

We calculated the reaction rate of the reaction of *trans*-BFCD or *cis*-BFCD with phenol according to the concentration change of fluoride (F) using Ion Chromatography. We selected six time points to observe the reaction rates as following: 0.5 h, 1 h, 3 h, 5 h, 8 h and 10 h.

Time points (h)		0.5	1	3	5	8	10
Concentration of F (mol/L)	<i>trans</i> -BFCD	-	0.0049	0.243	0.416	0.471	0.489
	<i>cis</i> -BFCD	-	0.0056	0.232	0.403	0.467	0.482

-: not detected.

As shown in the above Table, we found that at the initial stage, the concentration of F can not be detected, then the concentration of F got increasingly large. At the time point of 1 h, we found that the concentration of F of *cis*-BFCD was slighter larger than *trans*-BFCD. The main reason is that at the initial stage, *cis*-BFCD had better solubility than *trans*-BFCD, so the reaction rate of *cis*-BFCD is slighter larger than *trans*-BFCD. While with the rising of reaction temperature and the by-product (water) was brought out, the solubility of the monomer can not affect the reaction rate largely. The main factor which affects the reaction rate is the electron density and steric hindrance. The monomer of *trans*-BFCD and *cis*-BFCD has similar electron density, also we find that *trans*-BFCD has slight small steric hindrance than *cis*-BFCD from the Four-circle single-crystal diffraction (Figure 3). So the monomer of *trans*-BFCD was found to have almost the same reaction rates with *cis*-BFCD.