

## GluCare® S

Highly active yeast-derived partly carboxymethylated  $\beta$ -glucan

- Revitalizes the skins own active defense system
- Reduces the sensitivity of skin
- Enhances the natural repair processes in damaged skin
- Particular suited for ageing skin, sensitive skin and sun care applications
- Active at low concentrations

Personal Care

## INCI Name (CTFA name)

GluCare® S Sodium Carboxymethyl Beta-Glucan

### Chemical and physical properties (not part of specifications)

Form	powder
Active matter	≥ 85 %

### Properties

- Especially due to age and environmental influences such as UV radiation, the skin loses its ability to protect itself against pollution and microorganisms. The natural active defence system of the skin is impaired, which results in an increased sensitivity of the skin.
- Through the topical application of GluCare® S, a yeast derived partly carboxymethylated β-glucan, the natural protection systems in the skin can be revitalised, resulting in a reduction of the sensitivity of the skin. Furthermore, the ability of the skin to repair itself will be enhanced, resulting in a healthier and less aged skin.
- Its unique properties make it an essential ingredient in products for applications such as sun care, sensitive skin and ageing skin.

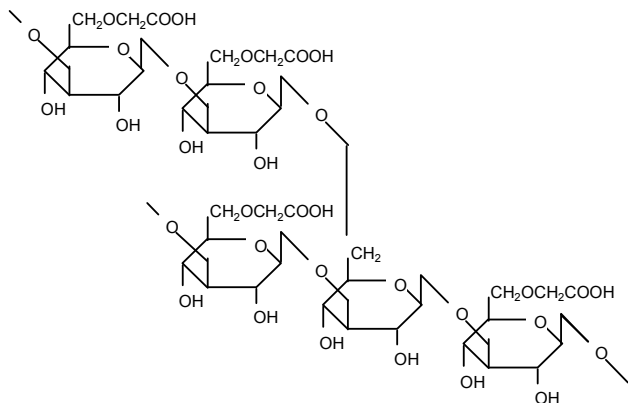


Fig. 1: simplified molecular structure of GluCare® S (INCI name: Sodium carboxymethyl beta-glucan)

- Sophisticated techniques are used to obtain and purify the β-glucans from the cell wall of the yeast *Saccharomyces cerevisiae*. This process results in a highly active β-glucan, with the correct 3 dimensional structure and high molecular weight with a very high purity.
- By a partly carboxymethylation of the β-glucan a water soluble product, Glucare® S, is obtained.

### Efficacy studies

A GluCare® S containing formulation was applied on human skin explants before and after UV radiation (1.5 Joules/cm<sup>2</sup>). After completing the treatment the number of Langerhans Cells was determined and compared [fig 2 (a and b)].

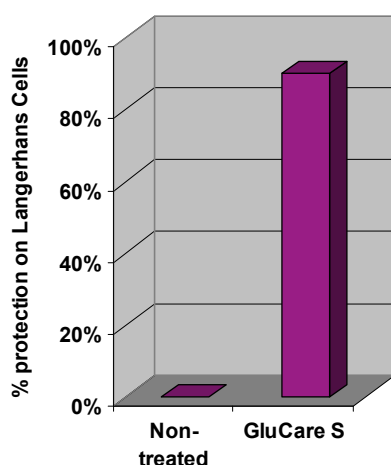
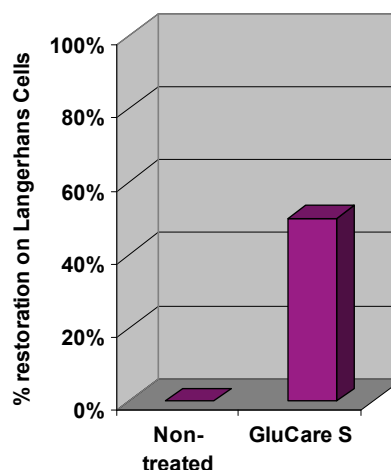


Fig. 2: Influence of GluCare® S on number of UV-irradiated Langerhans Cells.

