

AMPHISOL[®] A

*The right choice for “medical”
products at a low pH level*

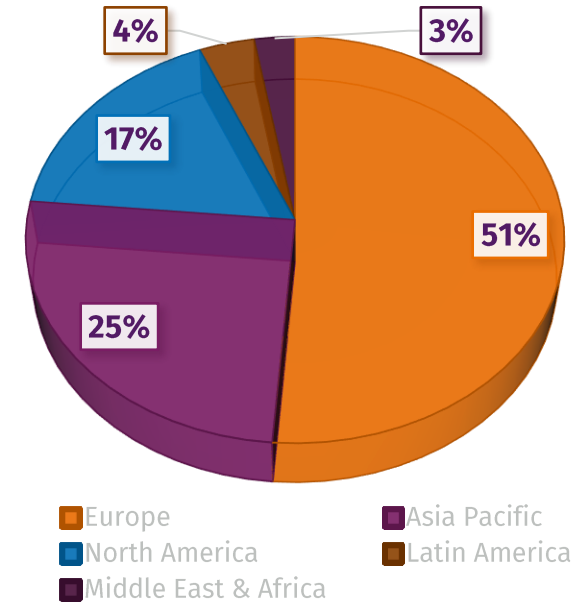


Master Presentation

NEW application for AMPHISOL® A

Dermatological products

- Constant need for speciality cosmetic and dermatological products containing α -hydroxy acids
- Europe is the dominating market after APAC and NAA
- Key types are leave-on face care products (min 80%) and cleanser products (up to 20%)



GNPD search with full text search matches exfoliant in the Sub-Category Face/Neck Care and Date Published is within the last three complete years and Ingredient Search matches one or more of [Glycolic Acid, Lactic Acid] as the Ingredients

NEW application for AMPHISOL® A

Facial exfoliation is quickly becoming a daily skincare practice

- Gentler daily exfoliants take over traditional scrubs and peels and can replace or support aggressive treatments by dermatologists
- These exfoliants could be toners, serums and overnight creams meeting consumers' needs and will increase usage frequency with lesser irritation
- Additional potential as a specialised at-home treatment.

75%

of female South Korean consumers aged in their 20's and 30's regularly use facial peels

Leave-in exfoliating skincare with beauty functionality



10-minute exfoliating serum

The Ordinary: AHA 30%+ BHA 2% Peeling Solution



Exfoliating overnight mask

Glow Recipe: Watermelon Glow Sleeping Mask



Chemical peel pads for daily use

Peter Thomas Roth: PEPTIDE 21 AMINO ACID EXFOLIATING PEEL PADS

NEW application for AMPHISOL® A

Do YOU have ...

- Dry and flaky skin up to xerosis or ichthyosis,
- Uneven skin tone up to melasma,
- Acne-prone skin and/or acne scars ?

➔ **SOLUTION BY THE USE** of alpha hydroxy acids (AHAs) formulated in specialty or dermatological products such as facial cleansers, peels, and leave-on creams can help.

THE WHY is that most effective and well-researched AHAs are glycolic acid and lactic acid. Malic acid, citric acid, and tartaric acid may also be effective, but are considered less stable and less skin-friendly. AHAs in concentrations greater than 4% and in a base with an typical acid pH of 3 to 4 work exfoliant. Products at such a low pH are not easy to stabilize, but AMPHISOL® A can make it happen 😊



NEW application for AMPHISOL® A

Cosmetic application forms at low pH value:

