



Technical Data Sheet

SunSpheres™ BIO SPF Booster

INCI: Microcrystalline cellulose

Features & Benefits

- Bio-based, readily biodegradable SPF booster
- Allows reduced amount of UV filters in formulations
- Excellent for aesthetically pleasing formulations
- Excellent tool to design formulations for sensitive skin
- Useful for wide variety of cosmetic products using either inorganic or organic UV filters
- Non-irritating, non-toxic
- Non-whitening

Applications

SunSpheres™ BIO SPF Booster can be used in a wide range of sun care and daily wear SPF products containing UV active ingredients:

- Organic and inorganic UVA and UVB actives
- Oil-in-water, water-in-oil and water-in-silicone systems
- Cold- and hot-processable systems
- Cream and lotion formulations
- Makeup (foundation, BB creams, etc.)

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result
Typical Use Levels	%	1–3 polymer solids
Appearance		White/off white powder
Loose Bulk Density	g/cm ³	0.6–0.8
Water Content	%	0.00–6.00
Naturality Origin Index (ISO ¹ 16128)		0.97
Biodegradability (OECD301)		Readily biodegradable
Programme for the Endorsement of Forest Certification (PEFC) Certified		Yes
China Compliance		Listed in the catalogue of cosmetic ingredients
Shelf Life	years	2

1. ISO: International Standardization Organization

Description

SunSpheres™ BIO SPF Booster is a bio-based SPF booster built on a unique crystalline cellulose technology from natural origin that enables greater SPF efficiency in sun care and daily wear SPF products. The crystalline cellulose raise the UV protection over the whole UVA/UVB spectrum, working equally well with organic and inorganic actives.

How to Use

SunSpheres™ BIO SPF Booster is an easy to use powder that is hydrophilic and can be easily incorporated into water or the aqueous phase of an emulsion. It can also be dispersed in the oil phase of an emulsion.

1.5% is recommended as the starting use level. High use level over 3% may result in reduced performance.

Homogenization of the emulsion (O/W or W/O) is recommended to ensure a good dispersion of SunSpheres™ BIO SPF Booster in the formulation and to improve stability of the emulsion.

Addition of SunSpheres™ BIO SPF Booster increases formulation viscosity, however it exhibits shear thinning behavior. In most cases the level of thickeners (ie. polymers, fatty alcohols) can be reduced in a given formulation to balance the viscosity increase provided by SunSpheres™ BIO SPF Booster.

SunSpheres™ BIO SPF Booster is best incorporated into the continuous phase of a formulation. For example, add to the water phase of an O/W formulation. Homogenization during formulation processing is highly recommended to achieve optimal efficiency. Salt should not be added directly to a water solution of SunSpheres™ BIO SPF Booster.

SunSpheres™ BIO SPF Booster should not be used in aerosol sprays formulations.

**Handling
Precautions**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

**Usable Life and
Storage**

No special conditions are required for the storage of SunSpheres™ BIO SPF Booster, but the material should be stored in a dry area, in tight containers.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**Health and
Environmental
Information**

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

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