

PC 基础创新塑料(南沙) 143R-111 透明通用脱模

产品名称	PC 基础创新塑料(南沙) 143R-111 透明通用脱模
公司名称	京冀（广州）新材料有限公司
价格	28.80/千克
规格参数	PC:通用 143R-111:脱模 南沙:透明
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产品详情

聚碳酸酯的制法有酯交换法和光气直接法。

(1)酯交换法

原理与生产涤纶聚酯的酯交换法相似。双酚A与碳酸二苯酯熔融缩聚，进行酯交换，在高温减压条件下不断排除苯酚，提高反应程度和分子量。

酯交换法需用催化剂，分两个阶段进行：一阶段，温度180-200℃，压力270-400Pa，反应1-3h，转化率为80%-90%；第二阶段，290-300℃，130Pa以下，加深反应程度。起始碳酸二苯酯应过量，经酯交换反应，排出苯酚，由苯酚排出量来调节两基团数比，控制分子量。

苯酚沸点高，从高粘熔体中脱除并不容易。与涤纶聚酯相比，聚碳酸酯的熔体粘度要高得多，例如分子量3万，300℃时的粘度达600Pa·s，对反应设备的搅拌混合和传热有着更高的要求。因此，酯交换法聚碳酸酯的分子量受到了限制，多不超出3万。

(2)光气直接法

光气属于酰氯，活性高，可以与羟基化合物直接酯化。

光气法合成聚碳酸酯多采用界面缩聚技术。双酚A和氢氧化钠配成双酚钠水溶液作为水相，光气的有机溶液(如二氯甲烷)为另一相，以胺类(如四丁基溴化铵)作催化剂，在50℃下反应。反应主要在水相一侧，

反应器内的搅拌要保证有机相中的光气及时地扩散至界面，以供反应。

光气直接法比酯交换法经济，所得分子量也较高。

界面缩聚是不可逆反应，并不严格要求两基团数相等，一般光气稍过量，以弥补水解损失。可加少量单官能团苯酚进行端基封锁，控制分子量。聚碳酸酯用双酚A的纯度要求高，有特定的规格，不宜含有单酚和三酚，否则，得不到高分子量的聚碳酸酯，或产生交联。

一、原料的干燥

1、原料烘干:普通烘干箱温度110-130，时间2-4小时，机顶料斗烘干箱温度100-120，要求水分含量低于0.03%。

2、判断水含量是否合格:看空注射的料条情况，物料通过塑化后由喷嘴流出来的料条应是均匀无色、无银丝和无气泡的细条;否则则是烘干不彻底。

二、注射工艺

1、注塑机调整成型参数(视原料分子量高低调整):

料筒温度:前部250-310，中部240-280，后部230-250。

喷嘴温度:比后部低10。

模具温度:70-120。

注射压力:70-140MPa。

螺杆转速:30-120r/min。

成型周期:注射1-25s，冷却5-40s。

三、注意事项

1、注射温度视原料的分子量、制品的形状和尺寸、注塑机的类型而相应调整。

2、注射速度**采取多级注射，采用慢-快-慢的方法。

3、注射压力视制品的形状和尺寸而定，柱塞式注塑机一般为100-160MPa，螺杆式注塑机为70-140MPa。

4、成型周期视制品壁厚和注射量而定，一般情况下充模时间较短，保压时间较长，冷却时间以脱模时不引起制品变形为原则。

5、模具温度视制品的形状、厚薄而定，适当提高模具温度有利于脱模，提高产品质量。

6、制品后处理:对于形状复杂、带有金属嵌件、使用温度极低或很高的制品有必要进行后处理--消除或减少内应力。

方法:制品置于烘干箱后开始升温,由室温升至100-105时保温10-20min,继续升温至120-125时保温30-40min,然后缓慢冷却至60以下取出。

The polycarbonate used in synthetic industry is mainly synthesized by bisphenol A and phosgene. Its main chain contains benzene ring and tetra-substituted quaternary carbon atom, and its rigidity and heat resistance are increased, $T_M = 265-270\text{ }^\circ\text{C}$, $T_G = 149\text{ }^\circ\text{C}$, it can keep good mechanical properties in $15-130\text{ }^\circ\text{C}$, excellent impact resistance and transparency, dimensional stability, creep resistance, better properties than polyester polyester, is an important engineering plastics.

