ARIA POLYMER

THERE IS ALWAYS A BETTER WAY

ARIA POLYMER

Aria Polymer, established in 2009, is a multinational enterprise to provide technology research and manufacture tailor-made additives and functional polymers.

Aria Polymer is one of few players in the region to develop series of products to meet domestic and international market needs, including **Maleic Anhydride Grafted Polymers** used as **Coupling Agent and Compatibilizer**, and **Tie Layer Adhesive** used in **Multilayer Structures**, e.g., **Multilayer Films, Pipes, Tubes**, etc. In addition to these high-tech products, Aria polymer manufactures a wide range of **Additive Masterbatches** to **improve specifications of different polymers**. Accordingly, our various products are widely used in automotive, energy, construction, medicals, packaging and consumer goods.

Holding **ISO 9001** and **10004** and numerous certificates, Food and Drug Compliance and Oil Ministry Confirmation, being a member of different associations in Plastic and Polymer fields, having a well-equipped internal lab, accessing a wide range of petrochemical companies and a powerful supply chain, are all juxtaposed to enable Aria Polymer to provide the customers with state-of-the-art products.

Timeline

2008

The 4th Sheikh Bahaei Technopreneurship Festival Award

2009

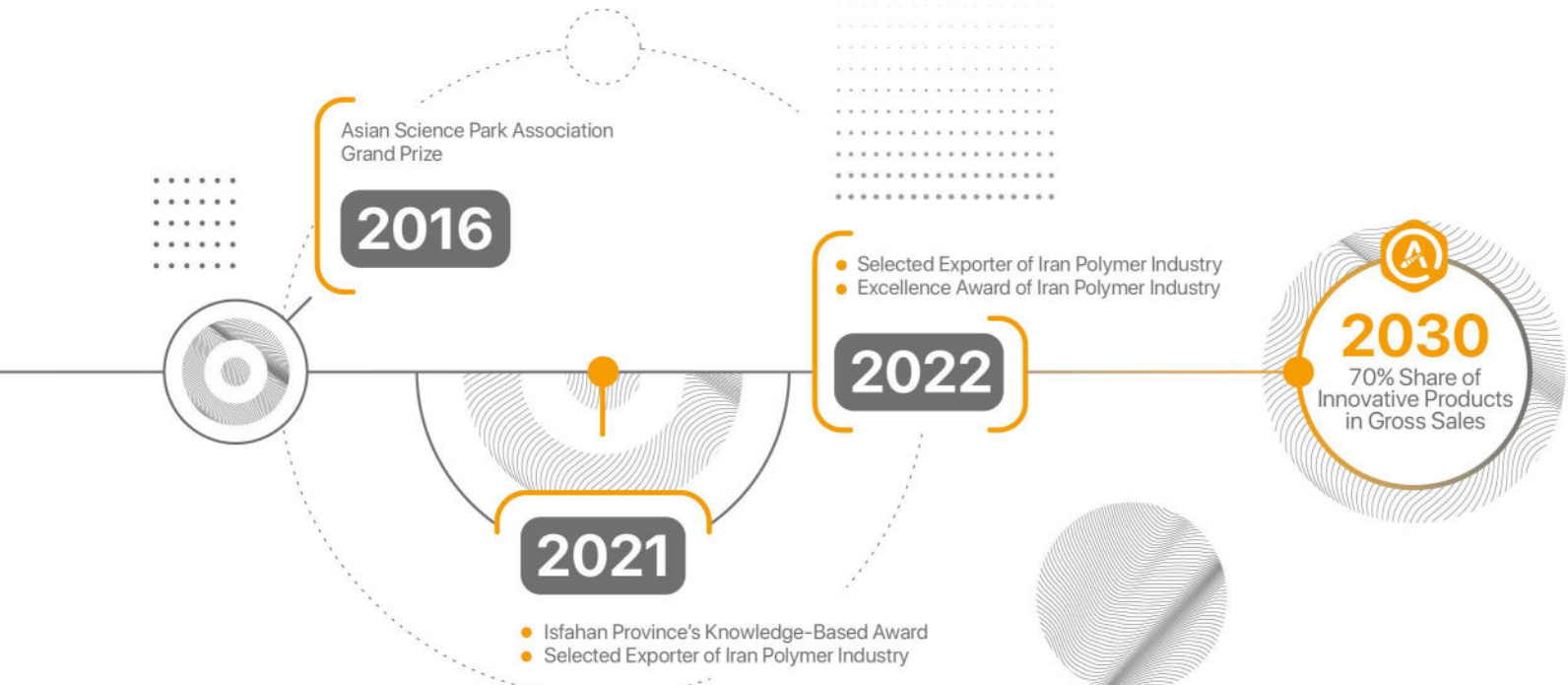
Aria Polymer Pishgam Co. Establishment

2014

Transferring Technical Knowledge of Nano Products (Iranian Plastic Society Successful Manager Award)

2015

- Iranian Nano Technology Festival Best-rated Product Award
- Isfahan Province Premier Technological Company Award
- The 11th Sheikh Bahaei Technopreneurship Festival Award


Asian Science Park Association
Grand Prize
2016
2021
Isfahan Province's Knowledge-Based Award
Selected Exporter of Iran Polymer Industry
2022
Selected Exporter of Iran Polymer Industry
Excellence Award of Iran Polymer Industry
2030
70% Share of
Innovative Products
in Gross Sales

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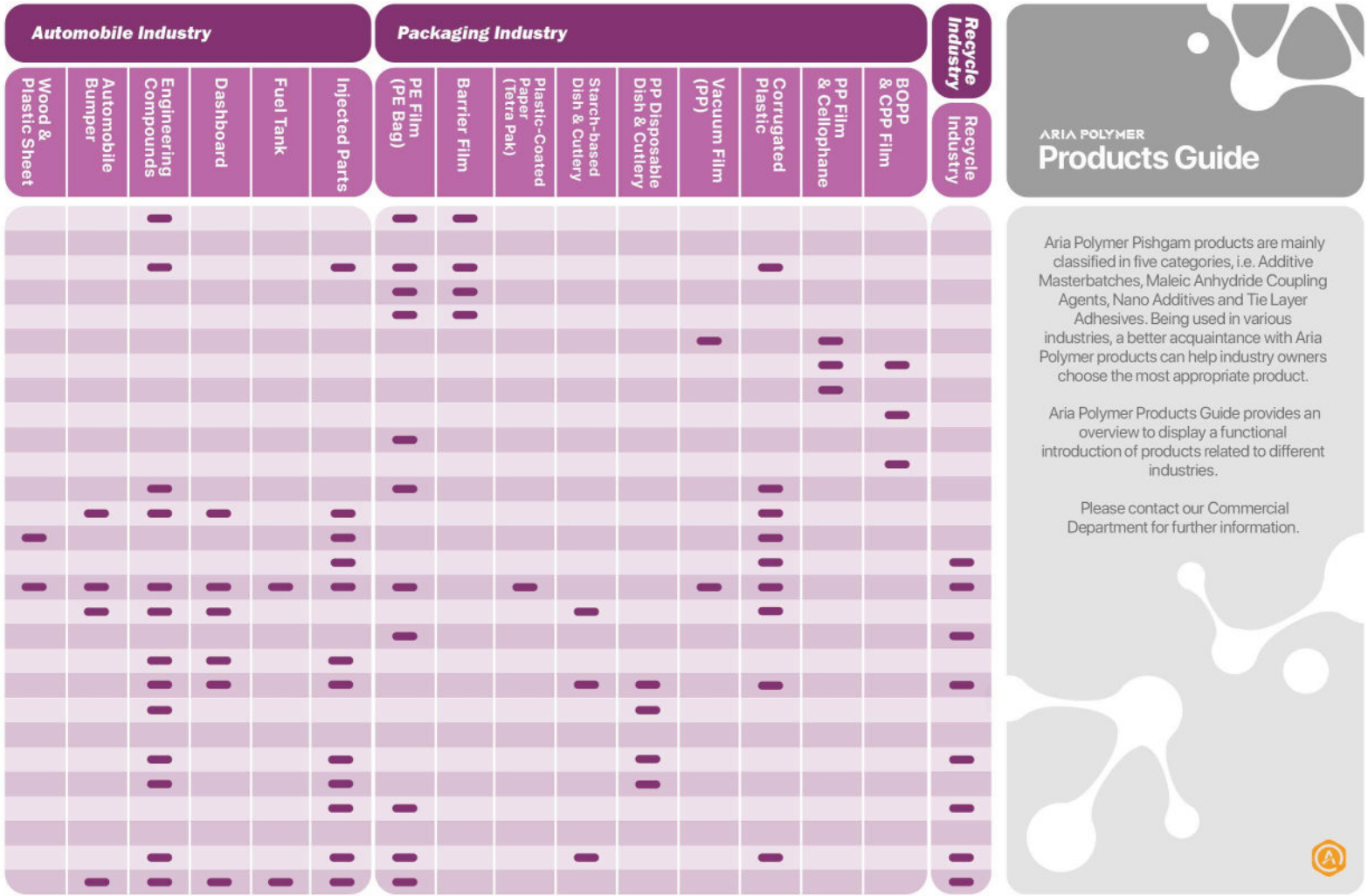
Products Guide

