

以品质立天下

STAND THE WORLD WITH QUALITY



双象光学材料

Double Elephant Optical Material

苏州工厂地址:江苏省张家港保税区东海路18号

Add(SZ):NO.18,Donghai Road, Free Trade Zone,Zhangjiagang,Jiangsu

重庆工厂地址:重庆市长寿区晏家街道化北路20号

Add (CQ):NO.20, Huabei Road, Yanjia Street, Changshou District, Chongqing

DOUBLE ELEPHANT

产品介绍手册

PRODUCT BROCHURE

光学级聚甲基丙烯酸甲酯树脂 PMMA



双 象

双象光学材料

DOUBLE ELEPHANT OPTICAL MATERIAL



2012年

公司成立于2012年
Founded in 2012

30亿元

总投资30亿元
Total investment is
RMB 30 billion

20万吨

年产20万吨PMMA
Annual capacity
of 200,000 tons

企业简介 COMPANY PROFILE

苏州双象光学材料有限公司成立于2012年, 位于江苏省张家港保税区, 年产能8万吨光学级聚甲基丙烯酸甲酯树脂PMMA。

重庆双象光学材料有限公司成立于2021年, 位于重庆市长寿区, 年产30万吨光学级聚甲基丙烯酸甲酯树脂PMMA和苯乙烯-甲基丙烯酸甲酯树脂MS。

双象光学也提供高性能光学级PMMA, 产品广泛广泛应用于LCD导光板、LED照明器材、光导纤维、飞机座舱玻璃、防弹玻璃、汽车尾灯。

Suzhou Double Elephant Optical Material Co.,Ltd. is located in Zhangjiagang free trade zone, Jiangsu province in year of 2012 with annual production capacity of 80,000 tons. Chongqing Double Elephant Optical Material Co.,Ltd. is located in Changshou District, Chongqing in 2021 with annual production capacity of 300,000 tons of optical-grade PMMA/MS resins. Double Elephant also delivers high-performance optical PMMA resins, which are widely used in LCD light guiding plate, LED lighting equipment, optical fiber, aircraft cockpit glass, bulletproof glass and automotive tail lamps.

以品质立天下 STAND THE WORLD WITH QUALITY

SX-301

流动性好 易于注塑

Good fluidity and easy for injection molding.

适用于造型复杂、成型流动路径长的产品, 如工艺品、复杂形状的日用器具。

Suitable for complicated shape and long molding path, such as handicrafts, packaging boxes, home appliances.



SX-302

流动性中等 较好耐热性 易加工成型

Balanced fluidity, heat resistance, mechanical strength and light transmittance.

适用于注塑成型的餐具、工艺品以及共挤装饰板材料等。

Suitable for simple mold, overlayer of co-extrusion sheets&siding, such as magnifier, nameplate, signs, cup container

SX-304

流动性低, 具有良好注塑成型性能、

耐热性和机械强度, 优异的透光率。

Low fluidity, good injection molding property, heat resistance and mechanical strength, excellent light.

适用于照明灯具、汽车灯具、汽车仪表板、液晶显示导光板。

Suitable for lighting, automotive lighting, automotive dashboard, LCD light guide plate.





SX-304H

流动性低, 具有良好注塑成型性能、
耐热性和机械强度, 优异的透光率。
Base on SX-304, improve the fluidity.

适用于脱模成型要求高的产品, 如注
塑导光板, 透镜, 反射器等。

Suitable for injection molding lightguide plate,
lens, reflector, etc.



SX-KC-2

高抗冲, 良好的流动性, 高耐候性
High impact resistance, good fluidity,
high weather resistance

适用于汽车灯具、笔、显示面板, 注塑照明
面罩等。

Suitable for car lamps, pens, display panel ,
injection molding lighting masks, etc.

SX-306

具有更低流动性和更好的挤压成型性能。
Lower mobility and better extrusion molding
performance.