However, polycarbonate is easy to stress cracking, easy to hydrolyze when heated, and should be fully dried before processing. The preparation methods of polycarbonate include transesterification and phosgene direct method. (1) the principle of transesterification is similar to that of transesterification.

Bisphenol A is fused and polymerized with diphenyl carbonate, which is transesterified to continuously remove phenol at high temperature and pressure, thus increasing the degree of reaction and molecular weight. The transesterification process was carried out in two stages: the first stage, at $180-200\text{ }^\circ\text{C}$, Pressure 270-400 PA, reaction time 1-3 h, conversion of 80%-90%, and the second stage, at $290-300\text{ }^\circ\text{C}$, under 130 PA, deepening the reaction. The initial diphenyl carbonate should be excessive, and the phenol should be Transesterification out. The ratio of the number of the two groups should be adjusted by the amount of phenol excreted, and the molecular weight should be controlled. Phenol has a high boiling point and is not easily removed from high viscosity melts.

Compared with polyester polyester, polycarbonate melt viscosity is much higher, for example, molecular weight of 300,000, $300\text{ }^\circ\text{C}$ viscosity of 600 PA · s, the reaction equipment mixing and heat transfer have higher requirements. Therefore, the molecular weight of transesterification polycarbonate is limited, mostly not more than 30,000.

(2) phosgene direct method is acyl chloride with high activity and can be esterified directly with hydroxyl compounds. The polycarbonate synthesized by phosgene method usually adopts the technology of interfacial polycondensation.

Bisphenol A and sodium hydroxide were mixed into bisphenol sodium aqueous solution as the water phase, phosgene organic solution (such as dichloromethane) as the other phase, and amines (such as tetrabutylammonium bromide) as the catalyst to react at $50\text{ }^\circ\text{C}$. The reaction is mainly on the side of the water phase, and the agitation in the reactor ensures that phosgene in the organic phase diffuses to the interface in time for the reaction. \

The direct phosgene method is more economical than the transesterification method, and the obtained molecular weight is also higher. Interfacial polycondensation is an irreversible reaction, which does not strictly require the same number of two groups, usually phosgene slightly excessive to compensate for the loss of hydrolysis. A small amount of mono-functional group phenol can be added to block the end group and control the molecular weight. Bisphenol A used in polycarbonate requires high purity, has specific specifications, should not contain mono-phenol and triphenol, otherwise, do not get high molecular weight polycarbonate, or produce cross-linking.

1. Drying of raw materials 1. Drying of raw materials: General Oven Temperature 110-130, time 2-4 hours, machine top hopper oven temperature 100-120, moisture content less than 0.03% . 2, judge whether the water content is qualified: see empty injection strip, the material through plasticized by the nozzle flow out of the strip should be uniform colorless, no silver wire and no bubbles of thin strip; otherwise it is not thoroughly drying. 2, injection process 1, injection molding machine molding parameters (according to the molecular weight of raw materials adjustment) : Barrel Temperature: the front 250-310, the middle 240-280, the back 230-250. Nozzle temperature: 10. Die temperature: 70-120. Injection pressure: 70-140 mpa. Screw Speed: 30-120r/min. Molding Cycle: 1-25s injection, 5-40s cooling.Note 1, injection temperature depends on the molecular weight of raw materials, product shape and size, the type of injection molding machine and adjust accordingly. 2. The best injection speed is multi-stage injection, slow-fast-slow method. 3. The injection pressure depends on the shape and size of the product, the plunger injection molding machine is generally 100-160 mpa, the screw injection molding machine is 70-140 mpa. 4. The molding cycle depends on the thickness of the product and the amount of injection. In general, the filling time is short, the holding time is long, and the cooling time is based on the principle that the deformation of the product is not caused by the demoulding. 5, mold temperature depends on the shape of the product, thickness and appropriate increase of mold temperature is conducive to demoulding, improve product quality. 6, product post-treatment: for complex shape, with metal inserts, the use of very low or high temperature products necessary post-treatment-to eliminate or reduce the internal stress. Methods: the product was heated in the oven from room temperature to 100-105 for 10-20 min, then heated to 120-125 for 30-40 min, and then cooled slowly to 60 minutes.