Tiemer is a new class of material produced by Polymer Pishrafteh Dana Co. (PPD), with technical cooperation of Mitsui Chemicals Europe GmbH. **Tiemer 0221S** is an adhesive resin based on polyethylene and specially designed for extrusion application.

Applications:

Tiemer 0221S is an adhesive resin based on PE and mainly recommended for using as a tie layer resin, between PE, PA, EVOH, in tube and bottle application.

Key Characteristics:

Typical Properties					
Item	Value	Unit	Test Method		
Physical					
Melt Flow Rate	1.10 - 2.40	g/10min	ASTM D1238 @ 190 °C, 2.16 kg		
Density	0.91 - 0.92	g/cm ³	ASTM D 1505		
Hardness	43-46	Shore D	ASTM D2240 @ 23 °C, 5 sec		
Peel Strength					
Adhesion Strength of Aluminum Sandwich (Al/Tiemer/Al = 0.3/0.1/0.3 mm) (Heat Seal Condition: t=180s, T=220 °C)	Plateau: 65 - 80 Peak: 100 - 130	N/20mm	ASTM D 638		
Thermal					
Melting Point	118	٥C	ASTM D 3418		
Mechanical					
Tensile Strength	10-12	MPa	ASTM D 638		
Elongation @ Break	400-500	%	ASTM D 638		

*All above mentioned data are typical values and not to be construed as real specifications. Users should confirm results by their own tests.

Packaging & Storage Conditions:

Tiemer 0221S is normally packed in 25kg bags. It should be stored in dry and dust free area at room temperature. Please keep away from incompatible materials, food & drink.

Product Name: PE-Type Adhesive Resin Commercial Name: Tiemer 0221S Datasheet Version: 002 Revision Date: 22/06/21 Polymer Pishrafteh Dana

Office No.: Tehran, South Shiraz, Jaleh Alley, No. 5, Dana Polymer Building Phone: (021) 45493300



Tiemer is a new class of material produced by Polymer Pishrafteh Dana Co. (PPD), with technical cooperation of Mitsui Chemicals Europe GmbH. **Tiemer L321D** is an adhesive resin based on polyethylene and specially designed for packaging application.

Applications:

Tiemer L321D is a maleic anhydride grafted PE-based grade, which is designed for adhesion between PE and PA or EVOH in blown and cast film and especially double-bubble applications.

Key Characteristics:

Typical Properties								
Item	Value	Unit	Test Method					
Physical	Physical							
Melt Flow Rate	1.90 - 3.5	g/10min	ASTM D1238 @ 190 °C, 2.16 kg					
Density	0.91 - 0.92	g/cm ³	ASTM D 1505					
Hardness	43-46	Shore D	ASTM D2240 @ 23 °C, 5 sec					
Peel Strength								
Adhesion Strength of Aluminum Sandwich (Al/Tiemer/Al = 0.3/0.1/0.3 mm) (Heat Seal Condition: t=180s, T=220 °C)	Plateau: 110 - 140 Peak: 90 - 120	N/20mm	ASTM D 638					
Thermal								
Melting Point	120	٥C	ASTM D 3418					
Mechanical								
Tensile Strength	9-11	MPa	ASTM D 638					
Elongation @ Break	430-500	%	ASTM D 638					

*All above mentioned data are typical values and not to be construed as real specifications. Users should confirm results by their own tests.

Packaging & Storage Conditions:

Tiemer L321D is normally packed in 25kg bags. It should be stored in dry and dust free area at room temperature. Please keep away from incompatible materials, food & drink.

Product Name: PE-Type Adhesive Resin Commercial Name: Tiemer L321D Datasheet Version: 002 Revision Date: 22/06/21

Polymer Pishrafteh Dana

Office No.: Tehran, South Shiraz, Jaleh Alley, No. 5, Dana Polymer Building Phone: (021) 45493300



Page Number:1

Tiemer is a new class of material produced by Polymer Pishrafteh Dana Co. (PPD), with technical cooperation of Mitsui Chemicals Europe GmbH. **Tiemer TS0500-M7** is an adhesive resin based on polyethylene and specially designed for 5-layer pipes.

Applications:

This grade is an adhesive resin based on PE and mainly recommended for using as a tie layer resin in multilayer pipes composed of polyethylene (PE) and metal.