			Textile Industry		Road Construction & Building Industry							
			Non-Woven Fabric	Woven Bag	UPVC Pipe, Profile, Wall Covering & Cornice	UPVC Sheet & Flooring	Geomemberant Film	PE Water Supply Pipe	Electronic Devices	Power Distribution Box	Bulky Injection Parts	Wire & Cable
1	Additive Masterbatch	Anti-Block Agent Masterbatch PE	Aria Add 2123									
2		Slip & Anti-Block Agent Masterbatch PE (Erucamide)	Aria Add 2125									
3		Slip Agent Masterbatch PE (Oleamide)	Aria Add 2126						●	●	●	
4		Slip & Anti-Block Agent Masterbatch PE	Aria Add Mix 2126									
5		Slip & Anti-Block Agent Masterbatch PE	Aria Add 2136									
6		Slip Agent Masterbatch PP	Aria Add 2226									
7		Slip & Anti-Block Agent Masterbatch PP	Aria Add 2226T112									
8		Slip Agent Masterbatch PP	Aria Add 2227									
9		Slip & Anti-Block Masterbatch BOPP & CPP	Aria Add 2236									
10		Anti-Block Masterbatch PE	Aria Add 2124									
11		Anti-Block Masterbatch PP	Aria Add 2424									
12		Anti-UV Masterbatch PE	Aria Add 2176						●	●	●	
13		Anti-UV Masterbatch PP	Aria Add 2273	●	●				●	●	●	
14		Processing Aid Masterbatch	Aria Add 2101					●	●			
15		Processing Aid Masterbatch	Aria Add 2106	●				●	●			●
16		Antioxidant Masterbatch PE	Aria Add 2130	●				●	●	●	●	●
17		Antioxidant Masterbatch PP	Aria Add 2431		●							
18		Optical Brightener Masterbatch	Aria Add 2161	●	●							
19		Anti-Shrink & Anti-Warpage Masterbatch PP	Aria Add 2458									
20		PP MFI 1500	Aria Add 2440T139	●	●				●	●	●	●
21		PP Clarifier Masterbatch	Aria Add 2450									
22		UPVC Impact Modifier	Aria Add 1213			●	●			●		
23		Polyolefin Impact Modifier	Aria Comp 4203					●		●		●
24		Polyolefin Impact Modifier	Aria Comp 4410									●
25		Desiccant Masterbatch	Aria Add 2180									
26		PP Compound	Aria Comp 4329									●
27		White Masterbatch	Aria Add 2111	●	●				●	●	●	●
28		Black Masterbatch	Aria Add 2190					●	●	●	●	●



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Products Guide

Aria Polymer Pishgam products are mainly classified in five categories, i.e. Additive Masterbatches, Maleic Anhydride Coupling Agents, Nano Additives and Tie Layer Adhesives. Being used in various industries, a better acquaintance with Aria Polymer products can help industry owners choose the most appropriate product.

Aria Polymer Products Guide provides an overview to display a functional introduction of products related to different industries.

Please contact our Commercial Department for further information.

ARIA POLYMER

Products Guide

29	PP-g-MA	PP Coupling Agent	Aria Couple 1431
30		PP Coupling Agent	Aria Couple 1432
31		PP Coupling Agent (WPC)	Aria Couple 1433
32	PE-g-MA	HDPE Coupling Agent	Aria Couple 1141
33		LLDPE Coupling Agent	Aria Couple 1196
34	ABS-g-MA	ABS/PC Compatibilizer	Aria Couple 1732
35	EVA-g-MA	TPE Coupling Agent	Aria Couple 1937
36	TPE-g-MA	PA Impact Modifier	Aria Couple 1946
37		PA & PC Impact Modifier	Aria Couple 1947
38	PS-g-MA	PS/PA & PU Compatibilizer	Aria Couple 1631

Road Construction & Building Industry

Wood & Plastic Profile	Electronic Devices	Power Distribution Box	Bulky Injection Parts	Wire & Cable
	●	●	●	
●				
●				●
				●
	●	●		
				●
			●	

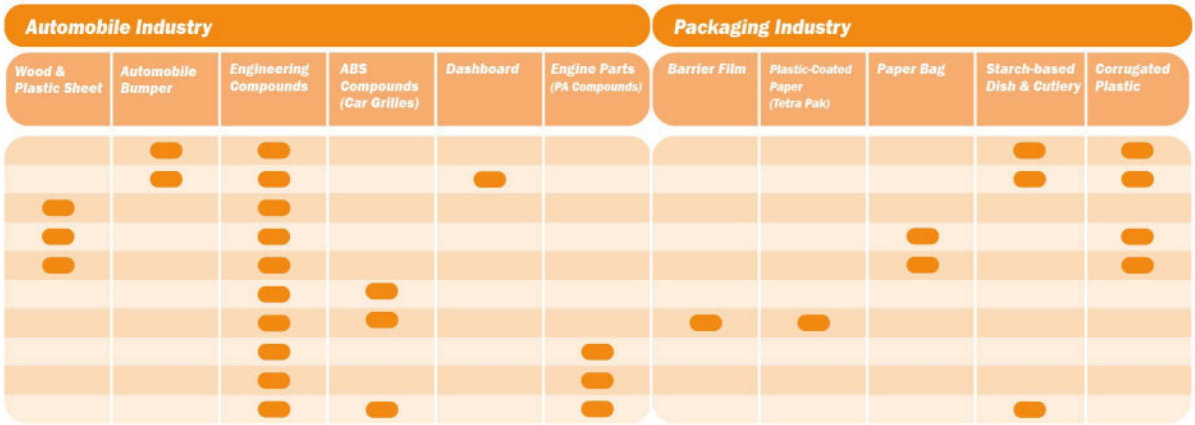
39	Tie Layer Adhesives	Tie Layer Adhesive for Packaging	Aria Adhesive 4100T250
40		Tie Layer Adhesive for Steel Pipe Coating	Aria Adhesive 4107
41		Tie Layer Adhesive for PEX/PERT-AL	Aria Adhesive 4107T242
42		Tie Layer Adhesive for Pipes (EVOH)	Aria Adhesive 4100T276
43		Tie Layer Adhesive for Pipes (PP)	Aria Adhesive 4407
44		Tie Layer Adhesive for Plastic Fuel Tanks	Aria Adhesive 4106

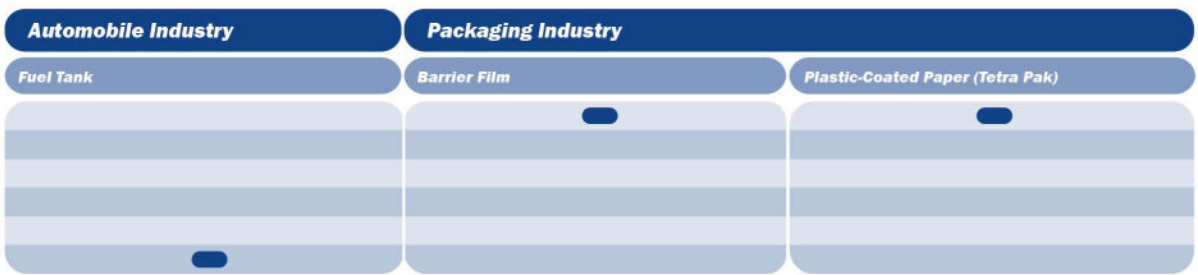
Road Construction & Building Industry

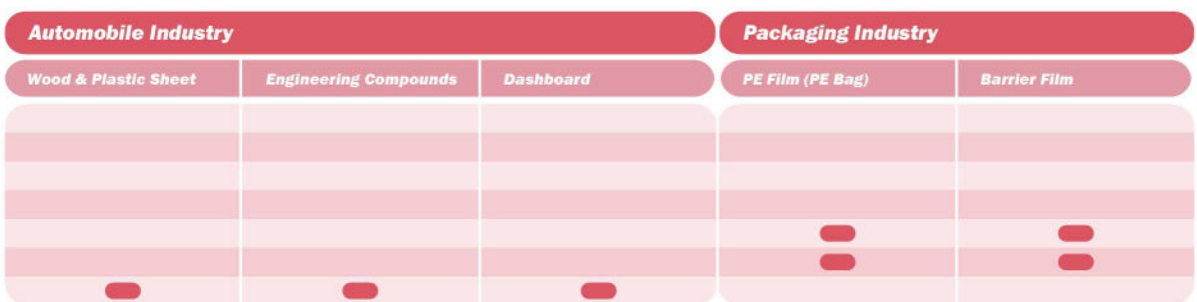
PEX/PERT Multilayer Pipe	Steel Pipe Coating	PP Multilayer Pipe
	●	
●		
●		
		●

45	Nano Additives	UPVC Pipe Nano Additive	Aria Nano 701
46		UPVC Fitting Nano Additive	Aria Nano 801
47		UPVC Profile Nano Additive	Aria Nano 901
48		Dimension Stabilizer Masterbatch PP	Aria Nano 2451
49		Reduce Oxygen Permeability Nano Additive	Aria Nano 4355
50		Anti-Bacterial Polyethylene Masterbatch	Aria Nano 4365
51		Anti-Scratch Masterbatch	Aria Nano 5600

Textile Industry	Road Construction & Building Industry
Woven Bag	UPVC Pipe, Profile, Wall Covering & Cornice
	●
	●
	●
●	







ARIA POLYMER

Certification

Aria Polymer Pishgam Co.
has been found to conform to the Quality Management System Standard:

ISO 9001:2015

This Certification is valid for the following product orservice range:
Manufacturing of Polymer Additive

Aria Polymer Pishgam Co.
has been found to conform to the Quality Management System Customer satisfaction- Guidelines for Monitoring and Measuring Standard:

ISO 10004:2018

This Certification is valid for the following product or service range:
Manufacturing of Polymer Additive

Aria Add

Additive Masterbatch

Aria Add has given a new life to plastic industry. Masterbatches are additive concentrates based on plastic resin. Masterbatches e.g. Slip Agent, Anti-UV, Antioxidant, Anti-Static, Clarifier Agent, etc. are used in every typical plastic process, such as injection molding, blow molding and extrusion molding.

