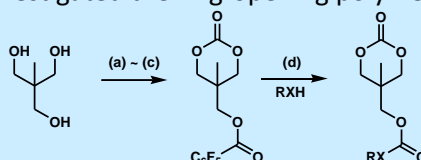


## Bis(pentafluorophenyl)carbonate(abb. ; PFPC)



Purity	97%
CAS Number	59483-84-0
Molecular Formula	C13F10O3
Molecular Weight	394.13

In the field of drug delivery systems using polymers, functional polycarbonates are attracting attention because they are expected to be biodegradable and interact with drugs. We proposed a simple synthesis method using PFPC, a side-chain functional cyclic carbonate monomer as a raw material. Also investigated the ring-opening polymerizability.

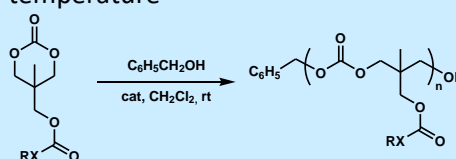


Synthesis of functional side-chain cyclic carbonates

No	RXH	Molar ratio	catalyst	Time	Yield
#1	C2H5OH	1.0eq	DMAP-Py	4hr	93%
#2	CH2=C(CH3)COOC2H4OH	1.0eq	DMAP-Py	2hr	64%
#3	CH2=CHC6H4-NH2	1.0eq	DMAP-Py	3hr	63%
#4	CH2=CHC6H4-NH2	1.3eq	CsF	2 日	81%

### Application

(a) Reaction method: PFPC, CsF catalyst, in THF, room temperature (b) After concentration, dissolve in CH2Cl2, wash with NaHCO3, dehydrate with MgSO4, concentrate (c) Recrystallize with ethyl acetate-hexane (2:3) (d) Side chain substitution method; CsF 0.3eq or DMAP-Pyridine(1:10) 0.03eq, THF, room temperature



Polymerization of functional side-chain cyclic carbonates

No	Monomer	Catalyst	Conversion	Mn	PDM
5	#2, 2.0M	(-)-spartine + 1,3-bHFIPB	95%	4830	1.65
6	#3, 0.5M	(-)-spartine + 1,3-bHFIPB	95%	4270	1.62

Polymerization conditions; C6H5CH2OH initiator (1 mol%) CH2Cl2 solvent, room temperature,

Catalyst (-)-spartine(0.1~0.05eq) + 1,3-bis(HexFluoroiProBnzne)(0.1~0.05eq),

*Polymer Chemistry 2014, 5, p327-329*

### Properties:

Appearance	Solid
Melting point, °C	48-50
Boiling point, °C	248-250

Capacity: 30kg/month