Key Characteristics:

Typical Properties					
Item	Value	Unit	Test Method		
Physical					
Melt Flow Rate	2.2-2.6	g/10min	ASTM D1238 @ 230 °C, 2.16 kg		
Density	0.91-0.92	g/cm ³	ASTM D 1505		
Hardness	52	Shore D	ASTM D 2240		
Mechanical					
Tensile Strength at Yield	11	MPa	ASTM D 638		
Tensile Strength at Break	13	MPa	ASTM D 638		
Peel Strength			ASTM D 638		
Adhesion Strength of Aluminum Sandwich (Al/Admer/Al = 0.3/0.1/0.3 mm) Heat Seal Condition: t=180s, T=220 °C)	Plateau: 50-70 Peak: 100-120	N/20mm	PPD Method		
Melting Point	126	⁰ C	ASTM D 3418		

*All above mentioned data are typical values and not to be construed as real specifications. Users should confirm results by their own tests.

Packaging & Storage Conditions:

Tiemer TS0500-M7 is normally packed in 25 kg bags. It should be stored in dry and dust free area at room temperature. Please keep away from incompatible materials, food & drink.

Product Name: PE-Type Adhesive Resin Commercial Name: Tiemer TS0500-M7 Datasheet Version: 002 Revision Date: 14/06/21 **Polymer Pishrafteh Dana**

Office No.: Tehran, South Shiraz, Jaleh Alley, No. 5, Dana Polymer Building Phone: (021) 45493300



Page Number:1

Tiemer is a new class of material produced by Polymer Pishrafteh Dana Co. (PPD), with technical cooperation of Mitsui Chemicals Europe GmbH. **Tiemer TS0500-M7** is an adhesive resin based on polyethylene and specially designed for 5-layer pipes.

Applications:

This grade is an adhesive resin based on PE and mainly recommended for using as a tie layer resin in multilayer pipes composed of polyethylene (PE) and metal.

Key Characteristics:

Typical Properties					
Item	Value	Unit	Test Method		
Physical					
Melt Flow Rate	2.2-2.6	g/10min	ASTM D1238 @ 230 °C, 2.16 kg		
Density	0.91-0.92	g/cm ³	ASTM D 1505		
Hardness	52	Shore D	ASTM D 2240		
Mechanical					
Tensile Strength at Yield	11	MPa	ASTM D 638		
Tensile Strength at Break	13	MPa	ASTM D 638		
Peel Strength			ASTM D 638		
Adhesion Strength of Aluminum Sandwich (Al/Admer/Al = 0.3/0.1/0.3 mm) Heat Seal Condition: t=180s, T=220 °C)	Plateau: 50-70 Peak: 100-120	N/20mm	PPD Method		
Melting Point	126	⁰ C	ASTM D 3418		

*All above mentioned data are typical values and not to be construed as real specifications. Users should confirm results by their own tests.

Packaging & Storage Conditions:

Tiemer TS0500-M7 is normally packed in 25 kg bags. It should be stored in dry and dust free area at room temperature. Please keep away from incompatible materials, food & drink.

Product Name: PE-Type Adhesive Resin Commercial Name: Tiemer TS0500-M7 Datasheet Version: 002 Revision Date: 14/06/21 **Polymer Pishrafteh Dana**

Office No.: Tehran, South Shiraz, Jaleh Alley, No. 5, Dana Polymer Building Phone: (021) 45493300



Page Number:1



ADMER[™] GT6E

Technical Data Sheet

Preface

ADMER™ GT6E is a maleic anhydride grafted, LLDPE-based adhesive designed for multilayer plastic fuel tanks (PFT) composed of PE, PA and EVOH. It offers advanced adhesion durability, fuel resistance and processability.

Properties

Item	Value	Unit	ASTM Testing Method
MFR (190°C, 2.16kg)	1.1	g/10 min	D1238
Density	0.92	g/cm³	D1505
Tensile Strength at Yiel	d 11	MPa	D638
Tensile Strength at Brea	ak 25	MPa	D638
Elongation at Break	> 500	%	D638
Izod Impact Strength	No Break	J/m²	D256
Shore Hardness	51	D scale	D2240
Vicat Softening Point	102	°C	D1525
Melting Point	122	°C	D3418

Vicat measured at load 1 (10N), rate A (50°C/h)





ADMER[™] GT6E

Processing

The recommended standard processing temperatures for ADMER[™] PE-Grades:

	C1	C2	C3	C4	ADMER™ Melt-Temp.
With PA	180 190	190 200	200 210	210 220	220 230
With EVOH	170 180	190 200	200 210	200 210	220 230

Maximum temperature: 300 °C; Temperatures above the upper limit or long residence times of molten resin may lead to decomposition of the polymer. Decomposition products may be carbon monoxide, carbon dioxide, hydrocarbons and water.

Whilst the extrusion process is either interrupted or terminated:

Less than 2 hours: Screw rotation can be stopped maintaining temperature.

More than 2 hours: Purge out and shut down in accordance with common procedure.

Handling

ADMER[™] resins are supplied in the form of small, free flowing pellets and can be easily handled with commercially available equipment. As long as ADMER[™] is stored under good conditions, it does not require any special care in storage. Precaution should be taken in opening the package to avoid contamination by foreign materials.