The activity of the GluCare® S formulation is expressed as percentage protection or restoration (the maximum damage is the difference in the number of Langerhans Cells in skin which was, and was not subject to UV radiation and not treated with the GluCare® S containing formulation).

As can be seen from the results GluCare® S was extremely effective in protecting the Langerhans Cells against the damaging effects of UV radiation; the reduction in the number of Langerhans Cells could be reduced to approximately 10 %.

Application of the GluCare® S containing formulation resulted even in the partly restoration of the number of Langerhans Cells after this number was sharply reduced as a result of UV radiation.

### Preparation

GluCare® S can be easily incorporated into an O/W emulsion by adding to the water phase before the homogenisation step.

### Application

- Anti-aging products
- Sun Care products
- Products for Sensitive Skin
- Blemished Skin products

### Recommended usage concentration

0.05 – 0.40 % GluCare® S

### Packaging

0.25 kg package  
2.50 kg bag

### Storage

The shelf life of GluCare® S is 1 year, provided it is stored at room temperature and dark conditions.

### Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

### Guide Line Formulations

<b>Anti-Aging Lotion</b>		
<b>Ma 12/00-4</b>		
<b>Phase A</b>		
ABIL® Care 85 (Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone; Caprylic/Capric Triglyceride)		2.00 %
TEGOSOFT® CT(Caprylic/Capric Triglyceride)		5.00 %
TEGOSOFT® OS (Ethylhexyl Stearate)		5.00 %
Mineral Oil (30 mPas)		5.00 %
Tocopheryl Acetate		1.00 %
Phytantriol		0.10 %
Borage (Borago Officinalis) Seed Oil; Tocopherol; Ascorbyl Palmitate (ROPUFA 25 (n-6) Oil), Roche		3.00 %
Bisabolol		0.40 %
<b>Phase B</b>		
TEGO® SMO 80 V (Polysorbate 80)		0.20 %
Water		72.40 %
Panthenol		1.00 %
Allantoin		0.10 %
GluCare® S		0.10 %
Glycerin		2.00 %
<b>Phase C</b>		
TEGO® Carbomer 140 (Carbomer)		0.15 %
TEGO® Carbomer 141 (Carbomer)		0.15 %
Xanthan Gum		0.10 %
TEGOSOFT® P (Isopropyl Palmitate)		1.60 %
<b>Phase D</b>		
Sodium Hydroxide (10 % in water)		0.70 %
Preservative, Perfume		q.s.
<b>Preparation:</b>		
1. Add phase A to phase B with stirring. <sup>1)</sup>		
2. Homogenise.		
3. Add phase C and homogenise for a short time.		
4. Add phase D and stir well.		
<sup>1)</sup> <b>Important:</b> If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .		

<b>After Sun Body Cream with Glucare S Ma 24/00-1</b>		
<b>Phase A</b>		
TEGOSOFT® DC (Decyl Cocoate)		4.00 %
TEGOSOFT® CR (Cetyl Ricinoleate)		2.00 %
TEGOSOFT® HP (Isocetyl Palmitate)		3.00 %
Isohexadecane		6.00 %
Macadamia (Ternifolia Nut) Oil		2.00 %
Tocopheryl Acetate		0.40 %
Tocopherol		0.10 %
Stearic Acid		0.30 %
TEGIN® 4100 (Glyceryl Stearate)		1.00 %
<b>Phase B</b>		
TEGO® Care CG 90 (Cetearyl Glucoside)		1.00 %
Glycerin		2.00 %
Panthenol		1.00 %
Bisabolol		0.80 %
Allantoin		0.10 %
GluCare® S		0.10 %
Water		74.80 %
<b>Phase C</b>		
TEGO® Carbomer 141 (Carbomer)		0.20 %
TEGOSOFT® HP (Isocetyl Palmitate)		0.80 %
<b>Phase D</b>		
Sodium Hydroxide (10 % in water)		0.40 %
Preservative, Perfume		q.s.
<b>Preparation:</b>		
<ol style="list-style-type: none"> <li>Heat phase A and B separately to approx. 80 °C.</li> <li>Add phase A to phase B with stirring.<sup>1)</sup></li> <li>Homogenise.</li> <li>Cool with gentle stirring to approx. 60°C and add phase C.</li> <li>Homogenise for a short time.</li> <li>Cool with gentle stirring and add phase D below 40°C.</li> </ol>		
<sup>1)</sup> Important: If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .		

