

DURASTRENGTH®

TDS/TECHNICAL DATA SHEET

Durastrength® 535

Multifunctional Acrylic Impact Modifier

PRODUCT DESCRIPTION

Durastrength® 535 is an acrylic impact modifier that imparts excellent impact properties to more demanding rigid vinyl products. It provides outstanding processability without adding process aids for most applications.

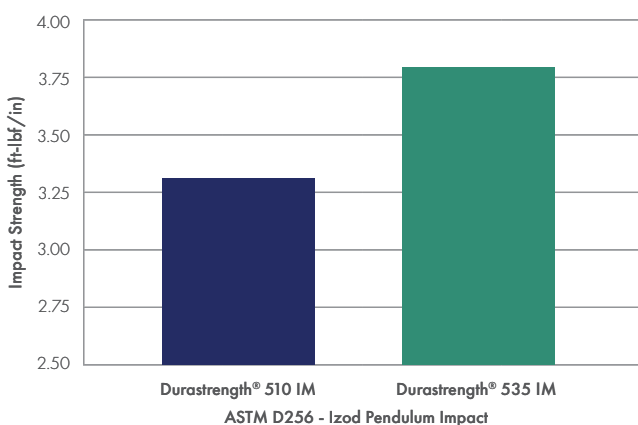
TYPICAL PHYSICAL PROPERTIES

Physical Form	White Powder
Specific Gravity	1.09
Bulk Density	0.43 g/cc
Particle Size	15% Max on 50 Mesh
Percent Volatiles	1.2% Max

PRODUCT BENEFITS

Durastrength® 535 impact modifier offers formulation flexibility through a combination of excellent impact resistance and processability. Superior impact performance can be used to improve properties or decrease modifier loading at constant performance.

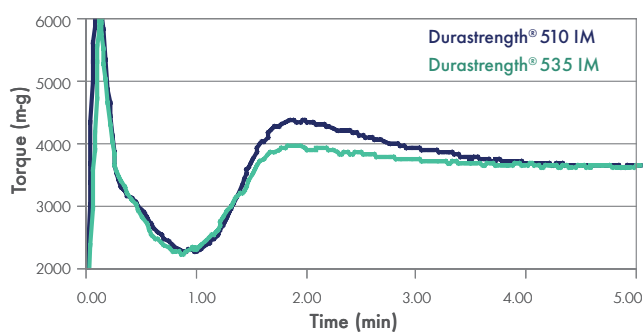
Room Temp Izod Impact 5.0 phr Modifier



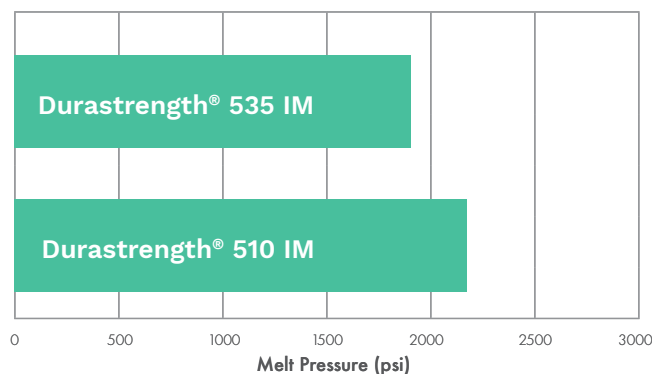
PRODUCT BENEFITS

Because of its unique composition, Durastrength® 535 impact modifier provides optimum processability and fusion characteristics for excellent surface finish and physical properties.

Brabender Fusion (160°C, 65g, 60rpm)



Brabender Twin Screw Extrusion (172/176/179/184°C 35rpm)



The balance of impact resistance and processability can be used to lower overall cost as demonstrated in the following example formulations. Relative to the control, both Case B and C use lower acrylic loading while Case C also increases filler loading through a combination of Durastrength® 535 impact modifier with Plastistrength® 770 process aid to further increase processability.

