SCHUTZENCOL- NH2

SCHUTZENCOL- NH2 is a sustainable, bio-based **personal care** additive with wide application possibilities.

It is based **on Tamarindus Indica Seed Polysaccharide** and can be used in **Hair care** & **Skin care** formulations.

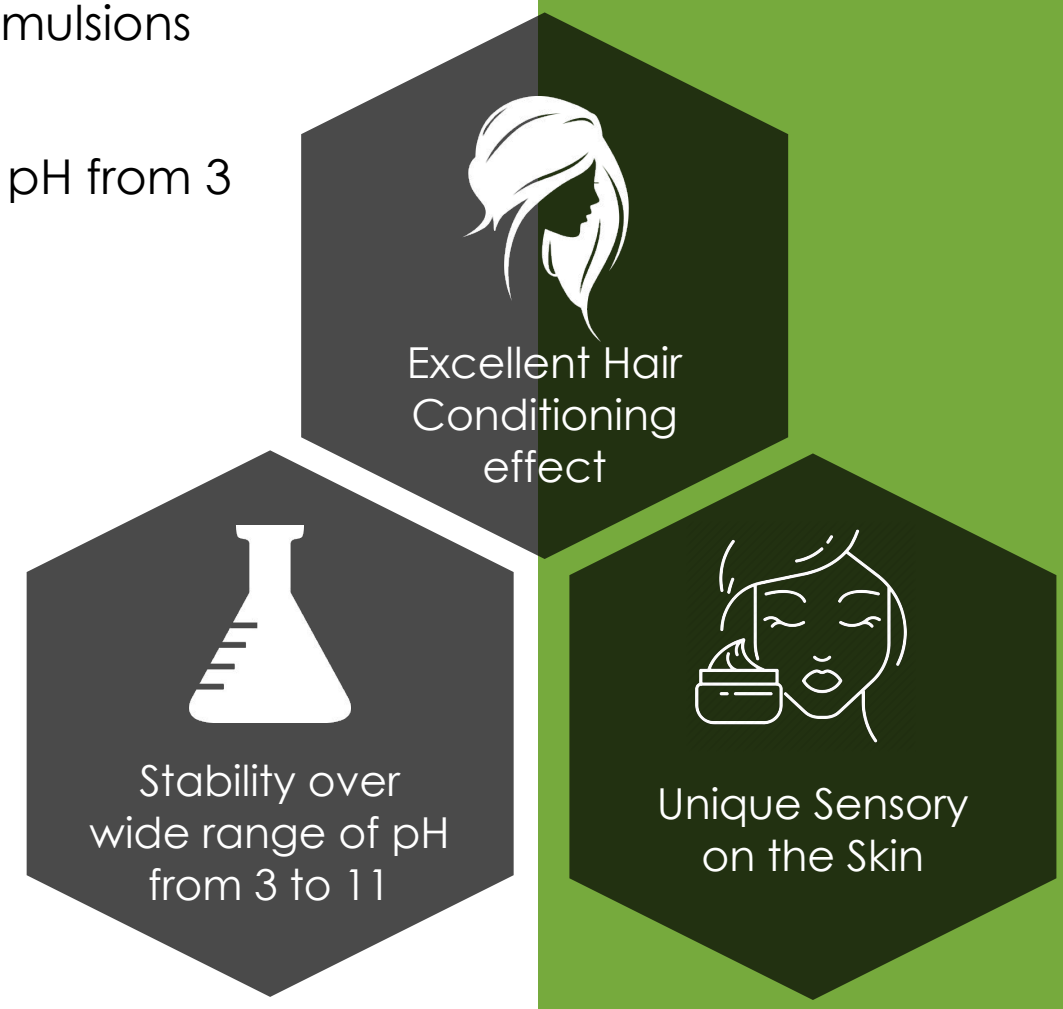
- SCHUTZENCOL- NH2 is a high molecular weight Polysaccharide in powder form with an off- white appearance, with a branched chain polymeric group based on Xylose & Galacto Xylose.
- Due to its pseudo anionicity it is quickly soluble in water; stable in anionic surfactants and can be used in hair shampoos and conditioners.
- Owing to its natural nitrogen content (typically > 2.1%), it can easily and effectively replace Cationic Guar (Guar Hydroxypropyltrimonium chloride) as well as Polyquaternium-10 from such formulations, With the added advantage of being QAC Free.
- Due to its high molecular weight, it possesses excellent moisture regulating properties and therefore it can potentially replace Hyaluronic Acid from skin care formulations.
- Ease of formulation is achieved by hydrating the polymer at neutral pH followed by addition of citric acid only after full hydration is achieved. It may be used in Opaque formulations.

