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APPENDICES

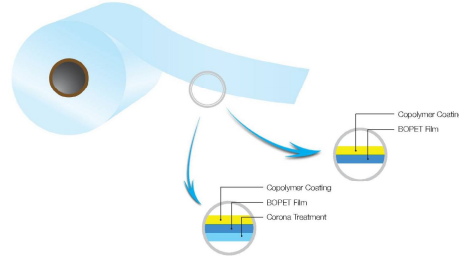
APPENDIX – A : TDS of Chemically Treated PET

Copolymer Coated Polyester Film

PETLAR-PC

PETLAR-PC grade is a Biaxially Oriented Transparent Polyester Film with one side copolymer coating. The coated surface gives excellent adhesion to a wide range of inks & laminating adhesives thus improving the bond strength of flexible laminate. It also acts as an excellent base film for metallization. The other side of film surface can also be corona treated. The film possesses good mechanical, surface & thermal properties and ensures excellent processability.

PETLAR-PC grade conforms latest EC directives, REACH specifications and US FDA regulations for food contact applications. This grade is available in thickness range of 8 to 75 Microns (32-300 Gauge).



APPLICATIONS

- Flexible Packaging
Printing, Coating, Lamination
- Metallizing
- Hot Filled Applications like Tomato Ketchup, Juices, etc
- Frozen Food Packaging

Standard Roll Presentation - 6 Inch / 152 mm Core Diameter									
Thickness (Micron)	8	10	12	23	36	50	75	Approx. Outer Roll Diameter (mm)	
3000						495	590		
6000				475	570	675	810		
9000				560	700				
12000				650	795				
18000	485	535	580						
24000	550	610	660						
36000	660	735	795						
42000		800	850						
Width Range	400-2900 mm / 15-99 Inch								

Customised specs also available on request

Standard Roll Presentation - 3 Inch / 76 mm Core Diameter						
Thickness (Micron)	10	12	23	36	50	Approx. Outer Roll Diameter (mm)
3000				400	490	
6000			450			
9000	370	400	545			
12000	425	455				
18000	515	560				
Width Range	400-1500 mm / 15-59 Inch					

Customised specs also available on request

Copolymer Coated Polyester Film

PETLAR-PC

Properties	Unit	Test Method	Product Code												
			PC0080	PC0090	PC0100	PC0110	PC0120	PC0150	PC0190	PC0230	PC0300	PC0360	PC0500	PC0750	
GENERAL															
Nominal Thickness	Micron Gauge	SRF Method	08	09	10	11	12	15	19	23	30	36	50	75	
			32	36	40	44	48	60	76	92	120	144	200	300	
Yield	m ² /kg in ² /lb		90	80	72	65	60	48	38	31	24	20	14	9	
			63300	56300	50600	46000	42200	33700	26600	22000	16800	14000	10100	6700	
MECHANICAL															
Tensile Strength (min)	MD	kg/cm ² kpsi	2000	2000	2000	2000	2000	2000	2000	1900	1900	1900	1900	1800	
	TD	kg/cm ² kpsi	29	29	29	29	29	29	29	27	27	27	27	26	
Elongation at Break (min)	MD	%	2100	2100	2100	2100	2100	2100	2100	2000	2000	1900	1900	1700	
	TD	%	30	30	30	30	30	30	30	29	29	27	27	24	
Coefficient of Friction	Static	-	110	110	110	110	110	110	110	110	120	125	125	130	
	Dynamic	-	100	100	100	100	100	100	100	110	110	115	115	120	
Surface Energy	Plain Side	Dyne/cm	100	100	100	100	100	100	100	110	110	115	115	120	
	Corona Side		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.45	0.45	0.45	0.45	0.40
	Copolymer Side		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.40	0.40	0.40	0.40	0.35
Surface Energy	Plain Side	Dyne/cm	44	44	44	44	44	44	44	44	44	44	44	44	
	Corona Side		52+	52+	52+	52+	52+	52+	52+	52+	52+	52+	52+	52+	
	Copolymer Side		58+	58+	58+	58+	58+	58+	58+	58+	58+	58+	58+	58+	
THERMAL															
Shrinkage (150°C, 30 min)	MD	%	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
	TD		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
OPTICAL															
Haze	%	ASTM D 1003	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0	6.0	7.0	
Transmittance			90	90	90	90	90	90	90	90	90	90	85	85	80
BARRIER															
WVTR (38°C & 90% RH)	gm/m ² /day	ASTM F 1249	<60	<50	<40	<40	<40	<35	<30	<25	<25	<20	<15	<10	
	cc/m ² /day		<3.8	<3.2	<2.5	<2.5	<2.5	<2.2	<1.9	<1.6	<1.6	<1.3	<0.9	<0.6	
OTR (23°C & 0% RH)	cc/m ² /day	ASTM D 3985	<140	<135	<130	<130	<130	<110	<90	<70	<70	<50	<40	<30	
	cc/100in ² /day		<8.8	<8.4	<8.1	<8.1	<8.1	<6.9	<5.6	<4.4	<4.4	<3.1	<2.5	<1.9	