适用于薄壁、厚壁挤出照明导光板、扩散
板、液晶显示导光板。

Suitable for thin, thick wall extrusion lighting light
guide plate, diffusion plate, liquid crystal display
light guide plate.



SX-7S

用于注塑光学元件
For injection-molded optical and technical items

用于注塑成型的光学和技术项目。

For injection-molded optical and technical items.



SX-KC-1

高抗冲, 良好的流动性, 高耐候性
High impact resistance, good fluidity,
high weather resistance

适用于汽车灯具、笔、显示面板, 注塑照明
面罩等。

Suitable for car lamps, pens, display panel ,
injection molding lighting masks, etc.



SX-8S

流动性低, 具有良好注塑成型性能、耐热性
和机械强度, 优异的透光率。
Lower mobility and better injection molding
performance.

适用于照明灯具、汽车灯具、汽车仪表板、
复杂形状的灯具。

Suitable for lighting lamps, automobile lamps,
automobile instrument panels and lamps with
complex shapes.

耐化学药品性 Chemical resistance

适用药品 Chemicals which can be used		不适用药品 Chemicals which must not be used	
无机盐水溶液 Inorganic salt aqueous solution	氯化钠 Sodium chloride	芳香族碳氢化合物 Aromatic hydrocarbons	苯、甲苯、二甲苯 Benzene, toluene, Xylene
稀酸 Dilute acid	30%盐酸 30% hydrochloric acid	酮 Ketone	丙酮、丁酮 Acetone, butanone
碱 Alkali	氢氧化钠 Sodium hydroxide	卤代碳氢化合物 Halogenated hydrocarbons	三氯甲烷、四氯化碳 Chloroform and carbon tetrachloride
低浓度酒精 Low concentration alcohol	10%甲醇 10% methanol	醚 Ether	乙醚 Ether
脂肪族碳氢化合物 Aliphatic hydrocarbons	乙烷 Ethane	酯 Ester	乙酸乙酯 Ethyl acetate
油脂类 Oil class	汽油、橄榄油 Gasoline, olive oil	高强酸 High acid	35%盐酸、70%硫酸 35% hydrochloric acid 70% sulfuric acid

挤压成型条件 Extrusion conditions

级别		SX-304	SX-306	SX-8S
螺杆L/D Screw L/D		25-35	25-35	25-35
料筒温度 Cylinder temperature	料斗 Hopper	200-230℃	200-230℃	210-240℃
	中部 In the middle	220-240℃	220-240℃	220-260℃
	模具位置 Die position	220-240℃	220-240℃	220-260℃
模头温度 The die temperature		220-240℃	220-240℃	220-260℃