COST EFFECTIVE PROFILE FORMULA

	Control	B	C
PVC Resin	100.0	100.0	100.0
Methyl Organotin Stabilizer	1.2	1.2	1.2
Calcium Stearate	1.2	1.2	1.2
Oxidized Polyethylene Wax	0.2	0.2	0.2
Parrafin Wax (165°F)	1.2	1.2	1.2
Durastrength® 200 Impact Modifier	5.0		
Durastrength® 535 Impact Modifier		4.5	4.5
Plastistrength® 770 Process Aid			0.5
Plastistrength® 550 Process Aid	1.0		
Calcium Carbonate (0.7µm)	5.0	5.0	5.0
Titanium Dioxide.	10.0	10.0	10.0
Total phr	124.8	123.3	125.8

Value Calculation	Control	B	C
Annual compound vol (K lb)	30,000	30,000	30,000
% acrylic	4.81%	3.65%	3.97%
Formulation cost (\$/lb)	0.608	0.599	0.595
Annual formulation cost (\$K)	18,240	17,980	17,860
Savings vs. Control (\$K)		260	380

SUGGESTIONS FOR USE

Durastrength® 535 impact modifier is recommended for applications where enhanced room and cold-temperature impact resistance is required. It is ideally suited for window profile, vinyl siding, fencing, piping, conduit and injected molded goods. Its low-melt viscosity and rapid fusion characteristics are ideal for difficult injection molding applications.

Customers should evaluate Durastrength® 535 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® 535 impact modifier is packaged in 25 kg bags and 1800 lb bulk bags.

STARTING FORMULATION RECOMMENDATIONS

Window Profile	Use Level (phr)
PVC Resin (K-65 to K-67)	100.0
Methyl Organotin Stabilizer	1.0 – 1.5
Ester Lubricant	1.0 – 1.5
Oxidized Polyethylene Wax	0.1 – 0.2
Durastrength® 535 Impact Modifier	4.5 – 5.5
Plastistrength® 770 Process Aid	0.0 – 0.7
Calcium Carbonate (0.7µm)	0.0 – 5.0
Titanium Dioxide	9.0 – 10.0

Rigid Siding Substrate	
PVC Resin (K-65 to K-67)	100.0
Butyl Organotin Stabilizer	0.8 – 1.2
Calcium Stearate	0.8 – 1.2
Durastrength® 535 Impact Modifier	3.5 – 4.5
External Lubricant	1.0 – 1.5
Calcium Carbonate (0.7µm)	10.0 – 20.0
Titanium Dioxide	0.5 – 1.0

Ribbed Pipe	
PVC Resin (K-67)	100.0
Butyl Organotin Stabilizer	0.6 – 0.8
Paraffin Wax (165° F)	1.0 – 1.2
Calcium Stearate	0.6 – 0.8
Oxidized Polyethylene Wax	0.1 – 0.2
Durastrength® 535 Impact Modifier	4.0 – 6.0
Plastistrength® 770 Process Aid	0.0 – 0.5
Calcium Carbonate (0.7µm)	4.0 – 6.0
Titanium Dioxide	1.0 – 2.0

ENVIRONMENTAL AND SAFETY INFORMATION

Before handling this material, read and understand the MSDS (Material Safety Data Sheet) / SDS (Safety Data Sheet) for additional information on safety, health and environmental information. The MSDS/SDS are 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 Epoxy, (meth)-acrylic and other polymer 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 advice.

Durastrength® Impact Modifiers

Durastrength® acrylic impact modifiers deliver outstanding impact characteristics for outdoor durable applications in PVC and Engineering Resins.

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

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 epoxy and (meth)-acrylic resins.

Biostrength® Additives

Biostrength® product line of impact modifiers, melt strengtheners and metal release agents are designed to improve properties and enhance processability of polylactic acid (PLA) and other biopolymers compounds.

FOR MORE INFORMATION CONTACT

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