Anti-Block Agent Masterbatch

Aria Add 2123

Description

Aria Add 2123 is an economic inorganic anti-blocking agent masterbatch, containing additives which create separation between the surfaces and improve performance characteristics in blown film and cast application.

Product Application

Anti-block agent for blown film and cast application

Advantages

- Increase separation of film layers
- Improve performance characteristic
- Melt flow control

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Active Ingredients	7 – 10%	
Density	0.96±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	2 ± 0.7 g/10min	ASTM D1238
Usage Level	0.5-5%	

Slip & Anti-Block Agent Masterbatch

Aria Add 2125

Description

Aria Add 2125 is an economical slip agent master-batch, containing additives which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in blown film and cast application.

Product Application

Slip & anti-block agent masterbatch

Advantages

- Improve melt flow control
- Easily opening
- Lower coefficient of friction (COF)
- Enhance both appearance and function

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Active Ingredients	>10%	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4.5 ± 1.5 g/10min	ASTM D1238
Usage Level	0.5-5%	

Slip Agent Masterbatch

Aria Add 2126

Description

Aria Add 2126 is an economical slip agent masterbatch based on polyethylene, containing additives which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in blown film and cast application.

Product Application

Slip agent for blown film and cast application

Mold release agent for injection molding

Advantages

- Friction reduction, fast slip
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control

- Improve surface finish
- Improve flow dispersion of filled polymers
- Reduce machine wear and cleaning time
- Increase production rate

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Active Ingredients	10 – 12 %	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	5 ± 1.5 g/10min	ASTM D1238
Usage Level	0.5-5%	

Slip & Anti-Block Agent Masterbatch

Aria Add Mix 2126

Description

Aria Add Mix 2126 is a slip and anti-block agent masterbatch, containing additives which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in blown film and cast application. It provides an optimal mix between the slip agent and the anti-block agent.

Product Application

Slip and anti-block agent for blown film and cast application

Advantages

- Friction reduction, slow slip
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control
- Polyethylene (PE) based slip & anti-block agent masterbatch

Properties

Typical Value	Value	Method
Appearance	Milky Granules	-
Carrier Resin	PE	-
Active Ingredients	>10%	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4.5±1.5 g/10min	ASTM D1238
Usage Level	0.5-5%	

Slip & Anti-Block Masterbatch

Aria Add 2136

Description

Aria Add 2136 is a slip & anti-block masterbatch agent, containing additives which manage an optimal mix between the slip agent and anti-block agent and improve the coefficient of friction and create separation between the surfaces.

Product Application

Slip & anti-block masterbatch

Advantages

- Improve melt flow control
- Lower coefficient of friction
- High slip
- Excellent open-ability

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Anti-Block Agent Content	>10%	-
Slip Content	>15%	
Density	0.92±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	7 ± 2 g/10min	ASTM D1238
Usage Level	0.5 - 2%	

Slip Agent Masterbatch

Aria Add 2226

Description

Aria Add 2226 is an economical slip agent masterbatch based on polypropylene, containing additives which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in film and cast application.

Product Application

Slip agent for film and cast application

Advantages

- Friction reduction
- Product processing: sheet, film & other extrusion processes (PP)
- Increase production rate
- Improve flow & dispersion of filled polymers

Properties

Typical Value	Value	Method
Appearance	Milky Granules	-
Carrier Resin	PP	-
Active Ingredients	>10%	
Density	0.91±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4 ±1.5 g/10min	ASTM D1238
Usage Level	0.5-2%	

Slip & Anti-Block Agent Masterbatch

Aria Add 2226T112

Description

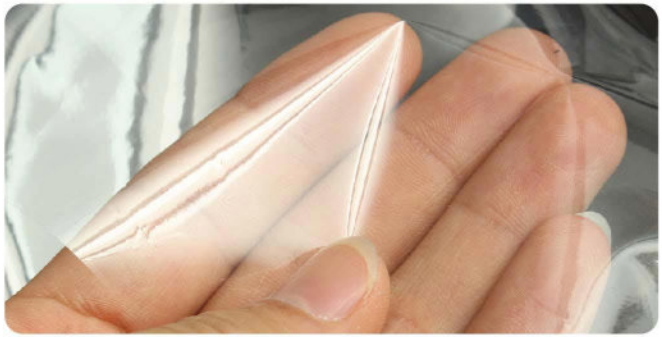
Aria Add 2226T112 is an economical slip & anti-block agent masterbatch based on polypropylene, containing an additive which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in blown film, cast, and BOPP application.

Product Application

Slip agent for blown film and cast application

Advantages

- Fast migration slip agent
- Improve anti-static properties
- Friction reduction
- Improve antistatic properties
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control



Properties

Typical Value	Value	Method
Appearance	White to Grayish Granules	-
Carrier Resin	PP	-
Active Ingredients	>10%	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4 ± 1.5 g/10min	ASTM D1238
Usage Level	0.5-2.5%	

Slip Agent Masterbatch

Aria Add 2227

Description

Aria Add 2227 is an economical slip agent masterbatch based on polypropylene, containing additives which manage the coefficient of friction and create separation between the surfaces and improve performance characteristics in blown film and cast application.

Product Application

Slip agent for blown film and cast application

Advantages

- Friction reduction
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control
- It provides softness & flexibility

Properties

Typical Value	Value	Method
Appearance	Milky Granules	-
Carrier Resin	PP	-
Active Ingredients	>10%	
Density	0.91±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	5 ± 2 g/10min	ASTM D1238
Usage Level	0.5-2%	

Slip & Anti-Block Agent Masterbatch

Aria Add 2236

Description

Aria Add 2236 is a slip & anti-block agent masterbatch based on polypropylene and contains additives which manage an optimal mix between slip agent and anti-block agent and provide the coefficient of friction and create separation between the surfaces. It improves performance characteristics in blown film, cast, and BOPP applications.

Product Application

Slip agent for film, cast, and BOPP applications

Advantages

- The blown film, cast, and BOPP application
- Friction reduction
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control

Properties

Typical Value	Value	Method
Appearance	White to Grayish Granules	-
Carrier Resin	PP	-
Active Ingredients	>15%	
Density	0.92±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4 ± 1 g/10min	ASTM D1238
Usage Level	0.5-2.5%	

Anti-Block Agent Masterbatch

Aria Add 2124

Description

Aria Add 2124 is an economical anti-block agent masterbatch, containing additives which create separation between the surfaces and improve performance characteristics in blown film and cast application. Typically, anti-block additives have low compatibility with the polymer, allowing migration to the film surface.

Product Application

Anti-block agent for blown film and cast application

Advantages

- Increase separation of film layers
- Improve performance characteristic
- Melt flow control

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Active Ingredients	>10%	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	4.5±1.5 g/10min	ASTM D1238
Usage Level	0.5-5%	

Anti-Block Agent Masterbatch

Aria Add 2424

Description

Aria Add 2424 is an inorganic anti-blocking agent masterbatch, containing additives which create separation between the surfaces and improve performance characteristics in blown film and cast application.

Product Application

Anti-block agent for blown film and cast application

Advantages

- Polypropylene (PP) based anti-block agent masterbatch
- Increase separation of film layers
- Improve performance characteristic
- Melt flow control

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PP	-
Active Ingredients	>10%	
Density	0.92±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	3 ± 1 g/10min	ASTM D1238
Usage Level	0.5-5%	

Anti-UV Masterbatch

Aria Add 2176

Description

Aria Add 2176 is a polyethylene-based masterbatch designed to provide long-lasting protection for PE products. It is a light stabilizer masterbatch containing a mixture of HALS (Hindered Amide Light Stabilizer) & UV absorbers.