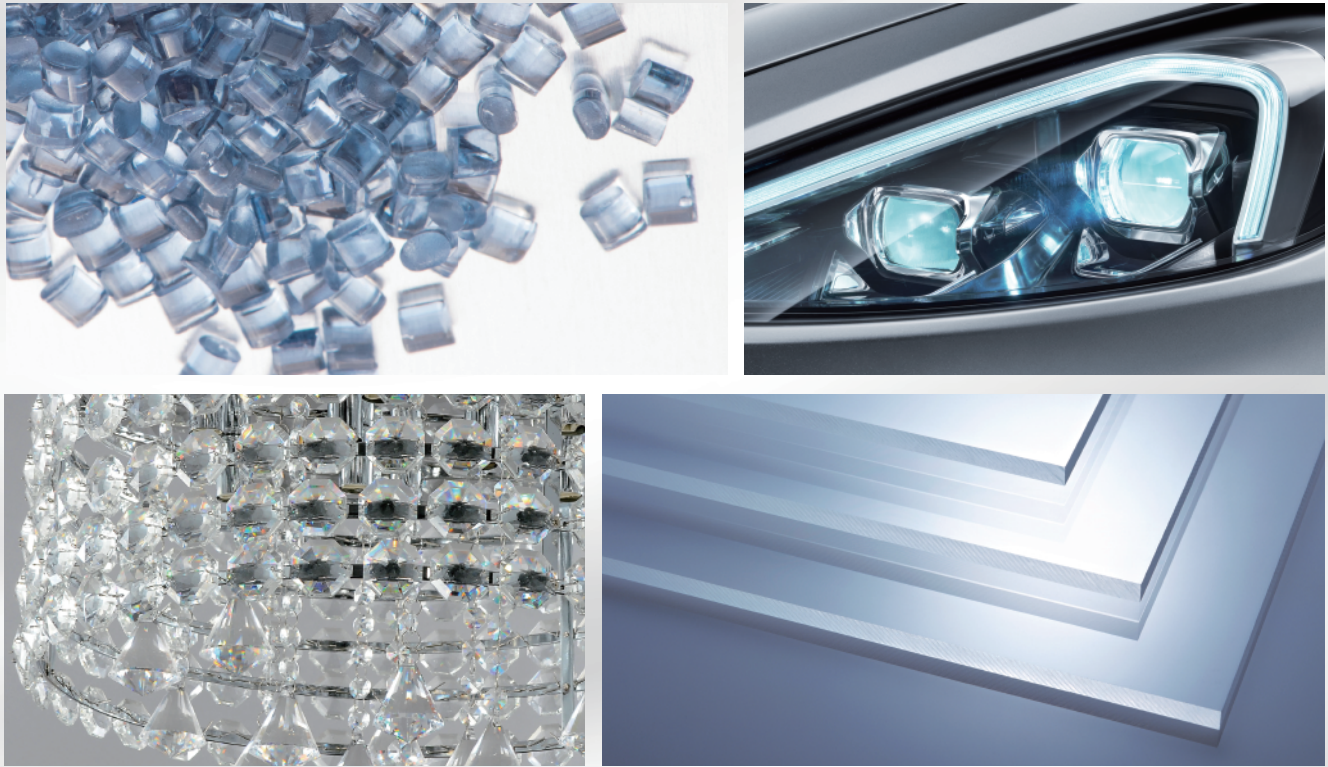
以上条件仅供参考, 具体设定以实际状况为准。
The above conditions are for reference only, specific set will be subject to the actual situation.

注塑成型条件 Injection molding conditions

级别 Grade	SX-301	SX-302	SX-304/SX-306 /SX-304H	
预干条件 Dry conditions in advance	70-80℃ 4-6hr	75-85℃ 4-6hr	80-90℃ 4-6hr	80-90℃ 4-6hr
料筒温度 Cylinder temperature	170-240℃	190-240℃	210-260℃	210-260℃
模具温度 Mold temperature	60-85℃			
注塑压力 Injection pressure	80-140MPa	80-140MPa	80-140MPa	80-140MPa

退火条件 Annealing conditions

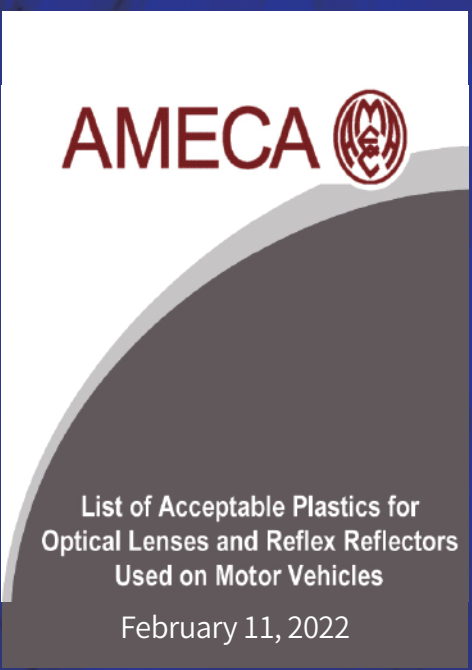
级别 Grade	SX-301	SX-302	SX-304 / SX-304H / SX-306	SX-8S
温度 The temperature	65-70℃	70-75℃	85-90℃	85-90℃
时间 Time	1-3hr	1-3hr	1-3hr	1-3hr