MD - Machine Direction | TD - Transverse Direction
 Notes: 1) Copolymer coated side is available wound inside/outside of the roll - customer to specify accordingly; 2) Above properties can be modified to suit customer's requirement; 3) Unless otherwise specified, the values given above are nominal.

DISCLAIMER

The information given above is known to the best of our knowledge and experience. Some of the properties can be changed as a result of supplier's effort to improve upon the quality of production efficiency of the subject. The information is believed to be true and accurate and is not intended to constitute any warranty or representation of any kind, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for the readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

APPENDIX – B : TDS of Nylon


Cangzhou Donghong Packing Material Co., Ltd.
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 TEL: + 86-317-2075235 FAX: + 86-317-2075234
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TDS for Simultaneous Nylon Film

Typical Properties		Units	Test Method	Value
Thickness		micron		15 ± 3%
Yield		m ² /kg		58.0 ± 3%
Tensile Strength	MD	Mpa	ASTM D882	210
	TD			230
Elongation	MD	%		115
	TD			95
Dimensional Stability (320°F/160°C - 5 min.)	MD	%	ASTM D1204	1.5
	TD			0.5
Tear Strength		mN	ASTM D1004	105
Coefficient of Friction	Static	-	ASTM D1894	0.4
	Dynamic			0.38
Haze		%	ASTM D1003	2.0
Gloss (45°)		%	ASTM D523	105
Surface Tension	inside/outside	Dynes	ASTM D2578	56/50
Oxygen Transmission Rate 68°F (20°C) / 0%RH		cm ³ /m ² /day·0.1MPa	ASTM D3985	28-30

DONGHONG films: complies with FDA regulation 21 CFR 177.1500 (b)(6.2)

Production technology: Three layer co-extrusion flat cast die process, then simultaneous tenter frame biaxially orientation.

APPENDIX – C : TDS of Equate 7087

EQUATE PE EFDC-7087 Linear Low Density Polyethylene EQUATE Petrochemical Company KSCC



Product Description

EFDC-7087 is a linear low-density polyethylene (LLDPE) resin for tubular blown film extrusion. Films made from EFDA-7087 have good toughness, high tensile strength and outstanding puncture resistance. EFDA-7087 contains high levels of slip and antiblocking agent. The product offers excellent draw down capability for thinner gauge film production.

EFDC-7087 is recommended for the manufacture of thin gauge liner films, garment bags and other industrial and consumer packaging applications requiring toughness and puncture resistance.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Asia Pacific	• Europe
Additive	• Antiblock • Slip		
Features	• Antiblocking • Good Drawdown	• Good Toughness • High Tensile Strength	• Puncture Resistant • Slip
Uses	• Film • Industrial Applications		
Forms	• Pellets • Packaging		
Processing Method	• Blow Molding • Blown Film	• Electrostatic Spray Coating • Extrusion Blow Molding	• Film Extrusion

Physical	Nominal Value Unit	Test Method
Density	0.918 g/cm ³	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	1.0 g/10 min	ASTM D1238

Films	Nominal Value Unit	Test Method
Film Thickness - Tested	25 µm	
Film Puncture Energy (25 µm)	65.0 J	Internal Method
Secant Modulus		ASTM D882
1% Secant, MD: 25 µm, Blown Film	193 MPa	
1% Secant, TD: 25 µm, Blown Film	221 MPa	
Tensile Strength		ASTM D882
MD: Break, 25 µm, Blown Film	34.0 MPa	
TD: Break, 25 µm, Blown Film	26.0 MPa	
Tensile Elongation		ASTM D882
MD: Break, 25 µm, Blown Film	800 %	
TD: Break, 25 µm, Blown Film	850 %	
Dart Drop Impact (Blown Film)	100 g	ASTM D1709A
Elmendorf Tear Strength ²		ASTM D1922
MD: 25.0 µm	35.0 kN/m	
TD: 25.0 µm	135.0 kN/m	

