HYDREPEL® A-201

Polypropylene Hydrophobic Alcohol Repellent Modifier

Introduction

HYDREPEL®A-201 modifier is internal polymer modifier composed of proprietary formulations. It is designed to be used in polypropylene fiber applications as hydrophobic surface modifier. Incorporation of HYDREPEL®A-201 into polypropylene polymer allows the fiber producer to introduce durable hydrophobicity and alcohol repellency as well as to improve the softness and drape or "hand" of polypropylene fibers and fabrics. HYDREPEL®A-201 is a 20% active masterbatch ready to be used for direct addition through various metering devices. Base polymer resin of HYDREPEL®A-201 is chosen to provide matching melt flow index of desired application process (spun bond, melt blown, BCF, filament, etc). HYDREPEL®A-201 can be recommended as surface modifier imparting durable alcohol and water repellency for polypropylene nonwovens, carpet, apparel, and upholstery markets.

Modifier Application Information

HYDREPEL®A-201 modifier is custom formulated to achieve the appropriate processing and performance requirements. Supplier recommends approximately 5% to 20% let down ratios depending on application and final product construction. However, as each process and intended application is different, the exact level of addition should be determined by the customer.

HYDREPEL®A-201 should be thoroughly gravimetrically blended with virgin polypropylene resins. Pre-blended mixture of HYDREPEL®A-201 with base polymer should be added directly into the hopper of extruder. Usage of gravimetric side feeders is possible and highly recommended. Virgin polypropylene homo-polymer resins should have an optimal range between 3.0 and 800.0 melt flow index (MFI).

Processing Conditions

HYDREPEL®A-201 should be used in the extrusion process at less than 260±5 ºC. Depending on processing conditions, the melt flow of the modified resin system during extrusion may be slightly increased allowing higher throughput and finer fibers to be produced.

Modifier Measurement

To determine the exact amount of modifier in the final product hot Soxhlet extraction can be recommended. It is also possible to conduct extraction measurements using high pressure, or microwave assisted extraction. Hexane should be used as a solvent in any type of chosen extraction method. Other low molecular weight hydrophobic organic solvents such as heptane and petroleum ether can be used instead of hexane. Broad band NMR can also be used to

determine amount of modifier in the final product. If NMR is used, then special conditions and calibration curves have to be developed.

Technical Performance Data

Physical Properties of Master Batch Concentrate

Appearance	Cylindrical pellets
Color of pellets	Clear, light tan to medium tan
Specific gravity	<1.0 g/cm^3

Performance Data

Properties of 20 gsm Spun-Bond Fabric

Sample	Softness, g	Alcohol Repellency		
		AS IS	3 Days Aged	1 week Aged
HYDREPEL® A-201	36	3.5	**7.5**	**9.5**
PP Control	52	2.5	2.5	2.5

HYDREPEL® A-201 was added at 5% letdown ratio.

Alcohol Repellency was tested:

- AS IS – immediately after spun-bonding
- 3 days Aged – After 72 hours @ 75±50F
- 1 week Aged– After 1 week @ 75±50F

After proper aging at ambient conditions, addition of HYDREPEL® A-201 makes spun bond fabric:

- Durably Hydrophobic and Alcohol Repellent
- Provides soft hand.

Environmental Information

Toxicological Information:

No toxicological data is available at this time.

US FDA Status

Please talk to your Sales representative about FDA compliance of this finish

Information for European Community:

This product does not contain nonyphenol or animal derived materials.

Safety:

Good industrial hygiene should be practiced whenever any chemical product is used. For additional information, please refer to the MSDS provided for this product.

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