

## **BergaMuls ET 1**

*Vegetable fibre compound for emulsifying – with thickening and moisturising properties*



A century ago, the first emulsifier revolutionised cosmetics. Since then, a lot has happened in cosmetics. Ongoing innovation around this elementary ingredient category has multiplied manufacturers' options.

In addition to a host of physical and chemical properties, modern emulsifiers must also meet other demands, like biodegradability, natural origin and environment-friendly manufacture and ideally not to be declared as emulsifier.

In view of all these requirements, the Berg + Schmidt R & D team has now developed a vegetable, multi-functional solution – a product based on vegetable fibres that simultaneously emulsifies and thickens same time, is easy to process, and is all-natural.

### **BergaMuls ET 1 advantages**

- Can be used in cold process (saves time and costs)
- Natural, renewable raw material
- Electrolyte-compatible
- Compatible with all oil polarities
- Can be used across the 4-9 pH spectrum
- High resistance to shear forces and temperature

### **Applications**

Facial care  
Body care  
Hair care  
Sun care

## BergaMuls ET 1: A vegetable fibre compound for emulsifying and thickening

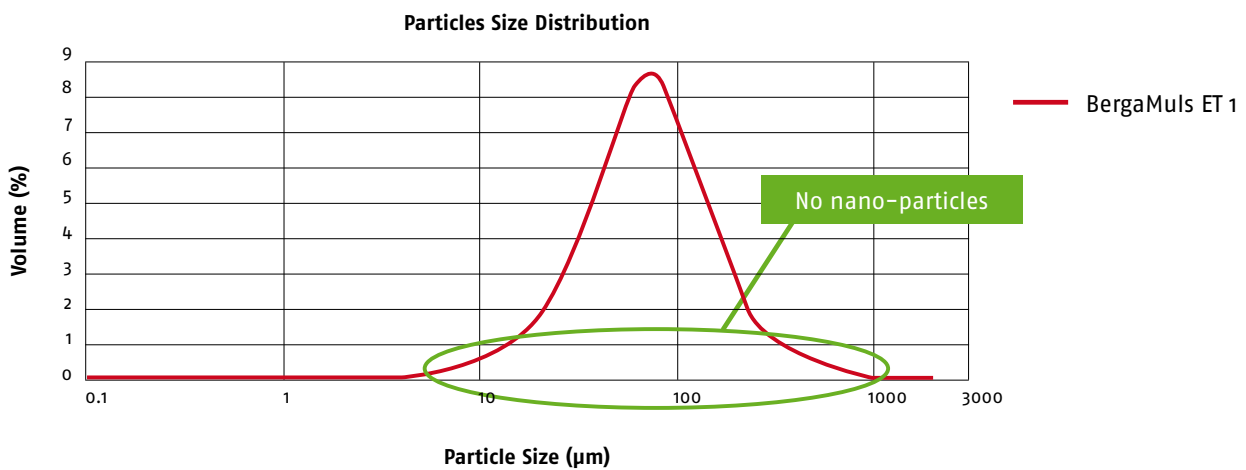
### The product

BergaMuls ET 1 is based on natural fruit and cereal fibres and has excellent emulsifying, thickening and moisturising properties.

For consumers, fibres of this type have positive associations with health and well-being, supporting the concept of the naturalness of your products.

<b>Trade name:</b>	BergaMuls ET 1
<b>Chem. description:</b>	Fruit and cereal fibres
<b>INCI:</b>	Beta-Glucan (and) Pectin
<b>Appearance:</b>	Fine powder, ivory-coloured
<b>Particle size:</b>	≥ 1 µm
<b>Preservative agent:</b>	Preservative-free

**Fig. 1: Typical particle size distribution of BergaMuls ET 1**



### Simple and multifunctional

A special benefit of BergaMuls ET 1 is that it can be processed warm or cold, and emulsifies and thickens in just one work step. BergaMuls ET 1 is thus a multifunctional solution.

Another advantage is its compatibility with other ingredients used in cosmetics, such as vegetable oils, silicone oils, esters, electrolytes, UV filters and others.

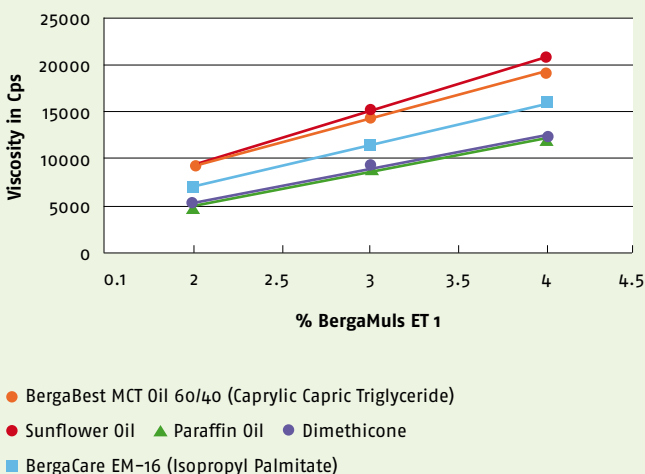
In addition, BergaMuls ET 1 can be used in the pH spectrum from 4–9, so that it covers the common cosmetics pH range.

