

LyondellBasell Polyolefins Resin for New Energy Vehicle (NEV) Market

利安德巴赛尔新能源汽车行业聚烯烃树脂产品手册





With the global development trend of energy conservation and environmental protection requirements, automotive materials are also developing in the direction of lightweight, comfortable, and environmentally friendly (low odor, low VOC). In response to this trend, LyondellBasell offers its customers a range of innovative solutions:

在全球节能与环保的发展趋势下，汽车材料的使用也向着轻量化、舒适性、环保（低气味、低VOC）的方向发展。为了顺应这种趋势，利安德巴赛尔为客户提供一系列的创新解决方案：

LyondellBasell Solution for NEV

- Anti-tiger stripes solution 抗虎皮纹解决方案
- Transparent interior solution 透明内饰解决方案
- Low shrinkage solution 低收缩解决方案
- High pressure PHEV-PFT material solution 插电混动电动车高压油箱解决方案

The diverse polymer solution from LyondellBasell is uniquely positioned to address your challenges in NEV.

利安德巴赛尔的多样化聚合物解决方案具有独特的优势，可以应对您在新能源汽车领域的挑战。

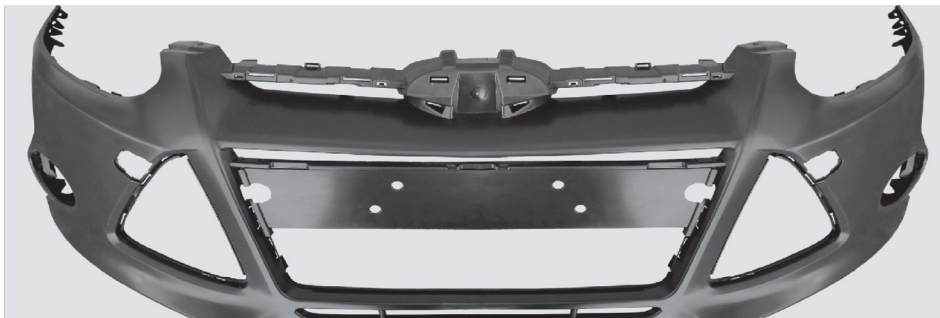
Material Solutions for NEV

Anti-tiger stripes solution 抗虎皮纹解决方案	Transparent interior solution 透明内饰解决方案	Low shrinkage solution 低收缩解决方案	High pressure PHEV-PFT solution 混动电动车高压油箱解决方案
Hifax X1956A	Metocene HM840N	Hifax EP246P	Lupolen 4261AG
Hifax EP5175	Clyrell RC5056	Hifax EP110J	Lupolen 4261 A IM
Hifax EP5091			
Hifax EP555T			

Luxury aesthetics - Anti-tiger stripes solution

奢华美学 – 抗虎皮纹解决方案

Polypropylene, advanced HECO PP copolymer for compounding



Hifax X1956A is primarily used in polyolefin-based compounds to improve mechanical properties and enhance moulded part appearance. In particular, the product is used by our customers for providing tiger stripe resistance and improved aesthetics for unpainted automotive components.

*Hifax X1956A*主要用于聚烯烃基化合物，用以提高产品的机械性能并改善零件的美观性。特别是，我们的客户在未喷漆汽车部件使用该产品，用于抗虎皮纹和改善产品的美观性。

Taking into account the MFR of this grade (0.9 g/10min) following the industry needs on high MFR and high performed compounds, LyondellBasell team developed a serial of new materials – *Hifax EP5175*, *EP5091*, *EP555T* which combine high MFR and excellent performance as anti-tiger stripe functional modifier. These resins open new opportunities for the development of new high-end materials for advanced applications.

