

Durastrength® 4000

Multifunctional Acrylic Impact Modifier

PRODUCT DESCRIPTION

Durastrength® 4000 acrylic impact modifier represents the newest technology that imparts excellent impact properties to rigid PVC products and provides outstanding processability. Durastrength® 4000 impact modifier can be used in place of CPE impact modifiers while maintaining the processing advantages of traditional acrylic impact modifiers.

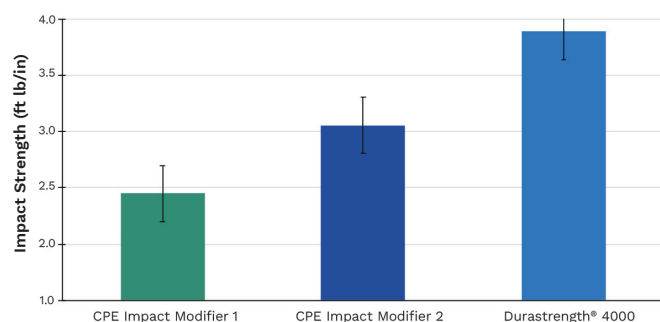
TYPICAL PHYSICAL PROPERTIES*

Physical Form	White Powder
Specific Gravity	1.4
Bulk Density	0.55 g/cc
Particle Size	15% Max on 50 Mesh
Percent Volatiles	1.2% Max

*Typical properties not to be construed as specifications

PRODUCT BENEFITS

1. Excellent impact resistance that is equivalent to or better than alternative non-acrylic impact modifiers.

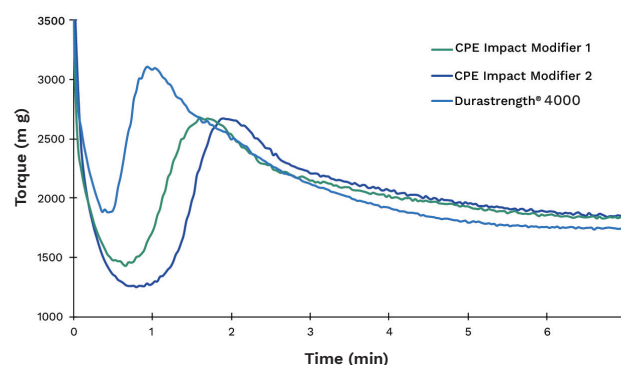
Typical Impact Resistance
(Izod Impact Performance)

Siding Substrate Formulation @ 4.5 phr Impact Modifier

2. Faster fusion than alternative non-acrylic impact modifiers without the need for additional processing aids.

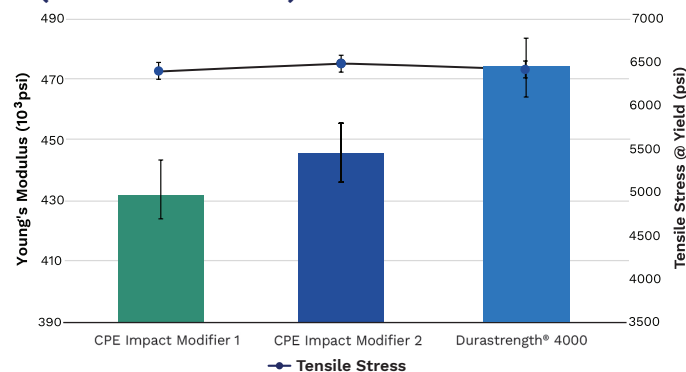
PRODUCT BENEFITS

Typical Torque Rheometer Fusion



Torque Rheometer Curves @ 4.5 phr Impact Modifier
Settings: 175°C, 75 RPM and 100 cc sample size

3. Substrate applications utilizing Durastrength® 4000 impact modifier maintain important mechanical properties for final PVC product performance.

