

## FACT SHEET

### PINEAPPLE (ANANAS COMOSUS)

#### PRODUCT OVERVIEW

Pineapple (*Ananas comosus*) supports skin health through its rich content of vitamin C and bromelain. Vitamin C boosts collagen production, enhancing skin firmness, while bromelain, a proteolytic enzyme, gently exfoliates dead skin cells, promotes cell turnover, and improves overall skin texture. These actions, combined with pineapple's antioxidant properties, help protect against free radical and sun-induced damage, reduce acne scars, and support skin hydration. Additionally, compounds in the pineapple peel, such as flavonoids and tannins, provide antibacterial benefits against both gram-positive and gram-negative bacteria, further enhancing its topical potential.

#### Features and Kinetics

- Optimal pH Range
- Proteolytic Mechanism
- Antibacterial Mechanism
- Bioavailability
- Anti-aging & Wrinkle reduction
- Antioxidant Mechanism
- Temperature Stability

#### Mechanism of Action

1. Collagen Boosting - Vitamin C stimulates collagen synthesis, improving firmness and elasticity.
2. Skin Hydration & Brightening - Improves moisture retention and reduces dark spots, scars, and uneven tone.
3. Proteolytic/Exfoliating Activity - Bromelain breaks down keratin bonds, removing dead skin cells and enhancing cell turnover for smoother, brighter skin.

#### Key Ingredients

- Pineapple Extract (bromelain enzyme)

#### Storage conditions

- Must be stored at 2-8 °C; do not freeze (ice crystals denature the enzyme).
- Protect from direct sunlight (use opaque or amber containers).
- Solutions should contain Preservatives.

#### Applications:

Bromelain is used in skincare as gentle exfoliant, in wound healing, and anti-aging/UV-Protection creams and its antioxidant effect, also it's anti-microbial make it useful in anti-acne products.