Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

Product Name: Xanthan Gum 60 mesh; < 250 micrometers (µm)

INCI Name: Xanthan Gum

CAS: 11138-66-2

Chemical Classification: Gum, hydrophilic colloid

Functional Category: Viscosity modifier, emulsion stabilizer

Chemical Formula: $C_{35}H_{49}O_{29}$ (monomer)

Description: Xanthan Gum Ultra Soft is an improved, natural, and vegan variant of xanthan gum. It is produced by fermenting glucose or sucrose using the bacterium Xanthomonas campestris. The raw material is non-GMO and complies with food and pharmaceutical standards. It is distinguished by its high purity and quality. Belonging to the group of heteropolysaccharides, it functions as a thickener. Its uniqueness lies in its ability to form transparent, optically clear gels without the typical fibrous texture found in standard xanthan gums. The significantly reduced pseudoplasticity means this form offers low resistance to spreading and leaves a pleasant, smooth, and silky feel on the skin. This feature makes it particularly suitable for formulations requiring a sophisticated texture — free from stickiness or tightness. In cosmetic products, it stabilizes oil-in-water emulsions by preventing the coalescence of oil droplets, thereby enhancing long-term formulation stability without visual or physical changes. Solutions of this material remain stable in the presence of salts and acids, as well as at elevated temperatures, allowing its use in formulations processed or stored under demanding conditions. Xanthan Gum Ultra Soft does not alter the color or scent of preparations, which is especially important in sensory-sensitive formulations. It is recommended for use in aqueous serums, gels, moisturizing lotions, and emulsions requiring a transparent appearance and a gentle touch on the skin. Due to its optical clarity and superior sensory profile, it is a modern alternative to traditional xanthan gums in formulations with the highest aesthetic and performance requirements.

Physicochemical Properties: Xanthan Gum Ultra Soft is a fine, white powder, almost odorless. It dissolves easily in water, forming viscous gels that become pasty at concentrations above 5%. It exhibits high optical clarity, with transmittance over 85% at a 1%

Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

concentration when measured at 600 nm. The viscosity of a 1% solution in the presence of 1% NaCl ranges from 800 to 1400 cP. The solution is stable, and to avoid lump formation during preparation, it is recommended to pre-disperse it in glycerol or propanediol before adding water. It meets European Pharmacopoeia standards regarding the presence of other gums. Particle size corresponds to fineness below 250 µm, with 100% passing through USS 60 mesh. Loss on drying does not exceed 15%, and ash content is within technological norms. The presence of isopropanol, pyruvic acid, and heavy metals is negative, confirming the high purity of the raw material. It is stable across a wide pH range, from pH 3 to pH 11, and retains its structure even in the presence of large amounts of electrolytes, organic acids, and alcohols. It is also thermostable and does not degrade under standard thermal processing conditions used in cosmetic manufacturing.

Mechanism of Action: The functionality of xanthan gum in cosmetic formulations is based on its ability to form viscous, stable gels even at low concentrations. The structure consists of long glucose chains with side branches containing mannose and glucuronic acid molecules. These branches interact with water and other components, creating a three-dimensional network in aqueous solution. When added to a water-based medium, xanthan gum hydrates and forms a network that increases the viscosity of the liquid, preventing particle sedimentation and phase separation. This effect is especially useful in emulsions, as it stabilizes the oil phase and prevents its separation from the water phase. Xanthan gum enables products to spread smoothly and evenly on the skin, creating a light feel without stickiness or heaviness. A distinctive feature is its ability to retain viscosity stability even under extreme conditions of pH, temperature, and salinity. Across a wide pH range (from acidic to basic), it maintains structure and stability, making it ideal for various cosmetic products such as creams, lotions, serums, and gels. Additionally, in heat-intensive processes where formulations are heated, xanthan gum remains stable, allowing its use in products manufactured or stored at high temperatures. It is also compatible with other hydrophilic thickeners, such as carbomer gel or guar gum, enabling the creation of formulations with specific textures. Thanks to this compatibility, xanthan gum is often used as a synergistic thickener that enhances the effects of other stabilizers and improves product texture.

Benefits:

- Increases product viscosity, improving texture and application feel.

Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

- Forms a network structure that stabilizes emulsions and prevents oil-water separation.
- Keeps solid particles evenly distributed, preventing sedimentation.
- Forms a thin protective film on the skin, helping retain moisture and reduce water evaporation.
- As a natural ingredient, it is compatible with eco-friendly products and remains stable under various pH and temperature conditions.

Usage Instructions: Xanthan Gum Ultra Soft is used in a wide range of cosmetic preparations, with concentrations depending on the type of formulation and desired effect. Typically used at 0.1% to 1%. Lower concentrations, from 0.1% to 0.3%, create light gels or mildly thickened products such as serums or lotions. In these cases, it stabilizes the formulation and improves the texture of the final product. For thicker preparations like creams or face masks, a higher concentration of up to 1% is recommended. In such products, it contributes to a dense, viscous structure that enables even distribution of active ingredients. In products like exfoliating gels or those with suspended particles, the concentration is adjusted to ensure stable suspension, usually between 0.3% and 0.5%. For optimal use, it is advised to slowly disperse xanthan gum in water or water-soluble phases with continuous mixing. Using warm water may accelerate dispersion. Adding up to 0.5% sodium chloride can enhance thickening.

Production Method: Xanthan gum is produced using Xanthomonas campestris bacteria present in a carbohydrate solution. The xanthan polymer is precipitated from the medium by adding isopropyl alcohol. The precipitate is then dried and milled to obtain the final powder form.

Animal Testing: Not tested on animals

GMO: Non-GMO

Vegan: Contains no ingredients of animal origin