Thermal	Nominal Value Unit	Test Method
Melting Temperature	124 °C	Internal Method

Optical	Nominal Value Unit	Test Method
Gloss (45°, 25.0 µm, Blown Film)	50	ASTM D2457
Haze (25.0 µm, Blown Film)	14 %	ASTM D1003

Extrusion	Nominal Value Unit
Hopper Temperature	210 °C
Cylinder Zone 1 Temp.	180 to 210 °C
Cylinder Zone 2 Temp.	180 to 210 °C
Cylinder Zone 3 Temp.	180 to 210 °C
Cylinder Zone 4 Temp.	180 to 210 °C
Cylinder Zone 5 Temp.	180 to 210 °C
Adapter Temperature	210 °C
Melt Temperature	210 °C
Die Temperature	210 °C

Extrusion Notes

Die Gap: >1.8 mm

Notes

¹ Typical properties: these are not to be construed as specifications.

² Blown Film

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Revision History
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The information presented on this datasheet was acquired by IDES from the producer of the material. IDES makes substantial efforts to assure the accuracy of this data. However, IDES assumes no responsibility for the data values and strongly encourages that upon final material selection, data points are validated with the material supplier.

APPENDIX – D : TDS of Lotrene 0274

Exclusive Agent for QATAR PETROCHEMICAL COMPANY LTD. (QAPCO)

Lotrene ® FD0274 LOW DENSITY POLYETHYLENE

DESCRIPTION:

Lotrene ® FD0274 is mainly recommended for the extrusion of thin film for light and medium duty applications. It contains both slip agent and anti blocking devise.

PROPERTIES:

The suitable molecular structure of Lotrene ® FD0274 makes it possible to produce very thin, clear and glossy films.

Lotrene ® FD0274 gives films of especially good dimensional stability with easy sealing no matter what type of machine is used.

POLYMER PROPERTIES	VALUE	UNIT	TEST METHOD
Melt flow index	2.4	g/10min	ASTM D – 1238
Density @ 23 'C	0.923	g/cm3	ASTM D – 1505
Crystalline Melting point	111	'C	ASTM E – 794
Vicat Softening Point	94	'C	ASTM D – 1525
POLYMER PROPERTIES	VALUE	UNIT	TEST METHOD
Tensile strength @ yield MD/TD	14/11	MPa	ASTM D – 882
Tensile strength @ Break MD/TD	22/21	MPa	ASTM D – 882
Elongation @ Break MD/TD	470/570	%	ASTM D – 882
Impact Strength, F50	110	G	ASTM – 1709
Coefficient of Friction	0.10	-	ASTM D – 1894
Haze	6.5	%	ASTM D – 1003
Gloss (@ 45 ')	75	GU	ASTM D – 2457
Clarity	85	%	ASTM D – 1746

(The above properties are measured on a blown film of 50 µ, @ 2.50 BUR)

Note: the values given in this technical data sheet are the results of tests carried out in accordance with standard test procedures. They are given as indication to enable customers to make the best use of our products but must be considered as average values provided without implying any undertaking on our part.

PROCESSING:

Lotrene® FD 0274 can be easily processed on all types of extruders to make blown or cast films.

The melt temperature is suggested to be in the range of 140 – 150 – 'C.

The best properties of the blown film are achieved at blow up ratios between 2 . 5 : 1 and 3 . 5 : 1.

To avoid blocking and shrinkage on the reel, the temperature at the nip rolls and take – off should be kept as close as possible to the ambient temperature.

The recommended thickness range is from 25 µm 100 µm.

APPLICATIONS:

- . Thin transparent film
- . Food packaging
- . High clarity film
- . Lamination film

SAFETY AND STORAGE:

Under normal conditions Loyrene® FD 0274 does not present a toxic hazard through skin contact or inhalation. During processing, contact with molten polymer and inhalation of volatilized fumes should be avoided.

Loyrene® FD 0274 complies with food grade regulations FDA, 21 FR chapter 177 – 1520 Olefin polymers. Items made from this grade do not transmit tests Nor odor to the material in contact with.

Loyrene® FD 0274 is inflammable and combustible (Category 3) according to ISO R 1210.

Loyrene® FD 0274 is supplied in plastic bags of 25 kg (Net weight) each. The bags are stcked and shrink wrapped on pallets of 1500 kg each (Net weight). The product is forwarded either by trucks or in 20 – foot sea containers.

