

# Crush preservative challenges with the power of raspberry

Using artificial intelligence and machine learning techniques, Ashland discovered raspberry ketone, which led to the development of Phyteq™ raspberry multifunctional. This natural antimicrobial has preservative-boosting and skin-mildness benefits, as well as a favourable biodegradability profile.

Consumers today associate natural and nature-identical ingredients with safety. They expect cosmetic products to be well-protected against contamination and to be mild to skin.

Phyteq raspberry multifunctional is based on raspberry ketone, a compound occurring in different plants and one that has been used for decades in traditional Chinese medicine and Ayurveda. As a globally-approved and readily-biodegradable multifunctional additive, it acts as preservative potentiator that protects a cosmetic product against spoilage. Its additional skin benefits make it an excellent choice for skin care products. It acts as strong antioxidant and free radical scavenger and helps to protect the elasticity of the skin. Phyteq raspberry is available in two variations, Phyteq raspberry N (natural) and Phyteq raspberry I (nature-identical). It can be sourced in South Africa from IMCD.

#### GREAT FOR SKIN CARE PRODUCTS

"Phyteq™ raspberry multifunctional furthers Ashland's innovations for plant-inspired clean beauty," says Andrea Wingenfeld, global marketing manager, Ashland. "The product

#### KEY FEATURES AND BENEFITS

##### 1. Phyteq™ raspberry addresses plant-inspired and clean beauty trends:

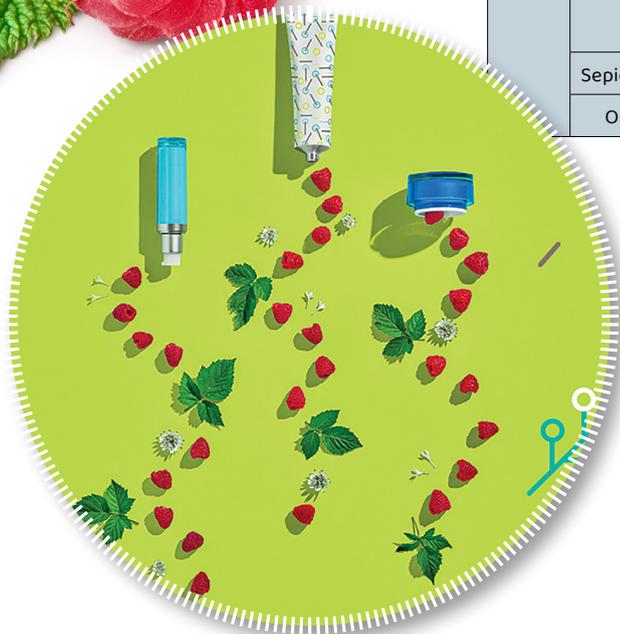
- INCI: Raspberry Ketone, which is recognised by consumers as 'natural'
- well-known and widely-cited benefits in health and nutrition
- readily biodegradable and globally compliant (including China)
- gentle on native skin flora.

##### 2. Antimicrobial protection and formulation benefits:

- low dosage – 0.5% to 1% provides a broad antimicrobial boosting effect
- wide pH applicability (pH 4 to 8)
- excellent temperature stability (up to 80°C)
- good formulation compatibility (no impact on stability and colour).

##### 3. Skin benefits:

- strong antioxidant and free radical scavenger
- helps to protect skin's elasticity.



**Table 1:** Micellar water (pH4.8)

Phase	Ingredient	INCI	%w/w
A	Purified water	Water/Aqua	as. 100
B	Blanose 7H3SF CMC	Cellulose Gum	0.05
	Phyteq raspberry I multifunctional	Raspberry Ketone	0.05
	Optiphen HD preservative booster	1,2-Hexanediol	1.00
C	Lubrajel marine hydrogel	Water/Aqua (and) Glycerin (and) Sodium PCA (and) Erythritol (and) Chondrus Crispus (Carrageenan) (and) Xanthan Gum	5.00
	Sepiclear G7	Heptyl Glucoside	0.90
	Oramix NS10	Decyl Glucoside	0.10

**Did you know?**

You can solve your preservative challenges with Ashland's preservatives selector tool. **Click here to access the tool online:** <https://bit.ly/2LQvt9T>.

Organism	48 hours	7 days	14 days	21 days	28 days
S.aureus	<10	<10	<10	<10	<10
Bacterial composite	<10	<10	<10	<10	<10
Mould composite	1.90E+02	<10	<10	<10	<10

**Figure 1:** The combination of 0.5% Phyteq raspberry I and 1% 1,2-Hexanediol provides excellent antimicrobial protection

**"Phyteq™ raspberry multifunctional furthers Ashland's innovations for plant-inspired clean beauty"**

will be popular in formulations because end consumers increasingly evaluate labels that include products inspired by nature. Being readily biodegradable and globally compliant, this ingredient builds on the already well-known health benefits of raspberry."

Phyteq raspberry is an excellent choice for skin care products, because it performs as a strong antioxidant and free radical scavenger, which helps to protect the elasticity of the skin.

Karine Deruddre, global skin care applications manager, Ashland, adds: "Phyteq Raspberry fits perfectly with global skin care formulations as it helps to reduce the levels of approved preservatives or antimicrobials, which can reduce unwanted side effects. This technology combines antimicrobial boosting with skin care benefits, and it has a favourable biodegradability profile. It's also a great solution for cosmetic formulators as it does not require acidic conditions."

Organism	48 hours	7 days	14 days	21 days
S.aureus	<10	<10	<10	
Bacterial composite	<10	<10	<10	Discontinued
Mould composite	4.50E+04	8.60E+03	1.00E+03	

**Figure 2:** Data showing 1% hexanediol failed the challenge test

**ANTIMICROBIAL BEHAVIOUR**

One of the most challenging applications in cosmetics is protecting high water-containing systems like micellar water, against contamination without

changing the appearance of the formulation. A combination of 0.5% Phyteq raspberry I multifunctional and 1% Optiphen HD (1,2-Hexanediol) provides excellent protection even after two inoculations cycles (day 0 and day 21). No impact on clarity or colour was observed, and the sample with 1% Optiphen HD failed the test. See Figures 1 and 2. The formulation used in the challenge test is featured in Table 1.

**PHYTOCHEMICAL TESTS**

Phyteq raspberry acts as multifunctional ingredient. Besides its antimicrobial boosting properties, it is gentle on skin's native flora and provides skin benefits when used in cosmetic products. It is ideal for use in the following applications: skin and body care, w/o and o/w emulsions, tonics and shampoos or body wash, sun care formulations (both w/o and o/w) with organic and/or inorganic UV filters, hair styling products, treatments and conditioners. ■

**Ashland** – [www.ashland.com/raspberry](http://www.ashland.com/raspberry)  
**IMCD** – [www.imcdgroup.com](http://www.imcdgroup.com)