考虑到 *Hifax X1956A* 的 MFR (0.9 g/10min)，为了满足行业对高 MFR 和高性能化合物的需求，利安德巴赛尔团队开发了一系列新材料——*Hifax EP5175*、*EP5091*、*EP555T*，它们结合了高 MFR 和优异的抗虎皮纹特性。这些树脂为开发用于先进应用的新型高端材料开辟了新的机会。

Resin properties

Physical properties	Method	Units	<i>Hifax X1956A</i>	<i>Hifax EP5175</i>	<i>Hifax EP5091</i>	<i>Hifax EP555T</i>
Melt Flow Rate (230 °C/2.16 kg)	ASTM D1238L	g/10 min	0.9	10	30	60
Mechanical						
Flexural Modulus	ASTM D790	Kg/cm ²	8000	9000	12000	14000
Impact Properties						
Izod @ 23 °C	ASTM D256	Kgcm/cm	95*	NB	7	6
Izod @ -20 °C	ASTM D256	Kgcm/cm	10*	4	2	2

* Charpy (Notched) (ISO 179)

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Product Benefits

- Maintain the impact/stiffness balance of the compound
保持改性后材料的刚韧平衡
- Improve drastically the aesthetic of the molded part 提高产品的表面美观度

Typical applications



Effective tiger stripe suppressor for polypropylene compounds
聚丙烯改性，改善虎皮纹

Lupolen 4261AG - High Pressure PHEV-PFT Material Solution

插电混动电动车高压油箱解决方案

High molecular weight high density polyethylene for PHEV fuel tanks.



Product Benefits

- Antioxidant 抗氧化
- High ESCR (Environmental Stress Cracking Resistance) 高耐环境应力开裂性
- High Impact Resistance 高抗冲击性

LyondellBasell has developed the *Lupolen 4261AG* for the production of automotive fuel tanks. 利安德巴赛尔开发了 *Lupolen 4261AG*，用于生产汽车油箱。

Lupolen 4261AG is a high molecular weight high density polyethylene. The product features an outstanding Environmental Stress Cracking Resistance (ESCR), good chemical resistance in combination with an excellent low temperature impact resistance. Typical processes include blow molding and thermoforming.

*Lupolen 4261AG*是一种高分子量高密度聚乙烯。该产品具有出色的耐环境应力开裂性 (ESCR)、良好的耐化学性以及出色的耐低温冲击性。典型工艺包括吹塑成型和热成型。

Typical applications



Fuel Tanks; Non-fuel Reservoirs
油箱;非燃料储罐

Resin properties

Physical properties	Method	Units	<i>Lupolen 4261AG</i>
Melt Flow Rate (190 °C/21.6 kg)	ISO 1133-1	g/10 min	6.0
Mechanical			
Flexural Modulus	ISO 178	MPa	1100
Tensile strength Y	ISO 527	MPa	24
ESCR, F10(10% Igepal® , Cond B)	ASTM D1693	Hr	1000
Impact Properties			
Tensile Impact Strength, <small>Note: notched, type 1, -30°C.</small>	ISO 8256	kJ/m ²	170
Thermal Properties			
Vicat Softening Temperature, (A/50)	ISO 306	°C	126
Oxidation Induction Time, (200°C)	ISO 11357-6	min	50

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Luxury aesthetics - Transparent Interior Solution

奢华美学 – 透明内饰解决方案

Metocene HM840N and Clyrell RC5056 for compounding



LyondellBasell has developed the *Metocene* HM840N and *Clyrell* RC5056 for the production of Automotive Interior parts and Home appliances.

利安德巴赛尔开发了 *Metocene* HM840N 和 *Clyrell* RC5056，用于生产汽车内饰件与家用电器。

Metocene HM840N is a metallocene-catalyzed homopolymer for injection molding and compounding with low VOC. *Metocene* HM840N has excellent transparency and gloss with a balance of rigidity and thermal resistance.

Metocene HM840N 是一种茂金属催化均聚物，用于注塑成型和混料，具有低挥发性有机化合物（VOC）的特性。它具有出色的透明度和光泽度，同时兼顾了刚性和耐热性。

Clyrell RC5056 is a polypropylene random copolymer designed for excellent clarity and gloss with rigidity and thermal resistance balance. This grade is selected by customers for use in transparent injection molding articles and containers.