Loyrene® FD 0274 should not be stored for more than three months nor be exposed to direct sunlight and/or heating during storage since this may adversely affect the properties of the product.

APPENDIX – E : TDS of Lotrene 5026

Exclusive Agent for QATAR PETROCHEMICAL COMPANY LTD. (QAPCO)

**Lotrene ® FB5026
LOW DENSITY POLYETHYLENE**

DESCRIPTION

Lotrene ® F5026 is mainly recommended for heavy duty film applications with good optical properties. It contains additive that gives good slip properties.

PROPERTIES

The suitable molecular structure of Lotrene ® F5026 makes it possible to produce very thin, clear and glossy films.

Lotrene ® F5026 produces films that are very strong, sufficiently rigid for automatic packaging machines, suitable for shrink wrapping and have good dimensional stability.

POLYMER PROPERTIES	VALUE	UNIT	TEST METHOD
Melt Flow index	0.60	g/10 min	ASTM D-1238
Density @ 23 'C	0.920	g/cm3	ASTM D-1505
Crystalline Melting Point	108	'C	ASTM E-794
Vicat Softening Point	93	' C	ASTM D-1525
FILM PROPERTIES	VALUE	UNIT	TEST METHOD
Tensile Strength @ Yield MD/TD	14/11	MPa	ASTM D-882
Tensile Strength @ Break MD/TD	24/24	Mpa	ASTM D-882
Elongation @ Break MD/TD	550/600	%	ASTM D-882
Impact Strength, F50	200	G	ASTM D-1709
Coefficient of Friction	0.20	-	ASTM D-1894
Haze	11	%	ASTM D-1003
Gloss (@45')	45	GU	ASTM D-2457
Clarity	45	%	ASTM D-1746

(The above properties are measured on a blown film of 50 µ, @ 205 BUR)

Note : The values given in this technical data sheet are the results of testes carried out in accordance with standard test procedures. They are given as indication to enable customers to makes the best use of our products but must be considered as average values provided without implying any undertaking on our part.

PROCESSING

Lotrene ® F5026 can be easily processed on all types of extruders designed for polyethylene.

The melt temperature is suggested to be in the range of 160-180°C.

The best properties of the blown film are achieved at blow up ratios between 2.5:1 and 3. 5:1 .

To avoid blocking and shrinkage on the reel, the temperature at the nip rolls and take-off should be kept as close as possible to the ambient temperature.

The recommended thickness range is from 40 µm 200 µm.

APPLICATION

- . Shopping bags
- . Medium duty carrier bags
- . Milk bags (pouches)
- . Industrial liners

SAFETY AND STORAGE

Under normal conditions Lotrene ® F5026 does not present a toxic hazard through skin contact or inhalation. During processing, contact with molten polymer and inhalation of volatilized fumes should be avoided.

Lotrene ® F5026 complies with food grade regulations FDA, 21 FR Chapter 177-1520 'Olefin Polymers'. Items made from this grade do not transmit tests Nor odor to the material in contact with.

Lotrene ® F5026 is inflammable and Combustible(category 3) according to ISO R 1210 .

Lotrene ® F5026 is supplied in plastic bags of 25 kg (net weight) each.
The bags are stacked and shrink wrapped on pallets of 1500 kg each (net weight) .
The product is forwarded either by trucks or in 20- foot sea containers.

Lotrene ® F5026 should not be stored for more than three months nor be exposed to direct sunlight and/or heating during storage since this may adversely affect the properties of the product.

APPENDIX – F : TDS of Affinity 1881G

1/25/2017

Dow AFFINITY™ PL 1881G Polyolefin Plastomer (POP)

Dow AFFINITY™ PL 1881G Polyolefin Plastomer (POP)

Categories: [Polymer](#); [Film](#); [Thermoplastic](#); [Polyolefin](#)

Material Notes: AFFINITY™ PL 1881G Polyolefin Plastomer (POP) is produced via INSITE™ Technologies. It is designed for use in a variety of packaging applications, including high-speed, form-fill-seal products.