Tests show that BergaMuls ET 1 has comparable or slightly better moisturising properties than glycerine.



**Fig. 2: Compatibility of BergaMuls ET 1 with oils of different polarities**

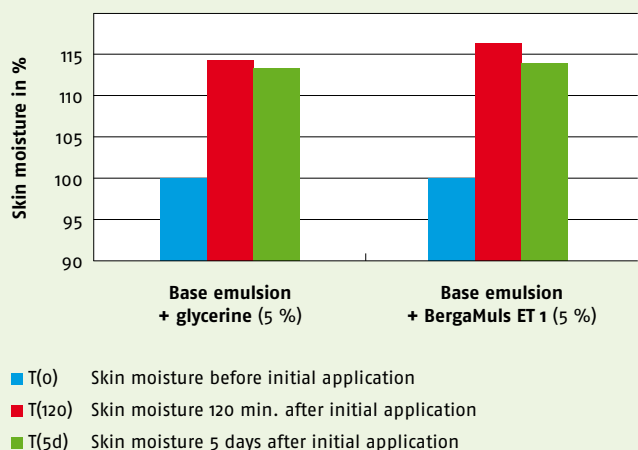
Viscosity of emulsions with various amounts of BergaMuls ET 1 (20% oil, percentage of BergaMuls ET 1, to 100% with distilled water). Brookfield measurement.



**Fig. 3: Moisturising properties of BergaMuls ET 1 vs. glycerine**

Comparative study (corneometry): Two mixtures of 80 g base emulsion with 15 g water were prepared, one with 5 g glycerine and one with 5 g BergaMuls ET 1. Base emulsion: PEG and silicone with 10.5 % emulsifier, 4 % silicone and 3.5 % glycerine, water content 66%.

Result: The base emulsion with BergaMuls ET 1 had a slightly better influence on skin moisture than the emulsion with glycerine. The positive effect on skin moisture remained at a consistently high level even after 5 days.



### Uncomplicated processing

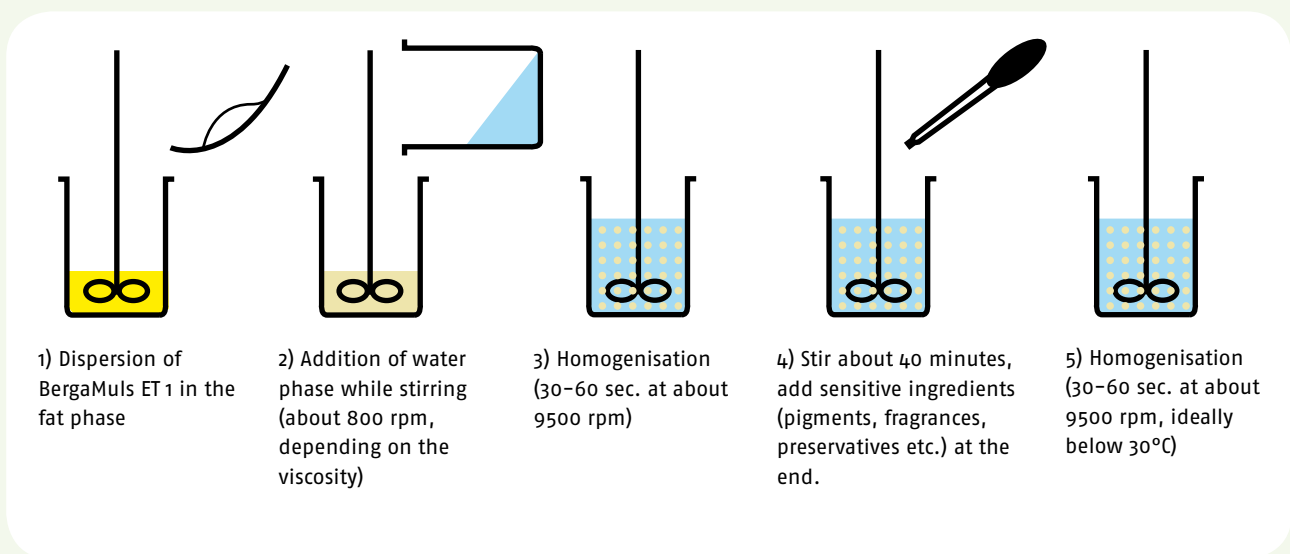
BergaMuls ET 1 is easy to use. Just disperse the fine, odourless powder in the fat phase and add the water phase to create an emulsion. BergaMuls ET 1 requires no additional working steps such as subsequent neutralisation or preparation of a preliminary solution.

With its energy-saving processing and the very low amounts needed, BergaMuls ET 1 offers economic and ecological advantages over conventional emulsifiers.

It is very resistant to high shear forces, as commonly occur in homogenising.

To get the ideal droplet size and achieve a stable emulsion, Berg + Schmidt recommends the following procedure:

**Fig. 4: Recommended procedure for using BergaMuls ET 1**



### Usage levels

BergaMuls ET 1 unfolds its full benefits even at low quantities. 1.5–5% is generally enough for a stable emulsion. No co-emulsifier is needed.

We will be pleased to support you in new developments. Formulations are available on request.