

## 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.

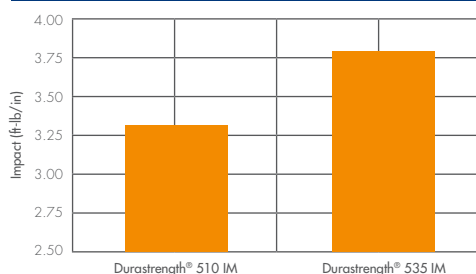
#### TYPICAL PHYSICAL PROPERTIES

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.

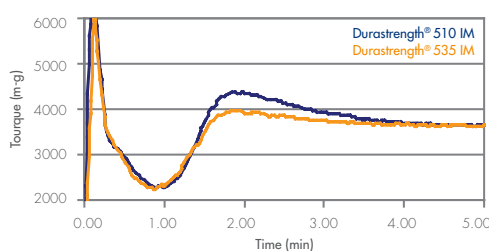
#### Room Temp Izod Impact 5.0 phr Modifier



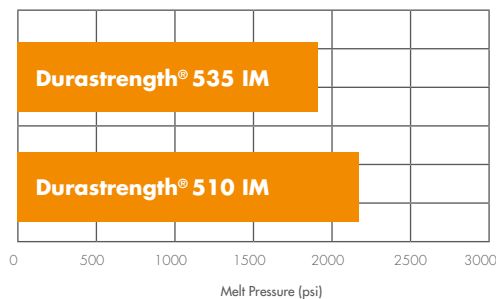
ASTM D256 specifications for notched Izod.

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.

#### 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.

#### COST EFFECTIVE PROFILE FORMULA

	Control	B	C
PVC Resin	100.0	100.0	100.0
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		
Methyl Organotin Stabilizer	1.2	1.2	1.2
CaST	1.2	1.2	1.2
AC629A	0.2	0.2	0.2
Paraffin	1.2	1.2	1.2
CaCO3	5.0	5.0	7.0
TiO2	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

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	4.0 – 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
Paraffin Wax (165°F)	1.0 – 1.2
Oxidized Polyethylene Wax	1.0 – 0.2
Durastrength® 535 Impact Modifier	3.0 – 4.0
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](http://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 and other polymer systems. Arkema produces a full line of impact modifiers, processing aids and epoxidized vegetable oils. 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 Modifiers

Clearstrength® MBS impact modifiers are designed for extreme impact or impact/clarity combination in PVC and Engineering Resins.

### Biostrength® Additives

The 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

Please contact your local account manager or our headquarters:

### In Europe:

ARKEMA  
Arkema Coating Resins  
420 Rue d'Estienne d'Orves  
92705 COLOMBES Cedex, France  
Tel: +33 (0) 149 008 080  
[www.arkema.com/en/products/contact](http://www.arkema.com/en/products/contact)

### In US:

Arkema Inc.  
Arkema Coating Resins  
410 Gregson Dr  
Cary, NC 27511  
Tel: +1 (877) 331-6696  
[www.arkema.com/en/products/contact](http://www.arkema.com/en/products/contact)

### In Asia:

Arkema Pte Ltd.  
10, Science Park Road, #01-01A,  
The Alpha Singapore Science Park II,  
Singapore 117684 Tel: +65 6419 9199  
[www.arkema.com/en/products/contact](http://www.arkema.com/en/products/contact)  
**VISIT US AT OUR WEBSITE**  
[www.additives-arkema.com](http://www.additives-arkema.com)

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, Arkema expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Device Policy regarding the use of Arkema products in medical device applications that are in contact with the body or circulating bodily fluids: (<http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html>). Arkema has designated Medical grades to be used for such medical device applications. Products that have not been designated as medical grades are not authorized by Arkema for use in medical device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices. It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.

Clearstrength® and Plastistrength® are registered trademarks of Arkema  
Biostrength® and Durastrength® are registered trademarks of Arkema Inc.

Responsible Care® is a registered trademark of the American Chemistry Council Inc.  
2017 Arkema Inc. All rights reserved.