Information provided by Dow

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	0.9035 g/cc	0.03264 lb/in ³	ASTM D792
Thickness	50.8 microns	2.00 mil	
Melt Flow	1.0 g/10 min	1.0 g/10 min	ASTM D1238
Antiblock Level	2500 ppm	2500 ppm	
Slip Level	750 ppm	750 ppm	

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	8.07 MPa	1170 psi	ASTM D882
Film Tensile Strength at Yield, TD	7.17 MPa	1040 psi	ASTM D882
Film Elongation at Break, MD	585 %	585 %	ASTM D882
Film Elongation at Break, TD	630 %	630 %	ASTM D882
Secant Modulus, MD	0.0970 GPa	14.1 ksi	2% Secant; ASTM D882
Secant Modulus, TD	0.0970 GPa	14.1 ksi	2% Secant; ASTM D882
Impact	18.5	18.5	[lb _f]; Puncture Resistance Force; Dow Method
	265	265	[ft-lbf/in ³]; Puncture Resistance; Dow Method
Puncture Energy	8.09 J	5.97 ft-lb	Dow Method
Coefficient of Friction, Dynamic	0.15	0.15	film/film; ASTM D1894
Elmendorf Tear Strength MD	560 g	560 g	Modified rectangular test specimen; ASTM D1922
Elmendorf Tear Strength TD	730 g	730 g	Modified rectangular test specimen; ASTM D1922
Elmendorf Tear Strength, MD	11.0 g/micron	280 g/mil	ASTM D1922
Elmendorf Tear Strength, TD	14.4 g/micron	365 g/mil	ASTM D1922
Dart Drop Test	>= 830 g	>= 1.83 lb	Method B; ASTM D1709
Film Tensile Strength at Break, MD	45.4 MPa	6580 psi	ASTM D882
Film Tensile Strength at Break, TD	42.5 MPa	6170 psi	ASTM D882
Heat Seal Strength Initiation Temperature	85.0 °C	185 °F	2 lb/in heat seal strength; 0.5 sec dwell, 40 psi bar pressure, pull speed 10 (in./min.); Dow Method

Thermal Properties	Metric	English	Comments
Melting Point	100 °C	212 °F	Dow Method (DSC)
Vicat Softening Point	86.0 °C	187 °F	ASTM D1525

Optical Properties	Metric	English	Comments
Haze	3.2 %	3.2 %	ASTM D1003
Gloss	112 %	112 %	20°; ASTM D2457
Transmission, Visible	83 %	83 %	Clarity; ASTM D1746

Descriptive Properties			
Block Force g		70	ASTM D3354-89

http://www.matweb.com/search/datasheet_print.aspx?matguid=6f8a83ba2b9d4a5ca16302b927bfca15

1/2

APPENDIX – G : TDS of Elite 5401G

1/25/2017

Dow ELITE™ 5401G Enhanced Polyethylene Resin

Dow ELITE™ 5401G Enhanced Polyethylene Resin

Categories: [Polymer](#); [Film](#); [Thermoplastic](#); [Polyethylene \(PE\)](#); [LLDPE](#)

Material Notes: ELITE™ 5401G is a copolymer produced via INSITE™ Technology from Dow Plastics. It offers a unique combination of low seal initiation, moderate stiffness and low blocking for excellent performance on automated packaging equipment. ELLITE™ 5401G resin complies with U.S. FDA regulation 21 CFR 177.1520 (c) 3.2a.

Information provided by Dow

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	0.9175 g/cc	0.03315 lb/in ³	ASTM D792
Thickness	50.8 microns	2.00 mil	
Melt Flow	1.0 g/10 min	1.0 g/10 min	ASTM D1238
Antiblock Level	2500 ppm	2500 ppm	
Slip Level	1000 ppm	1000 ppm	

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	8.267 MPa	1199 psi	ASTM D882
Film Tensile Strength at Yield, TD	8.811 MPa	1278 psi	ASTM D882
Film Elongation at Break, MD	572 %	572 %	ASTM D882
Film Elongation at Break, TD	612 %	612 %	ASTM D882
Secant Modulus, MD	0.1809 GPa	26.23 ksi	2% Secant; ASTM D882
Secant Modulus, TD	0.2044 GPa	29.65 ksi	2% Secant; ASTM D882
Impact	18	18	[lb _f]; Puncture Resistance Force; Dow Method
	168	168	[ft-lbf/in ²]; Puncture Resistance; Dow Method
Puncture Energy	5.76 J	4.25 ft-lb	Dow Method
Elmendorf Tear Strength MD	780 g	780 g	ASTM D1922
Elmendorf Tear Strength TD	975 g	975 g	ASTM D1922
Elmendorf Tear Strength, MD	15.4 g/micron	390 g/mil	ASTM D1922
Elmendorf Tear Strength, TD	19.19 g/micron	487.5 g/mil	ASTM D1922
Dart Drop Test	>= 850 g	>= 1.87 lb	Method B; ASTM D1709
Film Tensile Strength at Break, MD	38.04 MPa	5517 psi	ASTM D882
Film Tensile Strength at Break, TD	36.54 MPa	5299 psi	ASTM D882
Heat Seal Strength Initiation Temperature	95.0 °C	203 °F	2 lb/in heat seal strength; 0.5 sec dwell, 40 psi bar pressure, pull speed 10 (in./min.); Dow Method