Clyrell RC5056 是一种聚丙烯无规共聚物，旨在实现出色的透明度和光泽度以及刚性和耐热性平衡。客户选择该等级产品用于透明注塑成型制品和容器。

Product Benefits

- Good aesthetic 良好的外观
- High stiffness and transparent 高刚性和高透明性
- High gloss 高光泽

Typical applications



Automotive interior parts (Light or LED beam housing for EV Car, Display part housing)/ Compounding/ Home appliances 汽车内饰件 (EV 汽车用灯或 LED 光束外壳、显示部件外壳) / 改性 / 家用电器

Resin properties

Physical propertie	Method	Units	<i>Clyrell</i> RC5056	<i>Metocene</i> HM840N
Melt Flow Rate (230 °C/2.16 kg)	ASTM D1238L	g/10 min	10	12
Mechanical				
Flexural Modulus	ASTM D790	Kg/cm ²	14000	21500
Tensile strength Y	ASTM D638	Kg/cm ²	350	400
Izod @ 23 °C	ASTM D256	Kgcm/cm	5	2.5
Optical Properties				
Haze (1mm)	ASTM D1003	%	4	4

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PP 聚丙烯

Grade	MFR ASTM D1238L g/10min)	Flexural Modulus ASTM D790) Kg/cm ²	IZOD Impact (Notched) 23 ASTM D256) (kgcm/cm)	IZOD Impact (Notched) -20 ASTM D256) (kgcm/cm)	Features	Market	Typical customer applications
High Crystallinity PP 高结晶聚丙烯							
Adstif EA5073	10	15000	8	3	Good stiffness/ Impact balance/ Good thermal resistance/ Low TVOC 刚韧平衡, 良好的 耐热性, 低TVOC	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ E&E appliances 汽车改性, 电子电器
Adstif EA5074	30	16000	6	2	Good stiffness & Impact balance/ Good thermal resistance/ Low TVOC 刚韧平衡, 良好的 耐热性, 低TVOC	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ E&E appliances 汽车改性, 电子电器
Adstif EA5075	60	16000	5	2	Good stiffness & Impact balance/ Good thermal resistance/ Low TVOC 刚韧平衡, 良好的 耐热性, 低TVOC	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ E&E appliances 汽车改性, 电子电器
Adstif EA5076	110	17000	3	2	Excellent flowability/ High stiffness/ High thermal resistance/ Low TVOC 高流动性, 高刚性, 良好的耐热性, 低TVOC	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ E&E appliances 汽车改性, 电子电器
Adstif HA5034	14	22000	2		High HDT/ High Stiffness/ High surface hardness/ Good pigment dispersion 高耐热, 高刚性, 高硬 度, 良好的颜料分散性	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ Small appliances 汽车改性, 小家电
Adstif HA5029	65	22000	2		High stiffness/ Good flowability/ Heat resistance/ Scratch resistance 高刚性, 高流动性, 高耐热, 耐刮擦	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound/ Small appliances/ TWIM 汽车改性, 小家电, 薄壁注塑
RTPO 反应器合成聚丙烯弹性体							
Hifax BA238A	11	9000	NB	12	Excellent impact resistance at low temperature/ Printability 低温冲击性, 可印刷	Automotive/ Compounds 汽车, 改性	Painted Bumpers/ High impact resistance required applications 涂漆保险杠, 高抗冲 要求的应用
Hifax EP140R	20	6500	NB	--	Excellent impact resistance at low temperature/ High flowability 高流动性, 低温冲击性	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotives Bumper & Door trim/ High impact resistance required application/ Container 汽车保险杠, 门板, 高抗冲要求的应用, 容器