Product Application

UV protection, especially for PE films, sheets & parts

Advantages

- Increasing product lifetime
- Increasing color stability
- Preserving physical and mechanical degradation

Properties

Typical Value	Value	Method
Appearance	Yellowish Granules	-
Carrier Resin	LDPE	-
Active Ingredients	>20%	
Density	0.92±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	7±2.5 g/10min	ASTM D1238
Usage Level	0.5-10%	

Anti-UV Masterbatch

Aria Add 2273

Description

Aria Add 2273 is a polypropylene-based masterbatch designed to provide long-lasting protection for PP films, sheets & parts. It is a light stabilizer masterbatch containing a mixture of HALS (Hindered Amide Light Stabilizer) & UV absorbers.

Product Application

UV protection for PP parts, packaging, especially woven bags & nonwoven fabrics

Advantages

- Increasing product lifetime
- Increasing color stability
- Preserving physical and mechanical degradation

Properties

Typical Value	Value	Method
Appearance	Granules	-
Carrier Resin	PP	-
Active Ingredients	>20%	
Density	0.91±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	5±2 g/10min	ASTM D1238
Usage Level	1-5%	

UV Masterbatch Effectiveness

PP Bag Denier	900	1200	1600	1800	2100
Tensile Strength Loss (%) with 2% of 2273	33%	30%	24%	21%	19%

Processing Aid Masterbatch

Aria Add 2101

Description

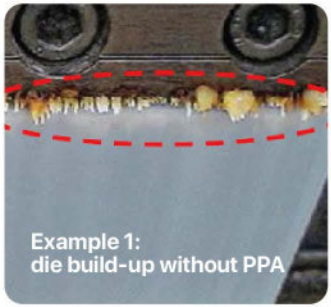
Aria Add 2101 is a processing aid (PPA) masterbatch, containing fluoropolymer based in a polyethylene carrier. It can improve PE processing and be recommended for polyolefin sheets, pipes, tubes, extrusion processes and stone paper.

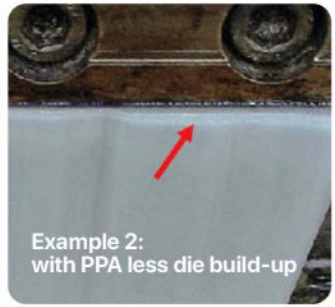
Product Application

PPA for polyolefin sheets, stone paper, and extrusion processes

Advantages

Melt fracture elimination	• Less machine-direction drawing • Surface smoothness • Improve the processability of recycled polymer
Less cooling requirement	• Improve processing lower MFI resins • Better balance of properties
Act as a lubricant to allow molten polymers to slide much easier	• Reduce operating pressure, temperature, and amperage draw • Increase output, energy saving & decrease degradation





Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Density	0.92±0.01	ASTM D792
Melt Flow Index @190°C /2.16kg	2±1 g/10min	ASTM D1238
Usage Level	0.5-2.5%	

- For testing Aria Add 2101, at first, please add 5% of Aria Add 2101 in order to be saturated, and then reduce the amount to the usage level mentioned above.

Processing Aid Masterbatch

Aria Add 2106

Description

Aria Add 2106 is a processing aid (PPA) masterbatch, containing fluoropolymer (PVDF) based in a polyethylene carrier. It can improve PE processing and be recommended for polyolefin films, sheets, pipes, tubes, extrusion processes and stone paper.

Product Application

PPA for polyolefin films, sheets, pipes, tubes and paper stone

Advantages

- Less machine-direction drawing
- Improve the processability of recycled polymer
- Die build-up monitoring in Cast Film Line
- Surface smoothness
- Improve processing lower MFI resins
- Melt fracture elimination
- Reduce operating pressure and temperature
- Increase output and energy saving

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PE	-
Density	0.92±0.01	ASTM D792
Melt Flow Index @190°C /2.16kg	2±1 g/10min	ASTM D1238
Usage Level	0.5-2.5%	

- For testing Aria Add 2106, at first, please add 5% of Aria Add 2106 in order to be saturated; and then reduce the amount to the usage level mentioned above.

Antioxidant Masterbatch

Aria Add 2130

Description

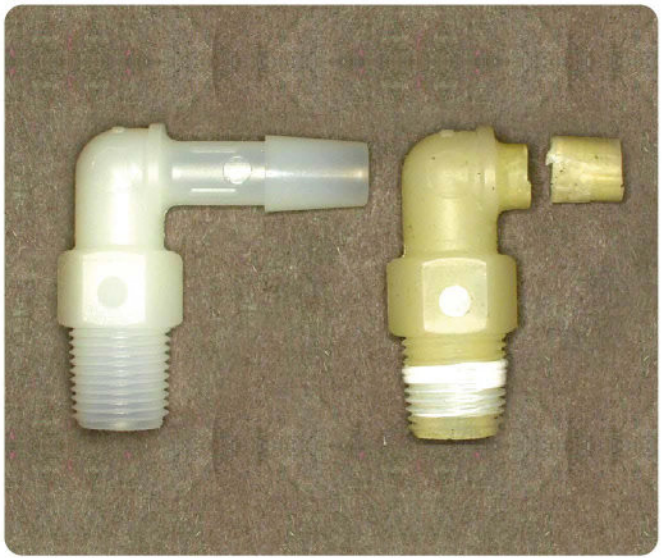
Aria Add 2130 is an antioxidant masterbatch based on PE for the thermal stabilization of various polymers. This concentrate is containing a mixture of primary and secondary antioxidants.

Product Application

Antioxidant for thick and thin sections

Advantages

- Improve melt flow control
- Lower initial color and outstanding color maintenance
- Improved compatibility of additive with matrix
- Avoid oxidative degradation in higher temperatures



Properties

Typical Value	Value	Method
Appearance	Milky Granules	-
Active Ingredients	>10%	
Carrier Resin	HDPE	-
Density	0.92±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	7±4 g/10min	ASTM D1238
Usage Level	1-3%	

Aria Add 2130 Effectiveness

	Method	Temperature	OIT
1% Aria Add 2130	PE	200	80 min
2% Aria Add 2130	PE	200	>100min

Antioxidant Masterbatch

Aria Add 2431

Description

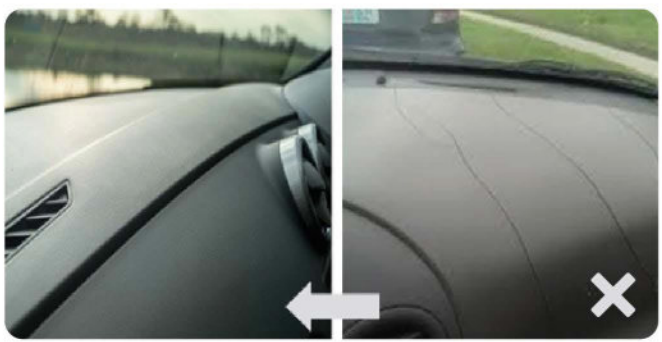
Aria Add 2431 is an antioxidant masterbatch based on PP for the thermal stabilization of various polymers. This concentrate is containing a mixture of primary and secondary antioxidants.

Product Application

Antioxidant for thick and thin sections

Advantages

- Improve melt flow control
- Lower initial color and outstanding color maintenance
- Improved compatibility of additive with matrix
- Avoid oxidative degradation in higher temperatures



Properties

Typical Value	Value	Method
Appearance	Granules	-
Active Ingredients	>10%	
Carrier Resin	PP	-
Density	0.91±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	2.5±1 g/10min	ASTM D1238
Usage Level	1-3%	

Optical Brightener Masterbatch

Aria Add 2161

Description

• Optical brightener masterbatch (fluorescent whitening agent) absorbs some part of the UV ray and re-emits it in the blue region of the visible spectrum.
• Aria Add 2161 is added in polymers to reduce yellowing, improve whiteness, and enhance the brightness of a product.

Product Application

PE films, sheets, parts and other extrusion processes

Advantages

- Mask natural yellowing plastics
- Improve initial color
- Get brilliancy of colored articles
- It gives a smooth & glossy surface to film
- Absorbs UV radiation

Properties

Typical Value	Value	Method
Appearance	Phosphoric Granules	-
Carrier Resin	HDPE	-
Density	0.92±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	5±1 g/10min	ASTM D1238
Usage Level	0.2-1.5 %	

Anti-Shrink & Warpage Masterbatch

Aria Add 2458

Description

Aria Add 2458 is an anti-shrink & warpage master-batch based on a polyolefin carrier. It is designed to eliminate distortions and skews in products.

Product Application

Anti-shrink & warpage masterbatch

Advantages

- Preventing shrinkage & warpage
- Dimensional stability
- Increase production rate
- Improves impact strength
- Minimize warpage problem
- No adverse effect on mechanical properties

Properties

Typical Value	Value	Method
Appearance	Pellet	-
Carrier Resin	PP	-
Density	1.02±0.02 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	0.95 ± 0.5 g/10min	ASTM D1238
Usage Level	0.5-3%	

High MFI PP

Aria Add 2440 T139

Description

Aria Add 2440T139 is a high MFI polypropylene compound. It is designed to be used in melt-blown and spun-bond fiber processing.