Thermal Properties	Metric	English	Comments
Melting Point	123 °C	253 °F	Dow Method (DSC)
Vicat Softening Point	100 °C	212 °F	ASTM D1525

Optical Properties	Metric	English	Comments
Haze	13 %	13 %	ASTM D1003
Gloss	64 %	64 %	45°; ASTM D2457

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's [terms of use](#) regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.

APPENDIX – H : TDS of Dry Lamination Adhesive



ADCOTE™ 545-80 Laminating Adhesive

Description

ADCOTE 545-80 is a solvent based two component polyurethane adhesive with high solid characteristics, excellent heat and chemical resistance. This polyester adhesive in conjunction with various isocyanate terminated coreactants functions as a laminating adhesive for flexible packaging and industrial applications. ADCOTE 545-80 provides optical clarity and high bond strength.

ADCOTE 545-80 adhesive adheres to a wide variety of substrates including cellophane, treated polyolefins, polyester, polyamide, aluminum foil, paper, metalized and PVDC coated materials, and the treated side of heat-sealable coextruded films.

Typical Uses

ADCOTE 545-80 with Coreactant F is suitable for the lamination of transparent and aluminum-containing structures with and without sandwich printing. Principal uses are in flexible materials for food pouches, vacuum or gas flushed luncheon meats and cheese, coffee pouches, condiment packaging, cable wrap laminations, liquid packaging, hygroscopic powders, chemicals and cosmetics.

Typical Properties*

These properties are typical but do not constitute specifications.

	ADCOTE 545-80 (OH Component)	Coreactant F ** (NCO Component)
Solids	80%	75%
Viscosity	6500 cps @ 77°F (25°C)	1800 cps @ 77°F (25°C)
Weight/Gallon	9.1 lbs (1.10 g/cc)	9.9 lbs (1.19 g/cc)
Solvents	Methyl ethyl ketone	Ethyl acetate
Mix Ratio	100 parts by weight	14 parts by weight
Diluents	Methyl ethyl ketone, toluene, or urethane grade ethyl acetate	
Shelf Life	360 days	180 days

*These items are provided for general information only. They are approximate values and are not considered part of a product specification.

**Other coreactants are available for special uses. Consult your Rohm and Haas sales representative for further information.

Safety, Handling and Storage

- Store in cool, dry, well-ventilated area away from heat and ignition sources. Keep container tightly closed.
- Hot organic chemical vapors can suddenly and without warning ignite when mixed with air. Ignition can occur at typical elevated temperature process conditions. Please evaluate such processes to assure safe handling conditions.
- Support and ground containers before opening, dispensing, mixing, pouring or emptying. Open with non-sparking tools. If container is warm, open bung slowly to release the internal pressure.
- Wash thoroughly after handling. Wash contaminated goggles, face shield, and gloves. Professionally launder contaminated clothing before re-use.
- ATTENTION! Container can be hazardous when empty. Follow label warnings even after container is empty. Do not use heat, sparks, open flames, torches or cigarettes on or near empty containers. Do not reuse empty container without professional cleaning.
- Refer to Material Safety Data Sheet for more information.

Alcohol and similar materials containing active hydrogen can react with the ADCOTE 545-80 and Coreactant F causing inadequate cure. ADCOTE 545-80 with Coreactant F could potentially interact with other constituents of the laminated structures. Retained solvents, printing inks, slip additives, film additives, antiblock agents, coatings, contaminated solvents as well as the packed product are some of the components that may cause property changes of the film and/or adhesive.