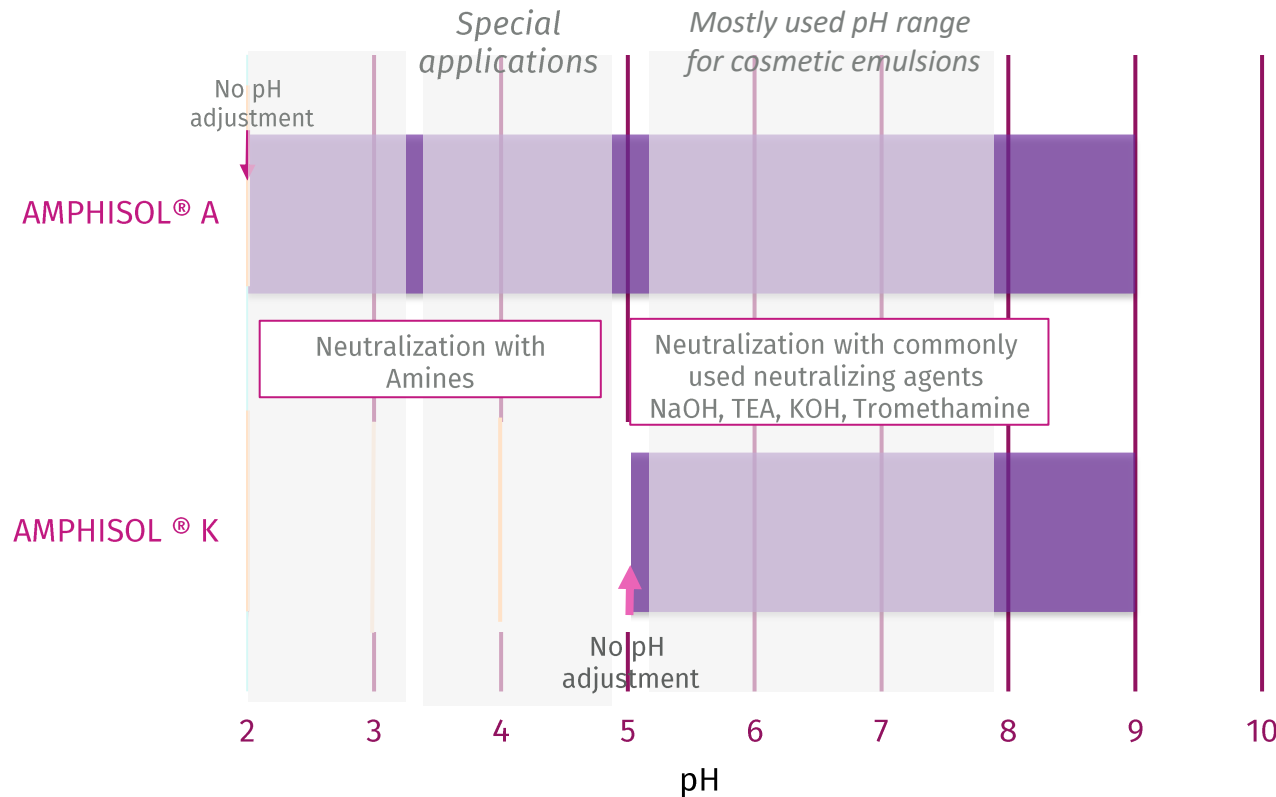
- Tanning products: ~pH 4-4.5
- Anti-Acne products: below pH 4.5; mainly pH 4.0-4.5
- AHA based products: mostly adjusted between 3-4

Commonly used actives in low pH products:

- Salicylic acid (up to 2%),
- Zinc PCA (~1%),
- Glycolic acids and alpha hydroxy acids (AHA): up ~10% for treating skin wrinkled/aged by UV
- AHA: up to 50% for peeling and special acne products

pH Compatibility

Emulsifiers in general have pH optimums where to stabilize the best. But broad pH compatibility is of advantage for extensive usage.



Testing procedure

- Basic formulation to test emulsifier performance
- Emulsifiers at 2%
- Cetyl Alcohol at 2.0%
- Neutralization done with different neutralizing agents at defined pH values
- Emulsion integrity and crystal formation evaluated after 8 weeks at 40°C