Highly Sustainable & Biodegradable

SCHUTZENCOL- NH2

KEY FEATURES OF SCHUTZENCOL- NH2

- High Nitrogen Content.
- Excellent Hair Conditioning effect.
- Superior Dry combability.
- Psuedo anionic character to enhance stability in surfactant systems.
- Excellent pseudo plastic flow rheology.
- Exhibits ease of application & improved spread ability.
- Excellent stabilizer for o/w emulsions at increased dosages.
- Stability over wide range of pH from 3 to 11.
- Unique sensory feeling.
- Biodegradable meeting stringent OECD Guidelines.



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WHY USE SCHUTZENCOL- NH2?

- SCHUTZENCOL- NH2 differentiates itself from the market by being a novel polymer system, The patented reaction pathway doesn't utilise Ethylene Oxide Or propylene oxide as well as Quaternary ammonium compound. These reagents are known to have very high environmental & human toxicity.

- SCHUTZENCOL-NH2 is an amphoteric polymeric system, It exhibits high nitrogen content without using Quaternary ammonium compound, which represents itself as another big advantage for systems which require a cationic charge for performance.

- SCHUTZENCOL-NH2 is capable of doing so without a synthetic Quaternary group but by protonation of positive ion functional groups based on pH variability.

- The polymer is therefore highly sustainable, biodegradable and passes the stringent OECD guidelines which are generally difficult to comply with.

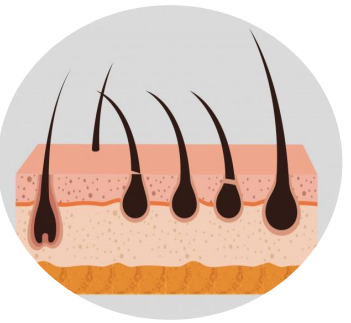
- Test for inherent biodegradability: OECD 302 B (Zahn-Wellens Test) 28 days: 90%

- Test for Ready biodegradability: OECD 301 F Manometric Respiratory test: 86%

SCHUTZENCOL- NH2

THE TAMARIND CIRCLE OF BENEFITS

Nitrogen content: >2.1 % (CHNS Analysis)



pH Neutral: 7 – 7.5

Total yeast and mold count: Typically less than 10 c.f.u/g

Total plate count: Typically less than 10 c.f.u/g

Naturality Rating: 3 (SCHUTZEN naturality index)

Room temperature soluble

OECD 301 F Manometric Respiratory test: 86%

OECD 302 B (Zahn-Wellens Test) 28 days: 90%

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ADVANTAGES TO FORMULATORS

- Claims such as “Natural, Sustainable, Bio-based” can be acquired.
- Claims such as Quaternary ammonium compound free, EO/PO Free.
- 100% Bio-degradable.
- Additional traction is provided for certifications such as COSMOS, vegan, vegetarian, cruelty free, no animal testing etc.
- Replacement of molecules such as PQ-10 & Cationic Guar is possible.
- Owing to the room temperature solubility, sustainable process development is possible.
- It has High compatibility with other generally used personal care ingredients.

No animal test.

100% Bio-degradable.

Highly compatible with Personal care products.

MOLECULAR WEIGHT OF SCHUTZENCOL-NH2

- Average Molecular weight of SCHUTZENCOL- NH2 is 2,98,598 Da
- Due to high molecular weight, it has excellent moisture holding and regulating properties
- Hence, it is an excellent conditioner and moisture regulator in skin care formulations and can be used as a replacement to Hyaluronic acid
- In case of hair care formulations, It provides excellent film forming ability due to its molecular weight.

SCHUTZENCOL- NH2

PARAMETER	SCHUTZENCOL-NH2
Appearance	Off White Powder
INCI Name	Carboxymethyl Tamarindus Indica Seed Polysaccharide
Ionic Character	Pseudo Anionic
pH In water	7-7.5
Nitrogen Content (%,CHNS Method)	Greater than 2.1%
Viscosity @4(%) (Brookfield) (20 Degree Celsius, 20rpm)	Appx 1800 cPs
Average Molecular Weight	2,98,598 Da
Solubility @Room Temperature (20 Degree Celsius)	Yes
Naturality of the product (5 being highest)	3
Total Plate Count	Max 300 c.f.u/g (Typically less than 10)
Total Yeast and Mold Count	Max 100 c.f.u/g (Typically less than 10)
Test for inherent Biodegradability: OECD 302 B (Zahn-Wellens Test) 28days	90%
Test for ready Biodegradability: OECD 301 F Manometric Respiratory test	86%