

## **Lignin polyurethane**

1962 has begun with phenol and lignin reaction of isocyanates. These pioneering work laid the lignin in the plastics industry to use foundation.

GlasserWG other special emphasis on the application of lignin as engineering plastics material, he lignin reaction with maleic anhydride copolymer, ethylene oxide and then with 1,2,2 reaction copolymer polyol structure, and this product is further diisocyanate to synthesize a urethane good performance, can be used to manufacture adhesives, foams, paint.

After improvement of this patent, eliminating the first step of the reaction with maleic anhydride lignin, lignin directly with 1,2 - propylene oxide, to obtain propoxylated lignin. Lignin added after propoxylated hydroxyl groups, and increased softness of hydroxyl side chains, and then the reaction with a diisocyanate, to obtain a good performance of the same polyurethane.

The use of hydroxyl-terminated polybutadiene (HTPB), lignin diisocyanate polymer synthesized by copolymerization of lignin 2HTPB polyurethane. And measuring the degree of crosslinking, the light scattering coefficient, mechanical properties and other parameters. Found that, compared with HTPB polyurethane polymer 30% lignin content, the lignin 2HTPB cause the tensile strength of polyurethane copolymer significantly. However, better thermal stability than the former.