



Technical Data Sheet

DOWSIL™ 11-100 Additive

A functional siloxane for low smoke halogen free wire & cable material LOI improvement and inorganic filler surface treatment

Features & Benefits

- Increase LOI value
- Improve inorganic filler de-agglomeration
- Impart hydrophobicity to inorganic filler surface
- Longer shelf life
- High quality consistency
- Low viscosity
- Meet higher customer LOI specific requirement
- Improve process stability and productivity of compounding
- Longer inventory window

Composition

- Alkoxy siloxane

Applications

- Low smoke halogen free wire & cable material
 - Improve LOI (Limiting Oxygen Index) value
 - Improve filler dispersion in polymer matrix
- Inorganic fillers surface treatment
 - Improve de-agglomeration
 - Impart hydrophobicity

Typical Properties

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

Property	Unit	Result
Appearance		Clear liquid, no gel
Specific Gravity		0.97
Viscosity (@ 25°C)	cSt	5.5
Freeze Point	°C	< -16
Actives Content	wt%	> 90
Flash Point	°C	16

Materials were tested according to Corporate Test Methods (CTM). Copies of CTMs are available on request.

Description

DOWSIL™ 11-100 Additive contains alkoxy and alkyl functional groups on siloxane to improve LOI value for low smoke halogen free wire & cable material and improve dispersion of inorganic fillers, such as ATH/MDH etc into organic polymers such as resin, plastic, and rubber. It also will transform hydrophilic inorganic powders, fillers, or substrates to that of hydrophobic. The alkoxy groups react similarly to that of silane coupling agents, forming a stable bond with the mineral filler or surface. The alkyl functionality acts as both compatilizer with organic polymer matrices, as well as hydrophobe to reduce water absorption. This material is also low viscosity and can be applied easily.

How to Use

DOWSIL™ 11-100 Additive can be applied to mineral fillers and inorganic surfaces by pre-treatment or in-situ mixing, i.e. during compounding with a polymer resin or rubber (Such as EVA, PP, PE, PU).

In-Situ Application

This additive could be added to the extruder or mixer directly at a level of approximately 1% (for 1–10 micron size particles) based on the weight of the mineral filler. In some cases, it may be upwards of 2-3%. For each specific application, the optimum loading should be determined by testing several loadings. Because this product contains methanol and will generate methanol during the mixing process at elevated temperature, a vent should be provided and safe handling of this vent stream should be considered.

Pre-Treatment

This product can be applied directly to a mineral filler by atomizing onto a well mixed (preferably in a fluidized state for best mixing) powder. Or it can be applied by dipping, brushing, or spraying onto a surface. The additive can be applied neat or in a dilute solution of aliphatic hydrocarbon solvent, aromatic hydrocarbon, or anhydrous alcohol, generally at a level of 1% (for 1–10 micron size particles) by weight of mineral filler powders. Higher surface area substrates would require a higher percentage of DOWSIL™ 11-100 Additives by weight, generally 2–3%. After application, the inorganic powder/ substrate should then be air dried at ambient conditions or dried briefly at 105°C to 120°C (221–248°F) to complete condensation of silanol groups at the surface and to remove methanol and water. Optimum treatment level, application, and drying conditions, such as time and temperature, should be determined for each application prior to use in a commercial process. This product contains residual methanol and will also generate methanol upon reaction, so appropriate handling should be considered.

Handling Precautions

This product contains residual methanol and is flammable. Also when exposed to moisture, DOWSIL™ 11-100 Additive hydrolyses, generating methanol. Appropriate measures should be taken to prevent the accumulation of hazardous concentrations of methanol fumes in the working environment.

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

After opening a container of DOWSIL 11-100 Additive, a partially filled container should be protected from atmospheric moisture to prevent gelation by purging the container with dry nitrogen or other dry, inert gas. When stored at or below 25°C (77°F) in the original unopened containers, this product has a usable life of at least 18 months from the date of production.

Packaging Information

This product is available in 18 kg pails and 195 kg drums. Samples are available in 500 ml bottles.

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.

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