



SHAZAND PETROCHEMICAL COMPANY
 (ISO 9001 & ISO 14001 & ISO 18001 Certified Company)
 QUALITY CONTROL CERTIFICATE

LLDPE (Plus) Linear Low-Density Polyethylene Product
 (LLDPE) Grades
 LL-20075 AA

Date of Issue : 10.10.96

Lot NO. : 96450

NO	Properties	Units	Test Method	Spec	Result
1	MF(190/2.16kg)	g/10min	ASTM D 1238	0.65-0.86	0.71
2	Density	g/cm ³	HOECHST METHOD	0.919-0.921	0.9206
3	Tensile Strength @ Yield(MD)	MPa	BP METHOD		12.0
4	Tensile Strength @ Yield(TD)	MPa	ASTM D 882		11.0
5	Tensile Strength @ Break(MD)	MPa	ASTM D 882		21.6
6	Tensile Strength @ Break(TD)	MPa	ASTM D 882		20.2
7	Elongation @Break(MD)	%	ASTM D 882		815.0
8	Elongation @Break(TD)	%	ASTM D 882		932.0
9	Tear Strength(MD)	g/25micron	ASTM D 1922		142.9
10	Tear Strength(TD)	g/25micron	BP METHOD		334.2
11	Impact Strength(Dart)	g	ASTM D 1709		81.5

CLASSIFICATION

ON SPEC

Shazand Petrochemical co.

ON SPEC

Quality Control Dept.

Quality Control Engineer

Quality Control Manager

Signature

Signature

نامہ جاری ہے
 مہنگہ نمبر آئندہ کیلئے

70-QPC-208-REV.02



TPC

Tabriz Petrochemical Company

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LL 0220 KJ
Liner Low Density polyethylene

- Product Description

- LL0220KJ are linear low density polyethylene copolymers containing butane-1 as the comonomer. In lean blends, this resin offer greater drawdown compared to LDPE neat and produced Films are tough with better tear resistance, high tensile stress and good hot-tack properties. LL0220KJ offers high slip film with easy opening properties when used pure in thickness rang35-100µm. Addition of other polymers or use other thickness may alter film slip and antiblock performance.

- Typical data

Property	Test Method	Unit	Typical Value
Physical Properties			
MFI(190°C/ 2.16Kg)	ASTM D 1238	gr/10min	2.3
MFI(190°C / 21.6Kg)			-
Density	ASTM D 1505	gr/cm ³	0.920
Optical Properties			
Haze	ASTM D 1003	%	12
Gloss(45°)	ASTM D 2457	%	30
Formulation			
Anti Oxidant			√
Anti Block			√
Slip Agent			√
Mechanical Properties			
Dart Drop Impact	ASTM D 1709(A)	g	90
Tear Strength MD/TD	ASTM D 1922	gr/25µm	80/35
Tensile Strength at yield MD/TD	ASTM D 882	MPa	10/11
Tensile Strength at Break MD/TD	ASTM D 882	MPa	30/25
Elongation at Break MD/TD	ASTM D 882	%	1000/1100
Secant Modulus MD/TD	ASTM D 882	MPa	195/205
Puncture Resistance	BPC	N.Cm	800
Coefficient of friction	ASTM D1894		>0.5
Thermal Properties			
Vicat Softening Temperature	ASTM D 1525	°C	100

38µ , 2.5:1 blow-up ratio, 225°C melt temperature.

The above data are typical laboratory average. They are intended to serve as guide only.



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LL0209 AA
Liner Low Density polyethylene

- Product Description

- LL0209AA are linear low density polyethylene copolymers containing butane-1 as the co-monomer. In lean blends, this resin offer greater drawdown compared to LDPE neat and produced Films are tough with better tear resistance, high tensile stress and good hot-tack properties.

- Typical data

Property	Test Method	Unit	Typical Value
Physical Properties			
MFI(190°C/ 2.16Kg)	ASTM D 1238	gr/10Min	0.9
MFI(190°C/ 21.6Kg)			29.0
Density	ASTM D 1505	gr/cm ³	0.920
Optical Properties			
Haze	ASTM D 1003	%	12
Gloss(45°)	ASTM D 2457	%	50
Formulation			
Anti Oxidant			√
Anti Block			-
Slip Agent			-
Mechanical Properties			
Dart Drop Impact	ASTM D 1709(A)	g	140
Tear Strength MD/TD	ASTM D 1922	gr/25µm	145/370
Tensile Strength at yield MD/ TD	ASTM D 882	MPa	10/11
Tensile Strength at Break MD/ TD	ASTM D 882	MPa	41/32
Elongation at Break MD/ TD	ASTM D 882	%	620/840
Secant Modulus MD/ TD	ASTM D 882	MPa	195/205
Puncture Resistance	BPC	N.Cm	800
Coefficient of friction	ASTM D1894		> 0.5
Thermal Properties			
Vicat Softening Temperature	ASTM D 1525	°C	100

38µ , 2.5:1 blow-up ratio, 225°C melt temperature.