**AMPHISOL® K shows broad pH compatibility,
AMPHISOL® A even covers cosmetic application < pH 5**

AMPHISOL® A – NEW concept

Extra light emulsion for acne prone and oily skin with SPF 50 at low pH

Phase	Ingredients	INCI Name	% w / w	Supplier
A	Sympatens-O/120G (=Arlacel 165)	GLYCERYL STEARATE, PEG-100 STEARATE	2.00	100405
	AMPHISOL® A	CETYL PHOSPHATE	1.50	100288
	Lanette 18	STEARYL ALCOHOL	1.50	100037
	PARSOL® 1789	BUTYL METHOXYDIBENZOYLMETHANE	5.00	100288
	PARSOL® Shield	BIS-ETHYLHEXYLOXYPHENOL METHOXYPHENYL TRIAZINE	2.00	100288
	PARSOL® 340	OCTOCRYLENE	5.50	100288
	PARSOL® EHS	ETHYLHEXYL SALICYLATE	5.00	100288
	PARSOL® SLX	POLYSILICONE-15	3.00	100288
	PARSOL® HMS	HOMOSALATE	10.00	100288
	X-Tend 226	PHENETHYL BENZOATE	2.00	100184
	Cetiol OE	DICAPRYLYL ETHER	2.00	100037
	Dow Corning 200 Fluid 100 CST	DIMETHICONE	2.00	100099
	VALVANCE™ TOUCH 210	SILICA	1.50	100288
	Euxyl PE 9010	PHENOXYETHANOL, ETHYLHEXYLGLYCERIN	1.00	100444
	Keltrol CG-T	XANTHAN GUM	0.20	100400
B	WATER DEM.	AQUA	36.90	999999
	Edeta BD	DISODIUM EDTA	0.10	100037
	Dekaben CP	CHLORPHENESIN	0.20	100665
	Zemea Propanediol	PROPANEDIOL	4.00	101015
C	ALPAFLOR® ALP-SEBUM	GLYCERIN, AQUA, CITRIC ACID, POTASSIUM SORBATE, EPILOBIUM FLEISCHERI EXTRACT	1.00	100288
	Sepiplus 400	POLYACRYLATE-13, POLYISOBUTENE, POLYSORBATE 20	0.50	100313
	PARSOL® Max	Methylene Bis-Benzo-triazolyl Tetramethyl-butyl-phenol (nano)	12.00	100288
D	Trizma Base 30% solution	TROMETHAMINE, AQUA	1.10	999999

Please note DSM formulation disclaimer at the end of the presentation

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AMPHISOL[®] A- Formulation guidelines

Important to know

- AMPHISOL[®] A dissolves completely in the heated oil phase. Heat up AMPHISOL[®] A to 85-90°C to ensure its best long-term stability.
- When combining water and oil phase: both the water or the oil phase can be put in first and the other phase can be added with or without stirring.
- After combining both phases we recommend a homogenization step
- AMPHISOL A is not sensitive to shear forces and doesn't need strong shearing. But adapt shear force accordingly to production scale and shearing equipment.
- During cooling keep stirring.
- We recommend a second but shorter homogenization step below 40°C.
- Stir while cooling down further.
- AMPHISOL[®] A will form during the emulsification liquid crystalline structures in the oil phase and at the interphase of oil and water droplets in the first 24 - 48 hours
- The formulations need 24-48h for ripening and to adjust themselves to the final viscosity



AMPHISOL® A - Formulation guidelines

Neutralization and pH range

- AMPHISOL® A is the non-neutralized Cetyl Phosphate. The resulting pH of a standard emulsion based on AMPHISOL® A without any base is around pH 2-2.5.
- When neutralized AMPHISOL® A acts as an anionic emulsifier. The pH can easily be adjusted to the desired value with any neutralizing agent (NaOH, KOH, Triethanolamine, Tromethamine, AMP, etc.).
- The neutralizing agent can be added during the manufacturing process at any time although we recommended adding it before one of the homogenization steps. The neutralizing agent can be even added (as a 10% premix in water) to the hot oil phase containing Amphisol® A shortly before combining with the water phase.
- AMPHISOL® A forms stable emulsion in a pH range from 2-8 when neutralized with Amines.
- When neutralized with strong bases like KOH or NaOH the preferred pH range is 5-8.



Knowing a few tricks, AMPHISOL® A is easy to handle and delivers very stable emulsions

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