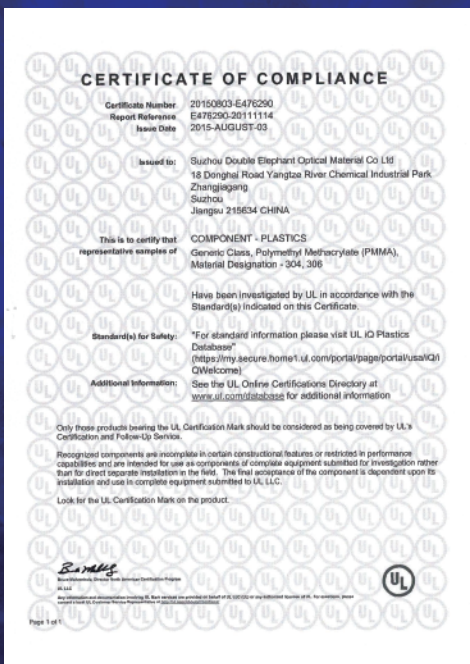
认证证书 APPLICABLE STANDARDS



FDA认证 FDA Certification



AMECA认证标准



UL认证 UL Certification



IATF 16949



实验室
LABORATORY



烘箱室
LAB-BAKING OVEN ROOM



熔指检测仪
Melt flow indexer



滴定仪
TITRATO



GC气相色谱仪和紫外分光光度计
GAS CHROMATOGRAPH & ULTRAVIOLET SPECTROPHOTOMETER



维卡/热变形温度测试机
HDT/VICAT APPARATUS



台式分光光度仪
HOTOSPECTROMETER COLOREYE



暗房
DARKROOM

Table of Performance Parameters of Each Model												
Items 项目	Test standards 测试标准	Unit 单位	Optical grades 光学级					Heat resistance 高耐温			High impact resistant 高抗冲	
			SX-301	SX-302	SX-304H	SX-305	SX-306	SX-304	SX-7S	SX-8S	SX-KC1	SX-KC2
Refractive index 折射率	ISO489	-	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Transmittance 透光率	ISO13468-1	%	93	93	93	93	93	93	93	93	90	90
Fuzzy Coefficient(Haze) 模糊系数(Haze)	ISO-14782	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	<2	<2
Coefficient of linear thermal expansion 线膨胀系数	ISO11359-2	1/°C	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}	7×10^{-5}
Vicat Softening temperature(VST) 维卡软化温度(VST)	ISO306	°C	89	89	100	105	105	107	106	108	99	99
Load heat distortion temperature 1.82Mpa 1.82MPa负荷热变形温度	ISO75-2	°C	84	84	94	98	98	100	96	98	92	92
230°C 3.8kg melt flow index 230°C3.8kg熔融流动系数	ISO1133	g/10min	13	9.5	2.7	1.5	1.6	2.2	6.2	3.1	4	3
Tensile modulus 抗拉模量	ISO527	Mpa	3200	3200	3200	3200	3300	3300	3200	3300	2600	2200
Tensile strength 屈服应力	ISO527	Mpa	67	70	70	70	74	76	73	77	65	55
Charpy impact strength Charpy 冲击强度	ISO179-1	KJ/m2	20	20	20	20	25	22	20	20	50	70
Charpy impact strength(with notch) Charpy冲击强度(带缺口)	ISO179-1	KJ/m2	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	3	4
Density 比重	ISO1183	-	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.16
Water absorption 吸水率	ISO62	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5
Flame retardant 阻燃性	UL94	-	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
Rockwell hardness 洛氏硬度	ISO178	Mpa	90	93	93	93	98	101	108	105	93	92