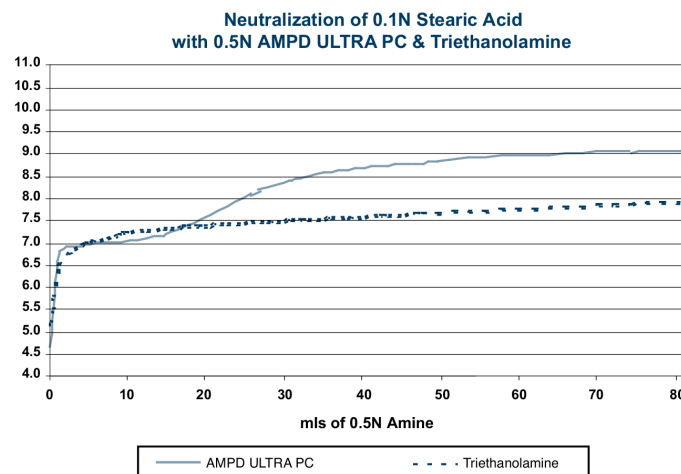
Appearance	White, crystalline powder
Purity, anhydrous, % weight (minimum)	99.0
Water content, % by weight (maximum)	0.5
APHA color, 20% aqueous solution (maximum)	20
Secondary amines, anhydrous, % weight	0.5
Nitrosamine content, ppb	<50

A primary amine with excellent water- and alcohol-solubility and low toxicity profile, AMPD ULTRA PC is ideally suited for use in:

- Cosmetic creams and lotions
- Hair fixatives
- Hair dyes
- Hypoallergenic cosmetic products
- Eye-area cosmetics



With a pKa value of 8.76 (at 20°C), AMPD ULTRA PC has a base strength intermediate between AMP-ULTRA PC and TRIS AMINO ULTRA PC and is an efficient primary amine neutralizing agent for acid-functional raw materials used in cosmetic and personal care products. Fatty-acid soaps of AMPD ULTRA PC are ideally suitable as emulsifiers for high-quality cosmetic creams and lotions, imparting desirable consistency and stability to emulsions without phase separation or yellowing/color development upon heat-aging.



# TRIS AMINO ULTRA PC

- As of May 2015:
  - European Cosmetic Directive 76/768/EEC compliant
  - China Food and Drug Administration “Safety and Technical Standards for Cosmetics” compliant
  - 2008 ASEAN Cosmetic Directive compliant
  - CTFA, including listing in USA and Japan (Tromethamine)
  - ISO 9000:2000 certified
- Reliable, consistent, cGMP batch production process
- Batch size up to 1800 kg
- Standard packaging 25 kg drums
- Dependable, global supply capability

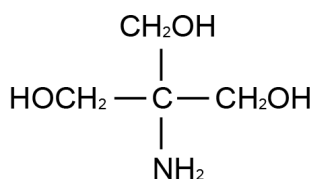
## Typical Properties

The following are typical physical/chemical properties of TRIS AMINO ULTRA PC. They are not to be considered product specifications.

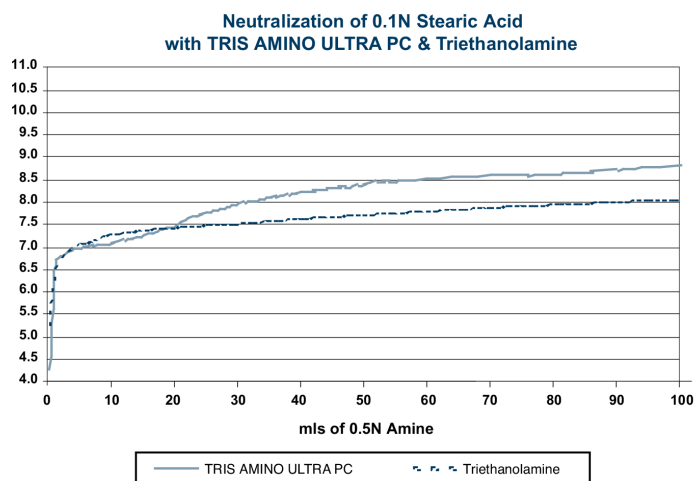
Appearance .....	White, crystalline powder
Purity, anhydrous, % weight (minimum) .....	99.0
Water content, % by weight (maximum) .....	0.2
APHA color, 20% aqueous solution (maximum) .....	20
Secondary amines, anhydrous, % weight .....	<0.5
Nitrosamine content, ppb .....	<50

With its primary amine functionality, water- and alcohol-solubility and low toxicity, TRIS AMINO ULTRA PC is ideal as a buffer, solubilizer or neutralizer in:

- Skin treatment gels
- Sun blocks and sunscreen lotions
- Detergent cleansing gels
- Spray-on lotions
- Cosmetic preparations



The lower equivalent weight and higher pKa value (8.03 at 20°C) of TRIS AMINO ULTRA PC makes it more efficient than the tertiary amine triethanolamine (TEA) in developing alkaline pH and neutralising acid-functional ingredients. TRIS AMINO ULTRA PC also provides superior color stability versus other amines and will not cause yellowing or darkening in skin-care preparations upon storage.



## 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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