Recommended Operating Conditions

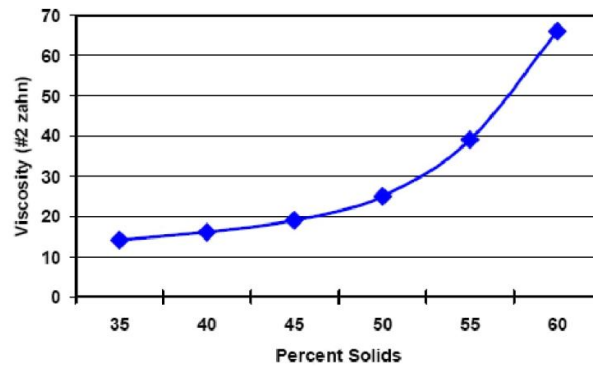
Application Method	Direct gravure	
Application Cylinder	165 - 200 line (65 - 80 line per cm)	
Application Solids	35 - 50%	
Pot Life	Static	8 hours approximately
	Dynamic	24 hours approximately
Dry Adhesive Weight	1.1 - 2.5 lbs/ream (2 - 4.5 gsm) depending on structure	
Drying Web Temperature	150 - 200°F (65 - 93°C)	
Lamination Temperature	125 - 180°F (52 - 82°C)	
Cure Time	5 - 10 days at 70°F (21°C)	
Slitting/Rewinding Time	4 - 8 hours at 70°F (21°C)	
Cleaning Solvent	Methyl ethyl ketone, ethyl acetate or other suitable organic solvents.	

Initial bond immediately off the laminator is good. Within 48 hours the bond strength will be sufficient for further processing, such as slitting and rewinding. Maximum properties of heat and chemical resistance will develop within 5 - 10 days.

Dilution Table

Solids content (%)	ADCOTE 545-80 (parts)	Coreactant F (parts)	Methyl ethyl ketone or Ethyl acetate (parts)
60	100	14	37
55	100	14	50
50	100	14	67
45	100	14	87
40	100	14	112
35	100	14	145

Viscosity of Adcote 545-80/Coreactant F



APPENDIX – I : TDS of Solvent

INEOS Oxide

- Technical Data Sheet

Ethyl Acetate

CAS No. 141-78-6
IUPAC name: ethyl ethanoate
Other names: acetic acid ethyl ester

TYPICAL PHYSICAL PROPERTIES

Parameter	Conditions	Units	Value
Density	20°C	kg/l	0.9008
Litres per tonne	20°C		1110
Boiling point		°C	76.5
Azeotrope with water			
	wt % solvent	% wt	6.79
	boiling point	°C	3.435
Flash point	ACC	°C	- 3
Auto-ignition temperature		°C	426
Flammable limits			
	upper	% volume	11.5
	lower	% volume	2.2
Viscosity	20°C	mPa.s	0.46
Refractive index	n _D ²⁰		1.373
Vapour pressure	20°C	mbar	96.9
Relative evaporation rate	20°C	(n-butyl acetate= 1)	4.2
Volume resistivity		Ωm	1.1 x 10 ⁷
Hansen solubility parameters			
	δ _d	MPa ^{1/2} {(cal cm ⁻³) ^{1/2} }	15.8 (7.7)
	δ _p	MPa ^{1/2} {(cal cm ⁻³) ^{1/2} }	5.3 (2.6)
	δ _h	MPa ^{1/2} {(cal cm ⁻³) ^{1/2} }	7.2 (3.5)
NHE solubility parameters			
	solubility parameter		8.8
	fractional polarity		0.167
	hydrogen bonding index		8.4

ABBREVIATIONS

ACC Abel Closed Cup
NHE Nelson, Hemwall & Edwards

HANDLING AND STORAGE

Ethyl Acetate is a highly flammable liquid.

Bulk quantities of Ethyl Acetate must be stored outside in detached tanks. Storage tanks must be positioned within a bunded area. Ethyl Acetate must be stored away from sources of heat or ignition, and away from incompatible materials (oxidizing agents, acids, bases, ...).

Dry acetates have a negligible corrosive action on metals and may be stored or processed safely in either mild steel or aluminium. They can be stored under ambient conditions of temperature and pressure.

Blanketing must be provided on the storage tanks using dry nitrogen. Blanketing is required to retain the quality during prolonged storage. It also prevents the formation of a flammable atmosphere in the vapour space. Ethyl Acetate is stable under recommended storage conditions for 2 years.

Storage and transfer equipment must be adequately earthed and bonded to prevent the accumulation of static charges. Storage tanks should preferably be bottom filled. Where top filling has to be carried out, the filling should exclude the possibility of splashing.

Under normal conditions in industrial use Ethyl Acetate does not present an appreciable health hazard. Precautions should be taken to prevent entry into the eyes and to avoid prolonged or repeated contact with the skin. Suitable protective clothing including goggles and rubber or PVC gloves should be worn when handling. Adequate natural or exhaust ventilation should be provided to prevent gross exposure to vapours.