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PP 聚丙烯

Grade	MFR ASTM D1238L g/10min)	Flexural Modulus ASTM D790) Kg/cm ²	IZOD Impact (Notched) 23 ASTM D256) (kgcm/cm)	IZOD Impact (Notched) -20 ASTM D256) (kgcm/cm)	Features	Market	Typical customer applications
RTPO 反应器合成聚丙烯弹性体							
Hifax EP200R	21	7500	NB	13	Excellent impact resistance at low temperature/ High flowability/ Printability 高流动性, 低温 冲击性, 可印刷	Automotive/ Compounds 汽车, 改性	Automotives Bumper & Door trim/ High impact resistance required application/ Container 汽车保险杠, 门板, 高抗冲要求的应用, 容器
Hifax EP5077	40	7500	NB	12	Excellent impact resistance at low temperature/ High flowability/ Printability 高流动性, 低温 冲击性, 可印刷	Automotive/ Compounds 汽车, 改性	Automotive compound/ High impact resistance required applications/ Container 汽车改性, 高抗冲 要求的应用, 容器
Hifax EP150T	50	6000	NB	--	Excellent impact resistance at low temperature/ High flowability 高流动性, 低温 冲击性	Automotive/ Compounds 汽车, 改性	Automotive compound/ High impact resistance required applications/ Container 汽车改性, 高抗冲 要求的应用, 容器
Functional PP 功能性聚丙烯							
Hifax X1956A	0.9	800*	95**	5***	Good Colorability/ Good Impact Resistance/ High Elongation 良好的着色性, 良好的冲击强度, 高伸长率	Automotive/ Compounds/ Industrial, Building & Construction 汽车, 消费品, 工业用品	Exterior Automotive Applications/ Polymer Modifier 汽车外饰应用, 聚合物改性剂
Hifax EP5175	10	9000	NB	4	Good surface performance/ High impact resistance 良好的表面性能, 高冲击	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Functional modifier for automotive compound 汽车用功能改性剂
Hifax EP5091	30	12000	7	2	Good surface performance/ High flowability/ Heat resistance 良好的外观, 高流动性, 耐热性	Automotive/ Compounds 汽车, 改性	Automotive/ Compounds 汽车, 改性
Hifax EP555T	60	14000	6	2	Good surface performance/ High flowability/ Heat resistance 良好的外观, 高流动性, 耐热性	Automotive/ Compounds 汽车, 改性	Automotive/ Compounds 汽车, 改性

* ISO 178 Flexural Modulus MPa

** Charpy Impact (Notched) 23 Note: Failure Mode - Partial Break

*** Charpy Impact (Notched) -20

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PP 聚丙烯

Grade	MFR ASTM D1238L g/10min)	Flexural Modulus ASTM D790) Kg/cm ²	IZOD Impact (Notched) 23 ASTM D256) (kgcm/cm)	IZOD Impact (Notched) -20 ASTM D256) (kgcm/cm)	Features	Market	Typical customer applications
Functional PP 功能性聚丙烯							
Hifax EP246P	20	10000	40	--	Low shrinkage/ Good balance with stiffness and impact resistance/ Good gloss 低收缩, 刚韧平衡, 良好的光泽度	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound 汽车改性
Hifax EP110J	3	6500	NB	--	Low shrinkage/ High impact resistance 低收缩, 高冲击性	Automotive/ Compounds/ Consumer Products 汽车, 改性, 消费品	Automotive compound 汽车改性
Metocene PP 茂金属聚丙烯							
Metocene HM840N	12	21500	2.5	--	High transparency/ High gloss/ High stiffness/High HDT/ Low volatile/ Good aesthetic 高透明, 高光泽, 高刚性, 高HDT, 低挥发, 良好外观	Automotive/ Compounds/ Rigid Packaging/ Consumer Products 汽车, 硬质包装, 消费品	Automotive compound/ Consumer packaging 汽车改性, 消费包装
Metocene HM2015	140	13500	2	--	High flowability/ Low volatile/ Good organoleptic properties and low warpage/ High stiffness 高流动性, 低挥发, 良好的感官, 低翘曲, 高刚性	Automotive/ Compounds/ Rigid Packaging/ Consumer Products 汽车, 硬质包装, 消费品	Automotive compound/ Consumer product 汽车改性, 消费品
Metocene MF650Y	1800	--	--	--	Very high flow/ High purity/ Low smoke emission/ Narrow molecular weight distribution 高流动性, 高纯度, 低烟雾发散, 窄分子量分布	Automotive/ Compounds/ Rigid Packaging/ Consumer Products 汽车, 硬质包装, 消费品	Automotive compound/ Consumer product 汽车改性, 消费品
Metocene MF650Z	2300	--	--	--	Very high flow/ High purity/ Low smoke emission/ Narrow molecular weight distribution 高流动性, 高纯度, 低烟雾发散, 窄分子量分布	Automotive/ Compounds/ Rigid Packaging/ Consumer Products 汽车, 硬质包装, 消费品	Automotive compound/ Consumer product 汽车改性, 消费品
Clyrell PP 无规共聚聚丙烯							
Clyrell RC5056	10	14000	5	--	High transparency/ High gloss/ High stiffness with balanced impact resistance 高透明, 高光泽, 刚韧平衡	Automotive/ Compounds/ Rigid Packaging/ Consumer Products 汽车, 硬质包装, 消费品	Automotive compound/ Consumer product 汽车改性, 消费品