Product Application

Melt blown process

Advantages

- High MFI PP compound
- Designed to be used in nonwoven fabrics
- Easy melt blow processing
- Completely soft surface
- High tensile strength & tear resistance

Properties

Typical Value	Value	Method
Appearance	White Granules	-
Carrier Resin	PP	-
Density	0.9±0.01	ASTM D792
Melt Flow Index @190°C /2.16kg	≥90 g/10min	ASTM D1238

Processing Parameters

Temperature Range in Extruder Zones	Extruder speed	DCD
190-230	300-400 RPM	25-27 CM

PP Clarifier Masterbatch

Aria Add 2450

Description

Aria Add 2450 is a PP clarifier masterbatch applied to improve the clarity of PP by making small crystallites during the processing stage. It reduces haze and increases the transparency of sheet, film, blown & injection molded parts based on polypropylene.

Product Application

PP clarifier masterbatch

Advantages

- Used in blown and injection parts to reach a high gloss
- Used in polypropylene sheet to produce thermoforming container
- Reduces the cycle time and the cooling of the finished article
- Faster crystallization

Properties

Typical Value	Value	Method
Appearance	Glassy Granules	-
Carrier Resin	PP	-
Density	0.91±0.01 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	0.5 ± 0.2 g/10min	ASTM D1238
Usage Level	1-3%	

UPVC Impact Modifier

Aria Add 1213

Description

Functionalized high performance ethylene base polymer resin produced by reactive extrusion.

Product Application

Impact Modifier	For UPVC pipes, wall covering and profiles.

Advantages

Dispersion	Achieve optimum mechanical properties with keeping final product price at a reasonable level.
Mechanical Properties	Improve mechanical properties e.g., Tensile strength, impact resistance & flexural modulus in PVC pipes and profiles.
Other	• Eliminate output variation • Increase permeability of final product • Achieve dimensional stability • Increase smooth surface of final products

Properties

Typical Value	Value	Method
Density	0.93±0.01	ASTM D792
Melt Flow Index @190°C /5 kg	1±0.3	ASTM D1238
Usage Level	0.2-1.5%	

Impact Modifier and Stitching Improver based Polyolefin

Aria Comp 4203

Description

Aria Comp 4203 polymer resin is a polyolefin base compound. It has been primarily designed to act as an impact modifier of polypropylene and polyethylene containers and parts.

Product Application

Impact Modifier

- Containers and parts
- Sealant film
- PE film
- Stretch film

Advantages

- Improving impact properties of polyolefin containers without changing in transparency
- Increase in film stretch and elongation

Properties

Typical Value	Value	Unit	Method
Density	0.90 ± 0.02	g/cm³	ASTM D792
Melt Flow Index @190°C /2.16kg	2.7 ± 0.5	g/10 min	ASTM D1238
Usage Level	1 - 5	%	-

Impact Modifier based Polypropylene

Aria Comp 4410

Description

Aria Comp 4410 polymer resin is a polypropylene base compound. It has been primarily designed to act as an impact modifier of polypropylene containers and parts.

Product Application

Impact Modifier

Containers and parts

Advantages

- Improving impact properties of polyolefin containers without changing in transparency
- Scratch resistance of PP plastic containers

Properties

Typical Value	Value	Unit	Method
Density	0.91±0.02	g/cm^3	ASTM D792
Melt Flow Index @190^{o}C /2.16kg	2.5 ± 1	g/10 min	ASTM D1238
Usage Level	3 - 7	%	-

Desiccant Masterbatch

Aria Add 2180

Description

Aria Add 2180 is a desiccant masterbatch designed to absorb the moisture in plastics and nylon in order to eliminate moisture-related problems.

Product Application

Desiccant masterbatch

Advantages

- Improves product quality and yield
- Increase productivity and reduce energy consumption
- Reduce prevention of moisture-related problems, including lacing and porosity of the molded problem
- Minimizes down glossing and hazing under high humidity application conditions

Properties

Typical Value	Value	Method
Appearance	Granules	-
Active Ingredients	>70%	
Carrier Resin	PE	-
Density	1.9±0.1 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	1±0.5 g/10min	ASTM D1238
Usage Level	0.5-1.5%	

Polyolefin Compound (Injection Molding)

Aria Comp 4329

Description

Aria Comp 4329 polymer resin is a polyolefin base compound. It has been primarily designed to injection molding for parts.

Product Application

Polyolefin Compound

Injection molding for parts.

Advantages

- Good impact properties.
- Proper processability.

Properties

Typical Value	Value	Unit	Method
Density	0.92±0.01	g/cm³	ASTM D792
Melt Flow Index @230°c /2.16kg	9±2	g/10 min	ASTM D1238
Melting Temperature	150 ± 5	°C	ISO 113571
Vicat Softening Point	134 ± 4	°C	ASTM D 1525
Tensile Strain at Break(50mm/min)	>120	%	ASTM D638
Tensile Stress at Yield(50mm/min)	23 ± 5	MPa	ASTM D638
Flexural Modulus	1500	MPa	ASTM D 790
Izod Impact Strength (notched) at 23 °c	78	J/m	ASTM D 256

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

White Masterbatch

Aria Add 2111

Description

- Aria Add 2111 is a well-dispersed polyethylene based masterbatch.
- Aria Add 2111 has very high color strength and good flow properties.

Product Application

White masterbatch for PE

Advantages

- Well dispersed
- Excellent hiding power
- Excellent whiteness
- Good melt strength

Properties

Typical Value	Value	Method
Appearance	White Granules	-
White Pigment	According to request, 40-70%	ASTM D4218
Carrier Resin	PE	-
Density	1.8±0.3 g/cm3	ASTM D792
Melt Flow Index @190°C /2.16kg	8±4 g/10min	ASTM D1238
Moisture	Max 0.1%	ASTM D644
Usage Level	According to condition and requirements	

Black Masterbatch

Aria Add 2190

Description

- Aria Add 2190 as a grade of black masterbatch, is specified for pipe productions and also compounding of different olefin-based plastics. In addition, it is suitable for other applications, ranging from injected products to films.
- Black masterbatch based on a mixture of high-density polyethylene filled with 40% carbon black.

Advantages

- Consisting of coupling agents and completely miscible with a vast range of plastics
- A coloring agent in addition to thermal-mechanical properties modifier
- Easiness in usage

Properties

Typical Value	Value	Method
Appearance	Black Granules	-
Carbon Black Pigment	>40%	ASTM D4218
Carrier Resin	PE	-
Density	1.1±0.1 g/cm3	ASTM D792
Melt Flow Index @190°C /5kg	<0.5 g/10min	ASTM D1238
Absorption Moisture	<0.05%	ASTM D644
Decomposition Temperature Onset (°C)	120 ≤ Min,190 ≤ Max ≤ 280	ASTMD 3418
OIT (200°C)	20 min ≤ OIT	ISIRI 7186-6
Usage Level	According to condition and requirements	

Aria Couple

Coupling Agent

Aria Couple are polymers that are functionalized with maleic anhydride which are compatible with both polar and non-polar materials. Polar materials include fillers (e.g., $CaCO_3$, Wood Flour and Starch), reinforcing materials (e.g., Glass Fiber) and polar polymers (e.g., PA, PC).

Therefore, Aria Couple is used when we want to mix polar and non-polar materials, to achieve desirable properties in compounding industry. These properties can be different depending on the components of the compound. From improving impact resistance to increasing tensile strength and elongation, or increasing filler content without affecting polymer properties in order to improve biodegradability or reducing price and recovering recycled materials.

Maleic Anhydride Grafted Polypropylene

Aria Couple 1431

Description

- Maleic anhydride functionalized polypropylene produced by reactive extrusion.
- Coupling agent & compatibilizer between polyolefin & polar polymers, fillers, etc.

Product Application

		Usage
Coupling Agent for PP	• Reinforcing materials, e.g., GF in PP/GF compounds	1.5-2.5%
	• Fillers e.g., $CaCO_3$ polyolefin-based compounds	1.5-3%
Compatibilizer for PP	Polar polymers e.g., polyamide	1.5-3%

Advantages

Dispersion	Achieve optimum dispersion & distribution of polar polymer, fillers, starch, glass fiber, etc., in the non-polar polymer matrix
Mechanical Properties	Enhance mechanical properties, e.g., tensile strength, impact resistance and flexural modulus in polyolefin and biodegradable containers
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	0.91	ASTM D792
Melt Flow Index @190°C /2.16kg	75±20	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%

Maleic Anhydride Grafted Polypropylene

Aria Couple 1432

Description

- Maleic anhydride functionalized polypropylene produced by reactive extrusion.
- Coupling agent & compatibilizer between polyolefin & polar polymers, fillers, etc.