A Safety Data Sheet has been issued describing the health, safety and environmental properties of Ethyl Acetate, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage or use.

EXCLUSION OF LIABILITY

Information contained in this publication is accurate to the best of the knowledge and belief of INEOS. Any information or advice obtained from INEOS otherwise than by means of this publication is given in good faith. However it remains at all times the responsibility of the customer to ensure that INEOS materials are suitable for the purpose for which they are intended by the customer.

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Ethyl Acetate - Technical Datasheet - March 2008

Further information is available from:

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BELGIUM

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Fax: +32 3 252 8453

APPENDIX – J : Material blends tried out to produce LLDPE

Material	Inner Layer (%)	Middle Layer (%)	Outer Layer (%)
Equate 7087	-	-	80
Lotrene 5026	20	20	20
Affinity 1881	70	50	-
Elite 5401	10	30	-
PPA	100 g	100 g	100 g

Material	Inner Layer (%)	Middle Layer (%)	Outer Layer (%)
Equate 7087	-	-	80
Lotrene 5026	20	20	20
Affinity 1881	70	30	-
Elite 5401	10	50	-
PPA	100 g	100 g	100 g

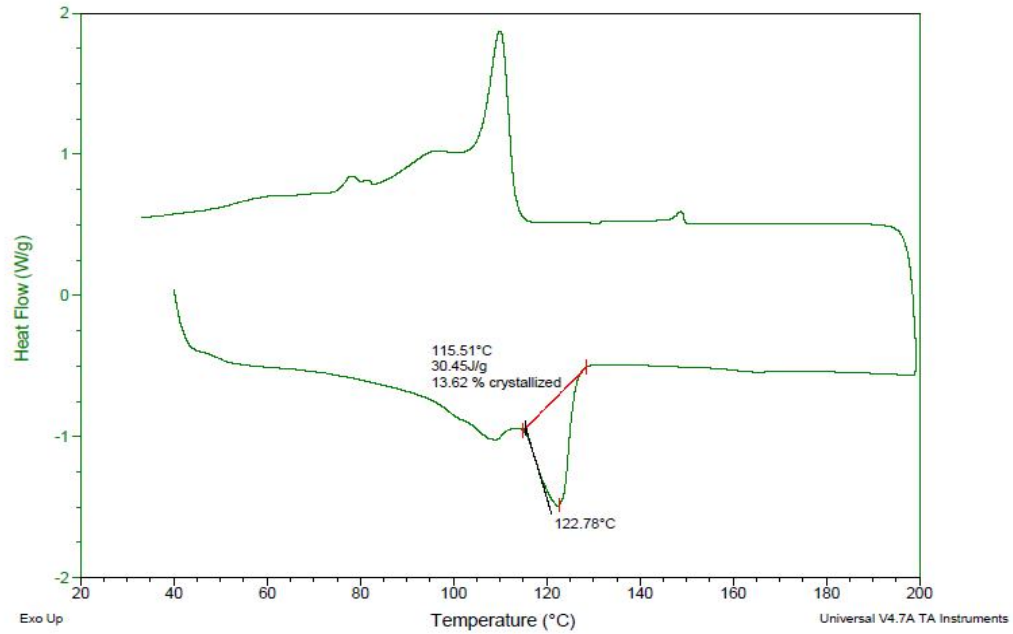
Material	Inner Layer (%)	Middle Layer (%)	Outer Layer (%)
Equate 7087	-	80	80
Lotrene 5026	20	20	20
Affinity 1881	70	-	-
Elite 5401	10	-	-
PPA	100 g	100 g	100 g

APPENDIX – K : DSC Curves of Sealant Material LLDPE

Sample: dilki-1-24-01
Size: 5.0000 mg
Method: ramp

DSC

File: C:\TA\Data\dr_jagath\dilki-1-24-01.001
Operator: Mr Kalum Gunaratne
Run Date: 23-Jan-2017 12:23
Instrument: DSC Q20 V24.4 Build 116



Sample: dilki-2-24-01
Size: 5.0000 mg
Method: ramp

DSC

File: C:\TA\Data\dr_jagath\dilki-2-24-01.001
Operator: Mr Kalum Gunaratne
Run Date: 23-Jan-2017 14:27
Instrument: DSC Q20 V24.4 Build 116