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PE 聚乙烯

Grade	Density (ISO1183-1/A) (g/cm ³)	MFR (190°C/21.6kg.) (ISO1133) (g/10min)	MFR (190°C/2.16kg.) (ISO1133) (g/10min)	Tensile Modulus (ISO527-2) (MPa)	Features	Market	Typical customer applications
Lupolen 4261AG	0.945	6	--	900	Antioxidant/ High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 高ESCR, 高冲击性	Extrusion Blow Molding/ Thermoforming 挤出吹塑, 热成型	Fuel Tanks/ Non-fuel Reservoirs 油箱, 非燃料储罐
Lupolen 4261AG BD	0.945	6	--	900	Antioxidant/ Biodiesel Durability/ High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 生物柴油耐久性, 高ESCR, 高冲击性	Extrusion Blow Molding/ Thermoforming 挤出吹塑, 热成型	Fuel Tanks 油箱
Lupolen 4261A Q135	0.945	6	--	900	Antioxidant/ High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 高ESCR, 高冲击性	Extrusion Blow Molding/ Thermoforming 挤出吹塑, 热成型	Fuel Tanks 油箱
Lupolen 4261 A IM	0.940	15	--	800	Antioxidant/ Biodiesel Durability/ High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 生物柴油耐久性, 高ESCR, 高冲击性	Injection Molding 注塑	Fuel Tanks/ Non-fuel Reservoirs 油箱, 非燃料储罐
Lupolen 4261A IMBD	0.940	15	--	800	Antioxidant/ Biodiesel Durability/ High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 生物柴油耐久性, 高ESCR, 高冲击性	Injection Molding 注塑	Fuel Tanks/ Non-fuel Reservoirs 油箱, 非燃料储罐
Lupolen GX 5038	0.945	--	2	900	Good Processability/High ESCR (Environmental Stress Cracking Resistance)/High Flow/ Low Temperature Impact Resistance/Low Warpage 良好的加工性, 高ESCR, 高 流动性, 耐低温冲击, 低翘曲	Injection Molding 注塑	Fuel Tanks/ Non-fuel Reservoirs 油箱, 非燃料储罐
Hostalen GM9350C BLACK	0.995	3	--	1200	Electrically Conductive/ Good Chemical Resistance/High ESCR (Environmental Stress Cracking Resistance) 导电性, 良好的耐化学性, 高ESCR	Extrusion Blow Molding/ Injection Molding 挤出吹塑, 注塑	Fuel Tanks 油箱
Lupolen 4261A SW 63200	1.05	4	--	--	Antioxidant/High ESCR (Environmental Stress Cracking Resistance)/ High Impact Resistance 抗氧化, 高ESCR, 高冲击性	Extrusion Blow Molding/ Injection Molding/ Thermoforming 挤出吹塑, 注塑, 热成型	Fuel Tanks/ Non-fuel Reservoirs 油箱, 非燃料储罐
Lupolen 3621 M RM	0.9355	--	7.5	700	Good Processability/ High ESCR (Environmental Stress Cracking Resistance)/ Low Temperature Impact Resistance/ Low Warpage 良好的加工性, 高ESCR, 耐冲击, 低翘曲	Rotomolding 滚塑	Industrial Packaging/ Industrial Tanks 工业包装, 工业储罐
Lupolen 4021 K RM	0.9395	--	4.0	750	Good Processability/ High ESCR (Environmental Stress Cracking Resistance)/ Low Temperature Impact Resistance/ Low Warpage 良好的加工性, 高ESCR, 耐低温冲击, 低翘曲	Rotomolding 滚塑	Feating Oil Tanks/ Industrial Tanks 加热油箱, 工业储罐

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