The above data are typical laboratory average. They are intended to serve as guide only.



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LL 0209 KJ
Liner Low Density polyethylene

- Product Description

- LL0209KJ are linear low density polyethylene copolymers containing butane-1 as the comonomer. In lean blends, this resin offer greater drawdown compared to LDPE neat and produced Films are tough with better tear resistance, high tensile stress and good hot-tack properties. LL0209KJ offers high slip film with easy opening properties when used pure in thickness rang 35-100µm. Addition of other polymers or use other thickness may alter film slip and anti-block performance.

- Typical data

Property	Test Method	Unit	Typical Value
Physical Properties			
MFI(190°C/ 2.16Kg)	ASTM D 1238	gr/10Min	0.9
MFI(190°C/ 21.6Kg)			29.0
Density	ASTM D 1505	gr/cm ³	0.920
Optical Properties			
Haze	ASTM D 1003	%	12
Gloss(45°)	ASTM D 2457	%	50
Formulation			
Anti Oxidant			√
Anti Block			√
Slip Agent			√
Mechanical Properties			
Dart Drop Impact	ASTM D 1709(A)	g	140
Tear Strength MD/TD	ASTM D 1922	gr/25µm	145/370
Tensile Strength at yield MD/TD	ASTM D 882	MPa	10/11
Tensile Strength at Break MD/TD	ASTM D 882	MPa	41/32
Elongation at Break MD/TD	ASTM D 882	%	620/840
Secant Modulus MD/TD	ASTM D 882	MPa	195/205
Puncture Resistance	BPC	N.Cm	800
Coefficient of friction	ASTM D1894		0.13
Thermal Properties			
Vicat Softening Temperature	ASTM D 1525	°C	100

* 38µ , 2.5:1 blow-up ratio, 225°C melt temperature.

The above data are typical laboratory average. They are intended to serve as guide only.

1 Product Description:

“LL 0209AA” is a LLDPE copolymer with butene as comonomer which contains antioxidant. It is recommended for general purpose applications. It is suitable for blending with conventional LDPE. Film made from pure LL 02090 AA has the following advantages over conventional LDPE:
 Better sealing, higher puncture resistance.
 Greater drawdown capability.
 Higher tensile strength.
 Neutralizer: Calcium Stearate.
 Antioxidant: Irganox1010, Irganox168

2 Applications:

- Food Grade
- Heave duty sacks, agricultural films, liners.
- Produce bags, stretch film



LLDPE

No.	Property	Result	Value	Unit	Test Method
1	MFR (190°C/2.16kg)		0.9	g/10min	ISO 1133
2	Density		920	Kg/m ³	ISO 1183
3	Tensile Strength at Yield MD/TD		10/11	MPa	ISO 527
4	Tensile Strength at Break MD/TD		41/32	MPa	ISO 527
5	Elongation at Break MD/TD		620/840	%	ISO 527
6	Tear Strength MD/TD		145/370	g/25μ	ASTM D1922
7	Dart Drop Impact		150	g	ASTM D1709

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

AKPC

AMIR KABIR PETROCHEMICAL COMPANY
LLDPE LL0209 KJ or SR
 Linear Low Density Polyethylene

A M I R K A B I R P E T R O C H E M I C A L C O M P A N Y

1 Product Description:



“LL 0209KJ” is a LLDPE copolymer with butene as comonomer which contains antioxidant, Slip and antiblock additives. It gives film of high slip which is easily separable.
 It is recommended for general purpose applications. It is suitable for blending with conventional LDPE. Film made from pure LL 0209 KJ has the following advantages over conventional LDPE:
 Easier sealing.
 Greater drawdown capability.
 Higher tensile strength.
 Higher puncture resistance.

2 Applications:

- Food Grade
- refuse sacks.
- produce bags, carrier bags.

LLDPE

High Slip/Antiblock Grade		
Additive	Silica	Talc
Neutralizer	Calcium Stearate	Calcium Stearate
Antioxidant	Irganox1010 , Irgafos 168	Irganox1010 , Irgafos168
Antiblock	Siloblock47	Talc.ABT 250
Slip	Erucamide	Erucamide

No.	Property	Value	Unit	Test Method
1	MFR (190°C/2.16kg)	0.9	g/10min	ISO 1133
2	Density	921	Kg/m ³	ISO 1183
3	Tensile Strength at Yield MD/TD	10/11	MPa	ISO 527
4	Tensile Strength at Break MD/TD	41/32	MPa	ISO 527
5	Elongation at Break MD/TD	620/840	%	ISO 527
6	Tear Strength MD/TD	145/370	g/25μ	ASTM D1922
7	Dart Drop Impact	150	g	ASTM D1709

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

AKPC