Product Application

		Usage
Coupling Agent for PP	• Reinforcing materials e.g., GF in PP/GF compounds	1.5-2.5%
	• Fillers e.g., $CaCO_3$ polyolefin-based compounds	1.5-3%
Compatibilizer for PP	Polar polymers e.g., polyamide	1.5-3%

Advantages

Dispersion	Achieve optimum dispersion & distribution of polar polymer, fillers, starch, glass fiber, etc., in the non-polar polymer matrix
Mechanical Properties	Enhance mechanical properties, e.g., tensile strength, impact resistance and flexural modulus in polyolefin and biodegradable containers
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	0.91	ASTM D792
Melt Flow Index @190°C /2.16kg	75±20	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%

Maleic Anhydride Grafted Polypropylene

Aria Couple 1433

Description

- Maleic anhydride functionalized polyolefin produced by reactive extrusion.
- Coupling agent & compatibilizer between polyolefin & wood plastic composites.

Product Application

		Usage
Coupling Agent	In wood flour reinforced polymer composites (WPC)	1.5-3%

Advantages

Dispersion	Achieve suitable dispersion and distribution of wood in polymer matrix
Mechanical Properties	Enhance mechanical properties, e.g., tensile strength, impact resistance & flexural modulus
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	0.91	ASTM D792
Melt Flow Index @190°C /2.16kg	15±5	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%

Maleic Anhydride Grafted Polyethylene

Aria Couple 1141

Description

- Maleic anhydride functionalized polyethylene produced by reactive extrusion.
- Coupling agent & compatibilizer between polyolefin & polar polymers, fillers, and reinforcing agents.

Product Application

		Usage
Coupling Agent for PE or PVC	• Reinforcing materials, e.g., wood in wood-plastic composites	1.5-5%
	• Fillers, e.g., starch in biodegradable polyolefin compounds	1.5-5%
Compatibilizer for PE	Polar polymers e.g., polyamide	1.5-5%

Advantages

Dispersion	Achieve optimum dispersion & distribution of polar polymer, fillers, starch, glass fiber, etc., in the non-polar polymer matrix
Mechanical Properties	Improve mechanical properties, e.g., tensile strength, impact resistance & flexural modulus in polyolefin & biodegradable containers
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	0.945	ASTM D792
Melt Flow Index @190°C /5 kg	2-4	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%, Very High > 1.0wt%.

Maleic Anhydride Grafted Polyethylene

Aria Couple 1196

Description

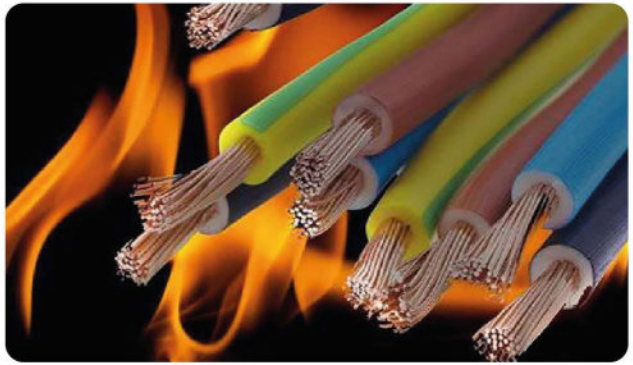
- Maleic anhydride functionalized polyethylene produced by reactive extrusion.
- Coupling agent & compatibilizer between polyolefin & polar polymers, fillers, etc.

Product Application

		Usage
Coupling Agent for PE or PVC	• Fillers, e.g., starch in biodegradable polyolefin compounds	1.5-5%
	• Reinforcing agents such as glass fiber, wood flour, and HFFR additives	1.5-6%
	• Adhesion promoter for PE films or lamination coating	5-15%
Compatibilizer PE	Polar polymers e.g., polyamide	1.5-5%

Advantages

Dispersion	Achieve optimum dispersion & distribution of polar polymer, fillers, starch, glass fiber, etc., in the non-polar polymer matrix
Mechanical Properties	Improve mechanical properties, e.g., tensile strength, impact resistance & flexural modulus in polyolefin & biodegradable containers
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products



Properties

Typical Value	Value	Method
Density	0.93	ASTM D792
Melt Flow Index @190°C/2.16kg	0.5-1.5	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%, Very High > 1.0wt%.

Maleic Anhydride Grafted Acrylonitrile Butadiene Styrene (ABS)

Aria Couple 1732

Description

- Maleic anhydride functionalized ABS produced by reactive extrusion.
- Coupling agent & compatibilizer between ABS & polar polymers, fillers, and reinforcing agents.

Product Application

		Usage
Coupling Agent for ABS	• Reinforcing materials, e.g., GF in ABS compounds	1.5-5%
	• Fillers, e.g., talc, pigments, and other additives	1.5-5%
Compatibilizer for ABS	Polar polymers, e.g., polycarbonate	3.5-7.5%

Advantages

Dispersion	Functions as a coupling agent between reinforcing materials such as glass fibers and ABS to achieve good mechanical properties
Mechanical Properties	Improve mechanical properties e.g., tensile strength, impact resistance and flexural modulus in non-polar polymers and biodegradable containers
Other	• Eliminate output variation and achieve dimensional stability

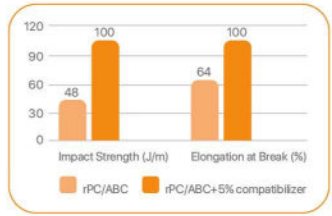
Properties

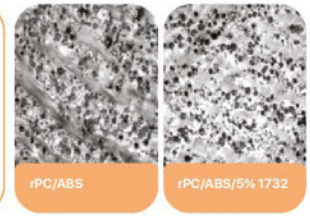
Typical Value	Value	Method
Density	1.04	ASTM D792
Melt Flow Index @230°C /5 kg	13±3	ASTM D1238
Maleic Anhydride Graft Level	High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%, Very High > 1.0wt%.

Maleic Anhydride Grafted ABS Application Effectiveness

A typical value of recycled PC / ABS (75/25 w/w) containing 5 wt.% Aria Couple 1732





Ethylene Copolymer Functionalized by Maleic Anhydride

Aria Couple 1937

Description

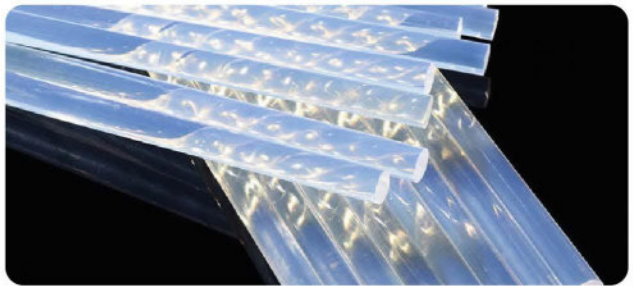
- Maleic anhydride functionalized ethylene copolymer produced by reactive extrusion.
- It has been primarily designed to use in adhesive formulation and in polar and non-polar polymer compound such as EVA/PE and PA/PE.

Product Application

		Usage
Coupling Agent for EVA	Fillers and reinforcing agents e.g., GF and other mineral fillers in EVA compounds	3-15%
Compatibilizer for Polyolefins	Polar polymers e.g., PA	1.3-5%

Advantages

Dispersion	Function as a coupling agent between reinforcing materials such as glass fibers, mineral fillers, and EVA to achieve superior mechanical properties
Mechanical Properties	Improve mechanical properties, e.g., tensile strength, impact resistance & flexural modulus in EVA compounds
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products



Properties

Typical Value	Value	Method
Density	0.94	ASTM D792
Melt Flow Index @190°C /5 kg	2-3.5	ASTM D1238
Maleic Anhydride Graft Level	Very High*	Titration Method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%, Very High > 1.0wt%.

High Amorphous Ethylene Copolymer Functionalized by Maleic Anhydride

Aria Couple 1946

Description

- Maleic anhydride functionalized high amorphous ethylene copolymer produced by reactive extrusion.
- It has been primarily designed as an impact modifier for nylons and coupling agents in filled polyamide compounds with high mechanical properties.

Product Application

		Usage
Coupling Agent for PA	Fillers and reinforcing agents, e.g., GF and other mineral fillers in nylon compounds	1.5-5%
Impact Modifier	Polyamides (6 and 6,6) and their compounds	5-15%
Compatibilizer	PA, PBT, and polyolefin compounds	1.5-5%

Advantages

Dispersion

- Functions as a coupling agent between reinforcing materials such as glass fibers, mineral fillers, and polyamide to achieve superior mechanical properties
- Functions as a coupling agent between PBT & glass fibers for high mechanical properties
- Functions as an impact modifier for toughening nylon products such as PA6, PA66 & etc.

Mechanical Properties

Improve mechanical properties, e.g., tensile strength, impact resistance & flexural modulus in polyamide and also polyamides compounds

Other

- Eliminate output variation
- Increase permeability of polyolefin
- Achieve dimensional stability
- Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	0.9	ASTM D792
Melt Flow Index @190°C /5 kg	3-6	ASTM D1238
Maleic Anhydride Graft Level	Very High*	Titration Method

Medium 0.25-0.5wt%, High 0.5-0.7wt%, Very High 0.7-0.9 wt.%.