Since ADMER[™] is a non-hygroscopic material, it absorbs less moisture than non-polyolefin polymers. Therefore, ADMER[™] does not require drying prior to processing.

ADMER[™] can be disposed of by either landfill or incineration. However, any disposal must comply with local regulations and recommendations.

Disclaimer:

The information and numerical results are for information only and are given in good faith.

In view of numerous factors of which we are unaware and which are beyond our control regarding the use of our products, we cannot guarantee that this information covers all possible aspects of the subject. Moreover, we cannot accept any responsibility with regard to patents for applications and processes described.



ADMER[™] NF498E

Technical Data Sheet

Preface

ADMER™ NF498E is an maleic anhydride grafted LLDPE-based grade, which is designed for adhesion to Polyamide or EVOH in tubes, sheet, blown and cast film application.

Properties

Item	Value	Unit	ASTM Testing Method
MFR (190°C, 2.16kg)	2.6	g/10 min	D1238
Density	0.91	g/cm³	D1505
Tensile Strength at Yield	d 6.9	MPa	D638
Tensile Strength at Brea	ak 15.0	MPa	D638
Elongation at Break	> 500	%	D638
Izod Impact Strength	No Break	J/m²	D256
Shore Hardness	45	D scale	D2240
Vicat Softening Point	82	°C	D1525

Vicat measured at load 1 (10N), rate A (50°C/h)





ADMER[™] NF498E

Processing

The recommended processing temperatures for ADMER[™] can be found in our temperature proposal.

Maximum temperature: 300 °C; Temperatures above the upper limit or long residence times of molten resin may lead to decomposition of the polymer. Decomposition products may be carbon monoxide, carbon dioxide, hydrocarbons and water.

Whilst the extrusion process is either interrupted or terminated:

Less than 2 hours: Screw rotation can be stopped maintaining temperature.

More than 2 hours: Purge out and shut down in accordance with common procedure.

Handling

ADMER[™] resins are supplied in the form of small, free flowing pellets and can be easily handled with commercially available equipment. As long as ADMER[™] is stored under good conditions, it does not require any special care in storage. Precaution should be taken in opening the package to avoid contamination by foreign materials.

Since ADMER[™] is a non-hygroscopic material, it absorbs less moisture than non-polyolefin polymers. Therefore, ADMER[™] does not require drying prior to processing.

ADMER[™] can be disposed of by either landfill or incineration. However, any disposal must comply with local regulations and recommendations.

Food Status

This information is only suitable for grade selection. For detailed information always refer to our Food Contact Status Declaration which is available on request. It is the full responsibility of the manufacturer of food contact materials or articles to ensure the suitability of above mentioned ADMER[™] grade in its intended application.

EU: Monomers and additives are listed as authorized monomers/additives in Annex I of Regulation (EU) No. 10/2011 as amended. Please refer to our Food Contact Status Declaration regarding substances restricted by SMLs and Dual Use Additives. (Status: 8th August 2019).

USA: This ADMER[™] grade conforms to FDA 21 CFR §175.105 (Adhesives) for indirect food contact. Please contact us for further details.

Disclaimer:

The information and numerical results are for information only and are given in good faith.

In view of numerous factors of which we are unaware and which are beyond our control regarding the use of our products, we cannot guarantee that this information covers all possible aspects of the subject. Moreover, we cannot accept any responsibility with regard to patents for applications and processes described.



ADMER[™] NF837E

Technical Data Sheet

Preface

ADMER™ NF837E is a maleic anhydride grafted, PE-LLD-based grade, which is especially designed for high-speed extrusion coating application. It offers strong adhesion to EVOH, PA, Paper and Aluminum.

Properties

Item	Value	Unit	ASTM Testing Method
MFR (190°C, 2.16kg)	10.0	g/10 min	D1238
Density	0.92	g/cm³	D1505
Tensile Strength at Yield	7.6	MPa	D638
Tensile Strength at Brea	k 16.0	MPa	D638
Elongation at Break	> 500	%	D638
Izod Impact Strength	No Break	J/m²	D256
Shore Hardness	44	D scale	D2240
Vicat Softening Point	82	°C	D1525
Melt Temperature	114	°C	D3418

Vicat measured at load 1 (10N), rate A (50°C/h)





ADMER[™] NF837E

Processing

The recommended processing temperatures for ADMER[™] PE-Grades:

C1	C2	C3	C4	ADMER™ Melt-Temp.
190 200	220 240	240 270	270 280	280 290

Maximum temperature: 300 °C; Temperatures above the upper limit or long residence times of molten resin may lead to decomposition of the polymer. Decomposition products may be carbon monoxide, carbon dioxide, hydrocarbons and water.