Typical Mechanical Property Performance
(Tensile Evaluation)

Tensile Evaluation @ 4.5 phr Impact Modifier
Test Method: ASTM D638

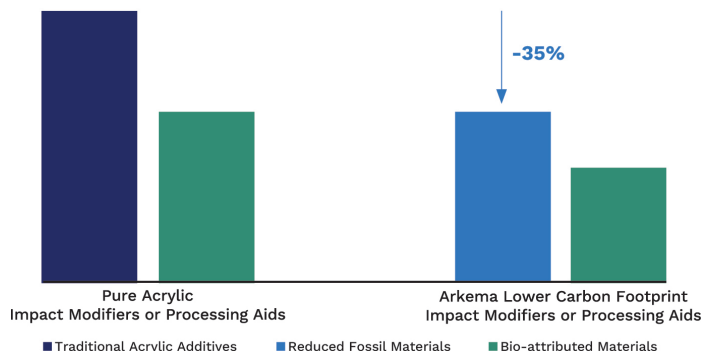
4. Durastrength® 4000 impact modifier has traditional acrylic characteristics such as a low melt viscosity, which when employed in a vinyl formulation, results in good stability, smooth processing, and high output rates.

SUSTAINABLE PERFORMANCE

- **Reduced carbon footprint by up to 35% vs. traditional acrylic additives**

- *Patented technology to reduce the ratio of fossil materials*
- *Lower energy consumption in our production processes*
- *Further reduction possible via bio-attributed monomers (Mass Balance) – in progress*

Carbon Footprint



TYPICAL STARTING FORMULATION RECOMMENDATIONS

Rigid Siding Substrate	Use Level (phr)
PVC Resin (K-65 to K-67)	100.0
Butyl Organotin Stabilizer	0.8 – 1.2
Calcium Stearate	1.0 – 1.5
Paraffin Wax (165 m.p.)	1.0 – 1.5
Oxidized Polyethylene Wax	0.1 – 0.2
Durastrength® 4000 Impact Modifier	4.0 – 5.0
Calcium Carbonate (0.7µm)	10.0 – 20.0
Titanium Dioxide	0.5 – 1.5

Ribbed Pipe	Use Level (phr)
PVC Resin (K-65 to K-67)	100.0
Butyl Organotin Stabilizer	0.6 – 0.8
Calcium Stearate	0.6 – 0.8
Paraffin Wax (165 m.p.)	1.0 – 1.2
Oxidized Polyethylene Wax	0.1 – 0.2
Durastrength® 4000 Impact Modifier	3.5 – 4.5
Plastistrength® Process Aid	0.0 – 0.6
Calcium Carbonate (0.7µm)	4.0 – 6.0
Titanium Dioxide	1.0 – 2.0

SUGGESTIONS FOR USE

Durastrength® 4000 impact modifier is recommended for ease of processing and applications requiring impact properties such as siding, fence and deck substrates. As with all impact modifiers for PVC, proper formulation is required to develop the necessary shear and mixing during extrusion so that impact properties are optimized.

Prospective clients should evaluate Durastrength® 4000 impact modifier in their own laboratories to establish optimum conditions for use in their processes and applications. Arkema's Technical Service Team is available to discuss your application requirements, provide formulation guidance, and laboratory testing as needed.

PACKAGING

Durastrength® 4000 impact modifier is packaged in 25 kg bags (40 bags per pallet) and 816 kg big bags.

ENVIRONMENTAL AND SAFETY INFORMATION

Before handling this material, read and understand the Safety Data Sheet (SDS) for additional information. The SDS is available on our website www.arkema.com or upon request at our Customer Service Department. Arkema believes strongly in Responsible Care® as a public commitment.

MORE TECHNICAL INFORMATION AVAILABLE

Ask your Arkema account manager for further information on high quality Arkema additives for use in PVC, PC, PBT, ABS, PLA, epoxies, (meth)-acrylics, and other thermoplastic or thermosetting systems. Arkema produces a full line of impact modifiers and processing aids. In addition, Arkema's Technical Service staff is also available to assist compounders and processors with formulation and processing recommendations.

Durastrength® Impact Modifiers

Durastrength® acrylic impact modifiers deliver outstanding impact characteristics for outdoor durable applications in PVC, engineering resins and thermosets.

Plastistrength® Process Aids

Plastistrength® process aids offer producers a complete line of melt strengtheners and metal release agents for PVC and engineering resins. Plastistrength® process aids can improve fusion, surging, and aesthetics.

Clearstrength® Impact Modifiers

Clearstrength® impact modifiers are designed for extreme impact or impact/clarity combination in PVC and engineering resins. Clearstrength® impact modifiers provide superior toughening effect in thermosetting resins.

Biostrength® Additives

Biostrength® impact modifiers are designed to improve properties and enhance processability of polylactic acid (PLA) and other biopolymer compounds.

FOR MORE INFORMATION CONTACT

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