High Amorphous Ethylene Copolymer Functionalized by Maleic Anhydride

Aria Couple 1947

Description

- Maleic anhydride functionalized high amorphous ethylene copolymer produced by reactive extrusion.
- This grade has been specifically developed to increase the impact resistance of polyamide compounds.

Product Application

		Usage
Coupling Agent	Fillers and reinforcing agents, e.g., GF and other mineral fillers in nylon and compounds	1.5-5%
Impact Modifier	For polyamide-based compounds	5-12%
Compatibilizer	Compounds containing polar and non-polar material	1.5-5%

Advantages

Dispersion	Low viscosity of this product reduces the size of its dispersed particle sizes in low impact resistant polymer matrix. It improves impact resistance while keeping other properties as good as raw material
Mechanical Properties	Enhance mechanical properties, e.g., tensile strength, impact resistance & flexural modulus in polyamide and polyamides compound
Other	• Eliminate output variation • Increase permeability of product • Achieve dimensional stability • Increase surface smoothness surface of final products

Properties

Typical Value	Value	Method
Density	0.89	ASTM D792
Melt Flow Index @190°C /5 kg	5-7.5	ASTM D1238
Maleic Anhydride Graft Level	Very High*	Titration Method

*Medium 0.25-0.5wt%, High 0.5-0.7wt%, Very High 0.7-0.9 wt.%.

HIPS Grafted Maleic Anhydride

Aria Couple 1631

Description

- Maleic anhydride functionalized High-Impact-Poly-Styrene (HIPS) produced by reactive extrusion.
- It has been primarily designed to act as a compatibilizer in HIPS compounds and their alloys for improving mechanical properties.

Product Application

		Usage
Coupling Agent	Fillers and reinforcing agents e.g. GF and other mineral fillers in HIPS or PS Compounds	3-7%
Interfacial Modifier	Improve interfacial properties of HIPS and PS compounds.	3-7%

Advantages

Dispersion	• Functions as a coupling agent between reinforcing materials such as glass fibers, HIPS or PS to achieve good mechanical properties • Increase polarity of polystyrene surfaces
Mechanical Properties	• Achieve effective (practical) compatibility between HIPS or PS compounds to reach high mechanical and thermal properties
Other	• Eliminate output variation • Increase permeability of polymer • Achieve dimensional stability • Increase surface smoothness of final products

Properties

Typical Value	Value	Method
Density	1.04	ASTM D792
Melt flow index @230°C /5 kg	25±5	ASTM D1238
Maleic Anhydride Graft Level	High	Titration method

* Low <0.25wt%, Medium 0.25-0.5wt%, High 0.5-1.0wt%

Aria Adhesive

Tie Layer Adhesives

Let's be more connected via Tie Layer Adhesives! When polyolefin layers are supposed to be attached with PA, EVOJ, PET, etc. Aria Adhesives come to work to tightly attach the, together. Please see next pages to find more information about this revolutionized innovation.

Tie Layer Adhesive

Aria Adhesive 4100T250

Description

Aria Adhesive 4100T250 is a PE based adhesive resin designed as an intermediate layer between polyolefin layers with polar polymers in multilayer structure in flexible or rigid films in packaging and tube industry.

Product Application

Adhesion Layer

Multilayer structure in flexible or rigid films in packaging and tube industry

Advantages

- High adhesion between PE layers and PA, EVOH and PET
- Transparent

Properties

Typical Value	Value	Value	Method
Density	0.91	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	2.1 ±0.6	g/10 min	ASTM D1238
Melting Temperature	129±4	°C	ISO 113571
Vicat Softening Point	85±5	°C	ISO 306
Tensile Strain at Break(50mm/min)	>600	%	ISO 527
Tensile Stress at Yield(50mm/min)	8 ± 3	MPa	ISO 527
Tensile Stress at Break(50mm/min)	16 ± 3	MPa	ISO 527
Hardness Shore	49 ± 2	D Scale	ISO868

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	180...200	200...210	210...230

Grafted Polyethylene Adhesive (Coating)

Aria Adhesive 4107

Description

Aria Adhesive 4107 is a maleic anhydride grafted polyethylene adhesive resin in pellet form. It has been primarily designed to act as adhesive layer in PE 3-layer coated steel pipes.

Product Application

Adhesion Layer

Tie layer adhesive in top coat PE in coated steel pipe (Fusion Bonded Epoxy)

Advantages

- Improving adhesion between epoxy layer (FBE primer) and the top coat polyethylene in 3-layer coated steel pipes

Properties

Typical Value	Value	Unit	Method
Density	0.91	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	1.7±0.5	g/10 min	ASTM D1238
Melting Temperature	138 ± 3	°C	ISO 113571
Vicat Softening Point	95.5 ± 2	°C	ISO 306
Tensile Strain at Break(50mm/min)	>600	%	ISO 527
Tensile Stress at Yield(50mm/min)	11 ± 3	MPa	ISO 527
Tensile Stress at Break(50mm/min)	14.1 ± 4	MPa	ISO 527
Hardness Shore D	54 ± 6		ISO868

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

Grafted Polyethylene Adhesive

Aria Adhesive 4107T242

Description

Aria Adhesive 4107T242 is a maleic anhydride grafted polyethylene adhesive resin in pellet form. It has been primarily designed to act as a tie layer adhesive in multilayered structure pipes.

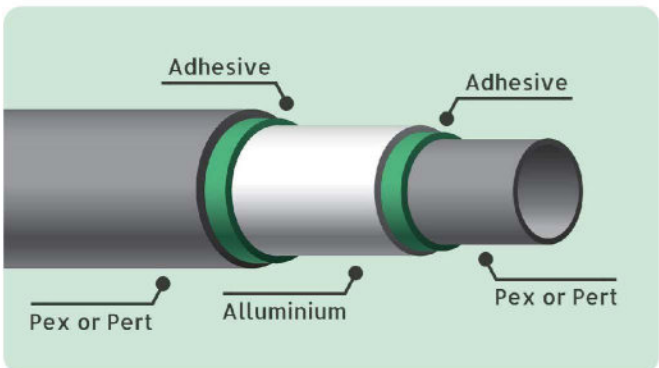
Product Application

Adhesion Layer

PEX or PE with polar layer (Al, steel and ...) in pipe structure

Advantages

- High peel strength
- Compabilizing polar and non-polar layers
- Improving properties of coated steel pipes



Properties

Typical Value	Value	Unit	Method
Density	0.93	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	1.8 ± 0.6	g/10 min	ASTM D1238
Melting Temperature	139±3	°C	ISO 113571
Vicat Softening Point	102±4	°C	ISO 306
Tensile Strain at Break(50mm/min)	>400	%	ISO 527
Tensile Stress at Yield(50mm/min)	14 ± 3	MPa	ISO 527
Tensile Stress at Break(50mm/min)	15 ± 3	MPa	ISO 527

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

Grafted Polyethylene Adhesive

Aria Adhesive 4100T276

Description

Aria Adhesive 4100T276 is a maleic anhydride grafted polyethylene adhesive resin in pellet form. It has been primarily designed to act as a tie layer adhesive in multilayered structure pipes.

Product Application

Adhesion Layer

- PE with polar layer (Al, steel or EVOH) in pipe structure
- Spiral corrugated pipes

Advantages

- High peel strength
- Compabilizing polar and non-polar layers
- Improving properties of coated steel pipes

Properties

Typical Value	Value	Unit	Method
Density	0.92	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	2.4 ± 0.4	g/10 min	ASTM D1238
Melting Temperature	138±3	°C	ISO 113571
Vicat Softening Point	101±4	°C	ISO 306
Elongation at Break (50mm/min)	>600	%	ISO 527
Tensile Strength at Yield (50mm/min)	13 ± 3	MPa	ISO 527
Tensile Strength at Break (50mm/min)	22 ± 4	MPa	ISO 527
Hardness Shore	58 ± 4	D Scale	ISO868

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...220

Grafted Polypropylene Adhesive

Aria Adhesive 4407

Description

Aria Adhesive 4407 is a maleic anhydride grafted polypropylene adhesive resin in pellet form. It has been primarily designed to act as a tie layer adhesive in multilayered structure pipes.

Product Application

Adhesion Layer

PP with polar layer (Al, steel and ...) in pipe structure

Advantages

- High peel strength
- Compabilizing polar and non-polar layers
- Improving properties of coated steel pipes

Properties

Typical Value	Value	Unit	Method
Density	0.92±0.01	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	3.3±1.5	g/10 min	ASTM D1238
Melting Temperature	144±5	°C	ISO 113571
Vicat Softening Point	110±5	°C	ISO 306
Tensile Strain at Break(50mm/min)	>300	%	ISO 527
Tensile Stress at Yield(50mm/min)	15 ± 4	MPa	ISO 527
Hardness Shore D	63 ±5		ISO868

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
190...210	190...210	210...230	210...230	210...230	220...240

Grafted Polyethylene Adhesive (PFT)

Aria Adhesive 4106

Description

Aria Adhesive 4106 is a maleic anhydride grafted adhesive designed for multilayer plastic fuel tanks (PFT) composed of PE and EVOH that is supplied in pellet form.