Whilst the extrusion process is either interrupted or terminated:

Less than 2 hours: Screw rotation can be stopped maintaining temperature.

More than 2 hours: Purge out and shut down in accordance with common procedure.

Handling

ADMER[™] resins are supplied in the form of small, free flowing pellets and can be easily handled with commercially available equipment. As long as ADMER[™] is stored under good conditions, it does not require any special care in storage. Precaution should be taken in opening the package to avoid contamination by foreign materials.

Since ADMER[™] is a non-hygroscopic material, it absorbs less moisture than non-polyolefin polymers. Therefore, ADMER[™] does not require drying prior to processing.

ADMER[™] can be disposed of by either landfill or incineration. However, any disposal must comply with local regulations and recommendations.

Food Status

This information is only suitable for grade selection. For detailed information always refer to our Food Contact Status Declaration which is available on request. It is the full responsibility of the manufacturer of food contact materials or articles to ensure the suitability of above mentioned ADMER[™] grade in its intended application.

EU: Monomers and additives are listed as authorized monomers/additives in Annex I of Regulation (EU) No. 10/2011 as amended. Please refer to our Food Contact Status Declaration regarding substances restricted by SMLs and Dual Use Additives. (Status: 8th August 2019).

USA: This ADMER[™] grade conforms to FDA 21 CFR §175.105 (Adhesives) for indirect food contact. Please contact us for further details.

Disclaimer:

The information and numerical results are for information only and are given in good faith.

In view of numerous factors of which we are unaware and which are beyond our control regarding the use of our products, we cannot guarantee that this information covers all possible aspects of the subject. Moreover, we cannot accept any responsibility with regard to patents for applications and processes described.



ADMER[™] QB510E

Technical Data Sheet

Preface

ADMER™ QB510E is a maleic anhydride grafted, homo-PP based standard adhesive for bottles, sheets and films composed of Polypropylene and EVOH or PA.

Properties

Item	Value	Unit	ASTM Testing Method
MFR (230°C, 2.16kg)	2.6	g/10 min	D1238
Density	0.90	g/cm³	D1505
Tensile Strength at Yield	24	MPa	D638
Tensile Strength at Brea	k 29	MPa	D638
Elongation at Break	> 500	%	D638
Izod Impact Strength	380	J/m²	D256
Shore Hardness	65	D scale	D2240
Vicat Softening Point	142	°C	D1525
Melt Temperature	164	°C	D3418

Vicat measured at load 1 (10N), rate A (50°C/h)



Mitsui Chemicals Europe GmbH · Oststrasse 34 · 40211 Düsseldorf · Germany Telephone: (+49)211-17332-0 · Fax: (+49)211-1719960 · Internet: www.admer.eu



ADMER[™] QB510E

Processing

The recommended processing temperatures for ADMER[™] can be found in our temperature proposal.

Maximum temperature: 300 °C; Temperatures above the upper limit or long residence times of molten resin may lead to decomposition of the polymer. Decomposition products may be carbon monoxide, carbon dioxide, hydrocarbons and water.

Whilst the extrusion process is either interrupted or terminated:

Less than 2 hours: Screw rotation can be stopped maintaining temperature.

More than 2 hours: Purge out and shut down in accordance with common procedure.

Handling

ADMER[™] resins are supplied in the form of small, free flowing pellets and can be easily handled with commercially available equipment. As long as ADMER[™] is stored under good conditions, it does not require any special care in storage. Precaution should be taken in opening the package to avoid contamination by foreign materials.

Since ADMER[™] is a non-hygroscopic material, it absorbs less moisture than non-polyolefin polymers. Therefore, ADMER[™] does not require drying prior to processing.

ADMER[™] can be disposed of by either landfill or incineration. However, any disposal must comply with local regulations and recommendations.

Food Status

This information is only suitable for grade selection. For detailed information always refer to our Food Contact Status Declaration which is available on request. It is the full responsibility of the manufacturer of food contact materials or articles to ensure the suitability of above mentioned ADMER[™] grade in its intended application.

EU: Monomers and additives are listed as authorized monomers/additives in Annex I of Regulation (EU) No. 10/2011 as amended. Please refer to our Food Contact Status Declaration regarding substances restricted by SMLs and Dual Use Additives. (Status: 8th August 2019).

USA: This ADMER[™] grade conforms to FDA 21 CFR §175.105 (Adhesives) for indirect food contact. Please contact us for further details.

Disclaimer:

The information and numerical results are for information only and are given in good faith.

In view of numerous factors of which we are unaware and which are beyond our control regarding the use of our products, we cannot guarantee that this information covers all possible aspects of the subject. Moreover, we cannot accept any responsibility with regard to patents for applications and processes described.