SCHOTT Vitryxx® Bioactive Glass

For Skin Care

Product Information:

Vitryxx® Bioactive Glass is composed of four oxides that are essential for the human body: namely, silicon oxide, sodium oxide, calcium oxide and phosphor oxide. This inorganic material is made from natural raw ingredients such as sand and soda and purified at more than 1400 °C.

Vitryxx® has the following propoerties:

- Biocompatible and skin-friendly ingredient for all skin types
- Insensitive to heat or UV-light and temperature extremes
- Builds hydroxyapatite on its surface

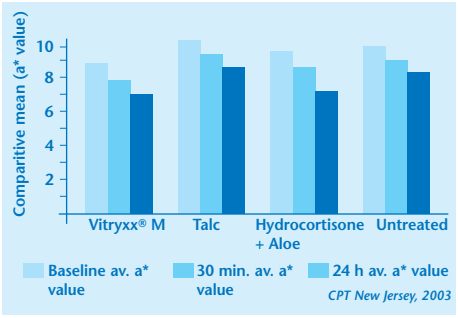
Used in cosmetics, Vitryxx® offers additional benefits:

- Strong anti-oxidative efficacy
- Substantial reduction in skin redness
- Improvement in skin appearance within a short period of time with a visible reduction of wrinkles

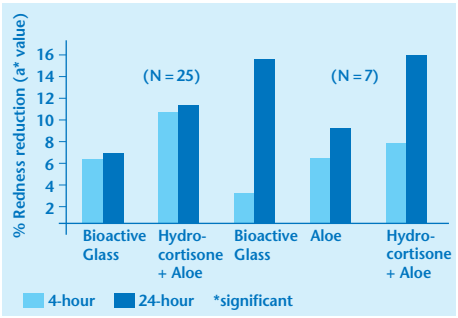
	Vitryxx® | 4 µm conc. 1 mg/ml	Blank sample
-UV	13.35 nmol DNPH*/ mg protein 33%	40.91 nmol DNPH*/ mg protein 100%
+UV	19.60 nmol DNPH*/mg protein 48%	89.02 nmol DNPH*/mg protein 218%
	"shows a strong anti-oxidative effect"	Schrader Inst. 2003

*Performed with human keratinocytes *DNPH Dinitrophenyl-hydrazin) | Anti-oxidative efficacy in Protein-Carbonyl-Assay test (R. L. Levine et al, Meth. Enzymol. 186, 464-478, 1990)*

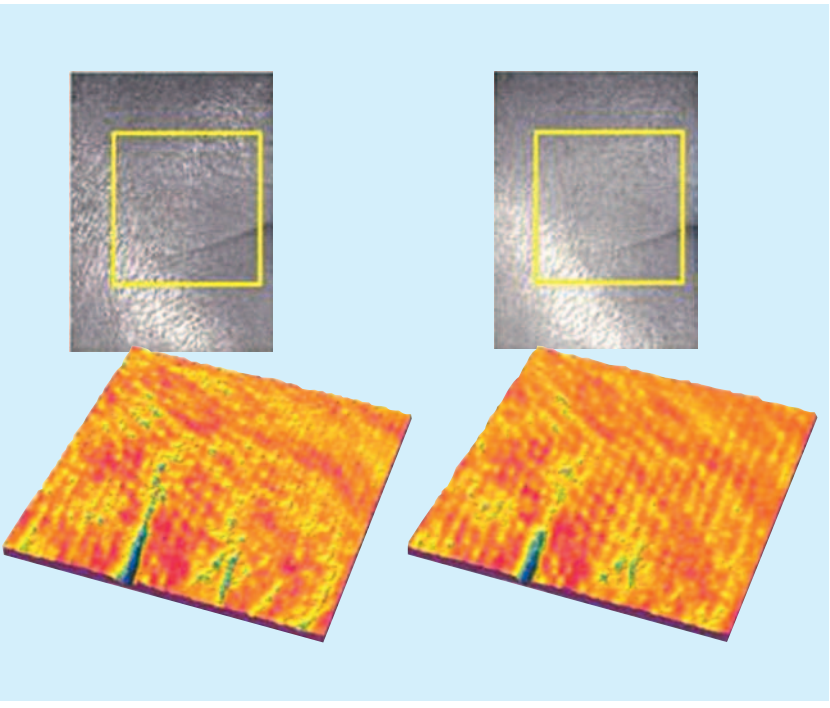
Vitryxx®: Protein-Carbonyl-Assay test readings



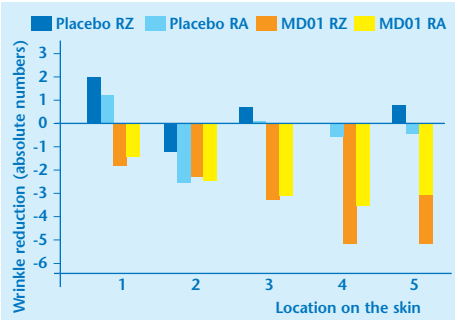
Vitryxx®: Redness reduction effect in chemical skin barrier damage study



Redness reduction effect in 24-Hr UV-induced erythema studies



SCHOTT Vitryxx®: Visible anti-wrinkle efficacy
FOITS (Fast Optical in vivo topometry of human skin) measurements



FOITS – Rz and Ra

SCHOTT
glass made of ideas

SCHOTT Vitryxx® Bioactive Glass

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Formulation Guideline:

Vitryxx® Bioactive Glass is activated by the moisture from water-based products or natural skin. Upon activation Vitryxx® will release mineral ions into the formulation or onto the skin. The system reaches equilibrium after 30-60 minutes.

In general, low loading factors (< 1.0%) will support a stable Water/Oil and Oil/Water formulation. To maintain a stable and compatible formulation at higher concentrations, a predispersion with a high viscous hydrophilic liquid can be used. Carbopol® Aqua SF-1 (alkali-swellable acrylic emulsion polymer), for example, works effectively with Vitryxx®. Fragrances that are compatible with high pH levels should be selected. Raw materials that tolerate high ion content would help in obtaining good hydrous formulations. The possible effect of increased pH in the formulation can be buffered down to pH 5 to 6.

Vitryxx® demonstrated a gelling effect on some formulations (e.g. liquid foundation). With a density of approx. 2.7 g/cm³ it also tends to settle down in low-density fluids. Pre-dispersing Vitryxx® Bioactive Glass with equal or higher amount of viscous hydrophilic liquid (e.g. glycerine) or preactivation in water can help in obtaining a homogeneous dispersion.

Pre-blending Vitryxx® with Mica improves its dispersibility and enhances the appearance of the formulation. SCHOTT also offers the option of premixed Vitryxx® M, Bioactive Glass with Mica.

Carbopol® is a registered trade mark of Lubrizol.

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