Product Application

Adhesion Layer

Aria adhesive 4106 is primarily designed to use as a tie layer resin in integrated plastic fuel systems. This high-performance adhesive resin shows superior long-term adhesion, toughness, aging resistance and enables fuel tanks to deliver fuel components with low permeation and superior durability.

Properties

Typical Value	Value	Unit	Method
Density	0.92	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	1.1 ±0.4	g/10 min	ASTM D1238
Melting Temperature	135 ± 5	°C	ISO 113571
Vicat Softening Point	105±5	°C	ISO 306
Tensile Strain at Break(50mm/min)	>500	%	ISO 527
Tensile Stress at Yield(50mm/min)	14 + 3	MPa	ISO 527
Tensile Stress at Break(50mm/min)	26 + 3	MPa	ISO 527
Hardness Shore D	58 + 3		ISO868

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

Aria Nano

Nano Additives

Aria Nano has strengthened plastic industry. Nano Additives have a very significant role on improving different properties of plastics. Aria Nano can enhance impact resistance of UPVC, i.e. pipes, fittings, door/window profiles, as well as PE and PP. In addition, it promotes surface gloss, and increases Vicat softening temperature.

UPVC Pipe Nano Additive

Aria Nano 701

Description

Aria Nano 701 is a special additive package containing nanoparticles and their carriers. It has been primarily designed as an impact modifier in UPVC pipe formulation.

Why Aria Nano 701

- Mechanism
  When we use nanoparticles, we have several cavities in the polymer matrix. When a part is hit, impact energy is dissipated by these cavities, and we have a ductile failure.

- Good balance between properties and price

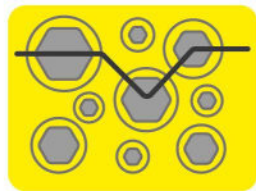
Advantages

- Raise impact properties to about four times the standard
- Increase vicat softening point
- Improve surface brightness of UPVC pipe
- Improve degradation resistance of UPVC pipes in dichloromethane immersion test

Properties

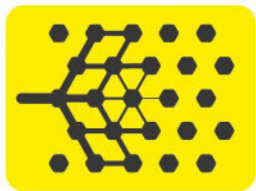
Typical Value	Value	Method
Appearance	Powder	-
Color	Off White	-
Usage Level	0.8 – 1.75%	

Failure Mechanism

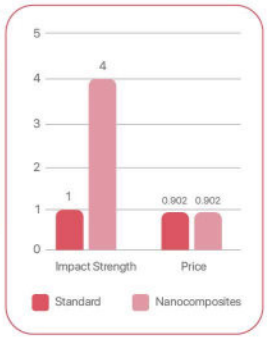


Large Particles
- Concentrate Stress
- Propagate Cracks
- Brittle Failure

Toughening Mechanism



Small Particles
- Localized Deformation
- Absorb Energy
- Ductile Failure



UPVC Fitting Nano Additive

Aria Nano 801

Description

Aria Nano 801 is a special additive package containing nanoparticles and their carriers. It has been primarily designed to act as an impact modifier in UPVC fitting formulation.

Why Aria Nano 801

- Mechanism
  When we use nano particles, we have several cavities in the polymer matrix. When a part is hit, impact energy is dissipated by these cavities and we have a ductile failure.

- Good balance between properties and price

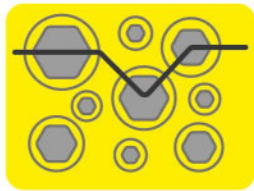
Advantages

- Increase impact properties to about 5.5 times of standard
- Decrease degradation of UPVC fitting in injection point
- Increase vicat softening point

Properties

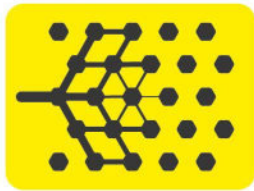
Typical Value	Value	Method
Appearance	Powder	-
Color	Off White	-
Usage Level	0.9 – 1.4%	

Failure Mechanism

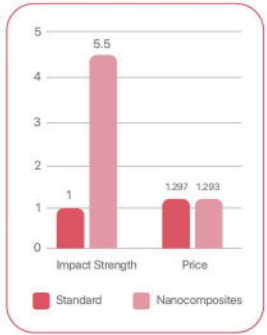


Large Particles
- Concentrate Stress
- Propagate Cracks
- Brittle Failure

Toughening Mechanism



Small Particles
- Localized Deformation
- Absorb Energy
- Ductile Failure



UPVC Profile Nano Additive

Aria Nano 901

Description

Aria nano 901 is a special additive package containing nanoparticles and their carriers. It has been primarily designed to act as an impact modifier in UPVC door and window profile formulation.

Advantages

- Increase impact properties to about 3.5 times of standard
- Increase vicat softening point
- Improve gelation of polymeric melt and surface brightening

Properties

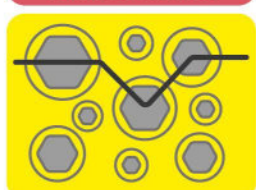
Typical Value	Value	Method
Appearance	Powder	-
Color	Off White	-
Usage Level	0.6 – 1.5%	

Why Aria Nano 901

- Mechanism
  When we use nano particles, we have several cavities in the polymer matrix. When a part is hit, impact energy is dissipated by these cavities and we have a ductile failure.

- Good balance between properties and price

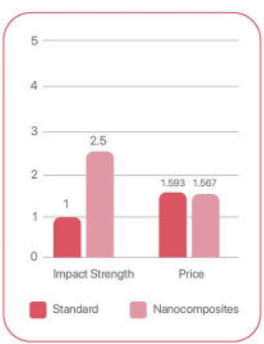
Failure Mechanism



Large Particles
- Concentrate Stress
- Propagate Cracks
- Brittle Failure

Toughening Mechanism

Small Particles
- Localized Deformation
- Absorb Energy
- Ductile Failure



Dimensional Stabilizer Masterbatch

Aria Nano 2451

Description

Aria Nano 2451 is a special additive package containing nanoparticles and carriers. It has been primarily designed to act as a dimensional stabilizer and PP clarifier.

Product Application

Dimensional stabilizer and PP clarifier

Advantages

- Dimensional stabilizer in PP bag, fibers, and PP packaging, especially PP woven bags
- PP clarifier in PP injection parts

Properties

Typical Value	Value	Method
Appearance	Glassy Granules	-
Carrier Resin	PP	-
Density	0.92±0.01 g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	14±4 g/10min	ASTM D1238
Usage Level	1-4%	

Polyolefin Nanocomposite (OTR)

Aria Nano 4355

Description

Aria Nano 4355 is an It is a polyolefin nanocomposite (PE and PP) to reduce oxygen permeability in food packaging films.

Product Application

Polyolefin Compound

Reducing the rate of oxygen passage

Advantages

- Preventing food spoilage
- No negative effects on film properties

Properties

Typical Value	Value	Unit	Method
Density	0.95±0.01	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	1.5 ± 0.4	g/10 min	ASTM D1238
Melting Temperature	125 ± 3	°C	ISO 113571
Vicat Softening Point	103 ± 2	°C	ASTM D 1525
Tensile Stress (50mm/min)	19	MPa	ASTM D638

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

Anti-Bacterial Nano Masterbatch

Aria Nano 4365

Description

Aria Nano 4365 is an It is a polyolefin nano masterbatch (PE and PP), enhancing anti-bacterial properties in food packaging films.

Properties

Typical Value	Value	Unit	Method
Density	0.95±0.01	g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	1.5 ± 0.2	g/10 min	ASTM D1238
Melting Temperature	125 ± 3	°C	ISO 113571
Vicat Softening Point	103 ± 2	°C	ASTM D 1525
Tensile Stress (50mm/min)	19	MPa	ASTM D638

Processing Condition Suggestion

Zone1(C°)	Zone2(C°)	Zone3(C°)	Zone4(C°)	...(C°)	Die(C°)
180...200	180...200	180...200	200...210	200...210	210...230

Anti-Scratch Masterbatch

Aria Nano 5600

Description

Scratch resistance in Talc & $CaCO_3$, filled polyolefin, TPE, or rubber compounds.

Advantages

- Mechanical properties improvement
- No negative influence on the color of part surfaces

Properties

Typical Value	Value	Method
Appearance	Granules	-
Density	0.91±0.01 g/cm^3	ASTM D792
Melt Flow Index @190°C /2.16kg	17 ± 5 g/10min	ASTM D1238
Usage Level	1-3%	

Why do we suggest Aria Nano 5600 for the polyolefin compound?

This table shows the efficacy of Aria Nano 5600 in a PP/Talc compound.

Additives	ΔL Scratch	Tensile Strength (MPa)	Impact strength (kJ/m^2)
With Siloxane based Anti-Scratch	<1	20.7	22.9
With Siloxane based Anti-Scratch + 3% Aria Nano 5600	0.5	21.4	27.1

Notes

ARIA POLYMER
THERE IS ALWAYS A BETTER WAY

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