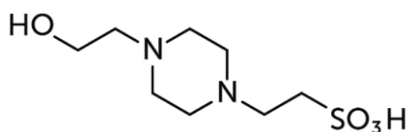


HEPES ULTRA PC™

Multifunctional Additive for Personal Care Applications

HEPES ULTRA PC™ is a multifunctional additive for personal care applications. HEPES ULTRA PC™ is a zwitterionic buffer and one of Good's 12 buffers. HEPES ULTRA PC™ is an effective pH stabilizer with a useful pH buffering range from 6.8 to 8.2. HEPES ULTRA PC™ has good water solubility, heat resistance, low cell membrane impermeability, and high stability against oxidation-reduction reactions and UV light. HEPES ULTRA PC™ can be used in combination with other ingredients to support the quality and performance of skincare and cosmetics products. In addition, HEPES ULTRA PC™ can promote the absorption of effective ingredients in skin care.



4-(2-hydroxyethyl)-1-piperazineethanesulfonic Acid
 INCI: Hydroxyethylpiperazine Ethane Sulfonic Acid

TYPICAL PROPERTIES^(a)

Appearance.....	White Solid
Purity, wt%.....	>99
Secondary amines, wt%.....	<0.5
Nitrosamine content, ppb.....	<50
Molecular weight (g/mol).....	238.3
Water, wt% (max).....	0.5
pK _a @ 25°C.....	3 and 7.45
Solubility in water, 20°C.....	Miscible

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

PRODUCT BENEFITS

- Can be used in combination with other ingredients to support the quality and performance of skincare and cosmetics products.
- Favorable pK_a for use in physiological formulations.
- Consistent acid-base dissociation constants.
- HEPES buffer has been referenced in literature to stabilize functional acidic ingredients such as glycolic acid, AHAs (alpha hydroxy acids) and BHAs (beta-hydroxy acids) in skin brightening or depigmentation formulations.

USES

HEPES ULTRA PC™ can be used in multiple personal care and color cosmetics applications, including, but not limited to:

- Skin creams and lotions
- Toners
- Serums
- Cleansers
- Sunscreens

REGULATORY STATUS

All Advancion ULTRA PC™ grade products are compliant with the industry's most stringent standards and regulations worldwide, including:

- U.S. Food, Drug and Cosmetic Act
- European Union Regulation No. 1223/2009
- ASEAN 2008 Cosmetic Directive (annex updated March 2013)
- Brazil ANVISA Mercosur Resolution on Personal Hygiene Products and Cosmetics
- Mexico: not included in the List of Prohibited and Restricted Substances in Perfumes and Cosmetics

PACKAGING AND STORAGE

HEPES ULTRA PC™ is not classified as hazardous under the European Agreement concerning International Carriage of Dangerous Goods by Road (ADR). HEPES ULTRA PC™ 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.
Plastic bottle	1 kg	1.09 kg
Plastic pail	5 kg	5.60 kg
Plastic pail	12 kg	13.44 kg
Plastic pail	25 kg	28.00 kg

Store in original container and in a cool, dry place. Keep container tightly closed when not in use.

CHEMICAL COMPOSITION

Chemical Name	CAS No.
4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid	7365-45-9
EINECS No.	230-907-9

PRODUCT STEWARDSHIP

Through our investments in application and new product development, we have a deep understanding of where our chemistries are (and can potentially be) used to actively address global trends in Life Sciences, Beauty and Personal Care, and other essential industries to help make our lives healthier, and more sustainable and comfortable. To help ensure that Advancion products are not used in ways for which they are not intended, Advancion personnel will assist customers in dealing with environmental and product safety considerations. 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. For assistance, product Safety Data Sheets, or other information, please visit advancionsciences.com or contact us at info@advancionsciences.com.

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