<b>Lotion against Blemished Skin with Tea Tree Oil and GluCare S Ma 12/00-3</b>		
<b>Phase A</b>		
ABIL® Care 85 (Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone; Caprylic/Capric Triglyceride)		2.00 %
TEGOSOFT® CT(Caprylic/Capric Triglyceride)		5.00 %
TEGOSOFT® OS (Ethylhexyl Stearate)		5.00 %
Mineral Oil (30 mPas)		5.00 %
Tocopheryl Acetate		1.00 %
Phytantriol		0.10 %
Bisabolol		0.40 %
Tea Tree (Melaleuca Alternifolia) Oil		3.00 %
<b>Phase B</b>		
TEGO® SMO 80 V (Polysorbate 80)		0.20 %
Water		72.40 %
Panthenol		1.00 %
Allantoin		0.10 %
GluCare® S		0.10 %
Glycerin		2.00 %
<b>Phase C</b>		
TEGO® Carbomer 140 (Carbomer)		0.15 %
TEGO® Carbomer 141 (Carbomer)		0.15 %
Xanthan Gum		0.10 %
TEGOSOFT® P (Isopropyl Palmitate)		1.60 %
<b>Phase D</b>		
Sodium Hydroxide (10 % in water)		0.70 %
Preservative, Perfume		q.s.
<b>Preparation:</b>		
<ol style="list-style-type: none"> <li>Add phase A to phase B with stirring.<sup>1)</sup></li> <li>Homogenise.</li> <li>Add phase C and homogenise for a short time.</li> <li>Add phase D and stir well.</li> </ol>		
<sup>1)</sup> Important: If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .		

<b>Skin Protecting Sun Care Lotion (Cold Processing) Ma 1/00-1</b>	
<b>Phase A</b>	
ABIL® Care 85 (Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone; Caprylic/Capric Triglyceride)	2.00 %
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	3.00 %
TEGOSOFT® DC (Decyl Cocoate)	2.00 %
TEGOSOFT® P (Isopropyl Palmitate)	0.40 %
Avocado (Persea Gratissima) Oil	1.00 %
4-Methylbenzylidene Camphor	3.00 %
Ethylhexyl Methoxycinnamate	2.50 %
Isoamyl p-Methoxycinnamate	2.50 %
Butyl Methoxydibenzoylmethane	2.00 %
Tocopheryl Acetate	0.50 %
<b>Phase B</b>	
Water	75.90 %
TEGO® SMO 80 V (Polysorbate 80)	0.20 %
Glycerin	2.00 %
EDTA	0.10 %
GluCare® S	0.10 %
<b>Phase C</b>	
TEGO® Carbomer 140 (Carbomer)	0.15 %
TEGO® Carbomer 141 (Carbomer)	0.15 %
Xanthan Gum (Keltrol SF), Lubrizol	0.10 %
TEGOSOFT® P (Isopropyl Palmitate)	1.60 %
<b>Phase D</b>	
Sodium Hydroxide (10 % in water)	0.80 %
Preservative, Perfume	q.s.
<b>Preparation:</b>	
1. Add phase A to phase B with stirring. <sup>1)</sup>	
2. Homogenise.	
3. Add phase C and homogenise for a short time.	
4. Add phase D and stir well.	
<sup>1)</sup> <b>Important:</b> If phase A has to be charged into the vessel first, phase B must be added <b>without stirring</b> .	

#### Especially concerning Active Ingredients

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