

Out-Gas from Melting Resin

Main outgas components of PPS at the injection process are H₂O and CO₂, and additional gas is coming out. The following table is organic gas captured at the following condition;

Testing material: FZ-1140 and FZ-2140 pellets

Melting condition: 15 min. at 320C

The captured gas from FZ-1140 that is cured polymer based compound contains mainly high boiling point components (Boiling Point; over 280C, segment No. 7-15). On the other hand, the captured gas from FZ-2140 which is linear polymer based compound contains mainly low boiling point components such as Xylene. Most of them are coming from PPS polymer.

Table Out-gas from melted PPS resin (320C/15min.)

No.	Gas components	Chemical name	Boiling point °C	FZ-1140	FZ-2140
1	<chem>H3C-c1ccc(C)cc1</chem>	Xylene	139-145	2.1	24.1
2	<chem>c1ccccc1O</chem>	Phenol	182	2.6	2.6
3	NMP	N-methyl-2-pyrrolidone	202	1.0	0.4
4	<chem>Nc1ccc(Cl)cc1</chem>	chloro aniline	232	1.9	—
5	<chem>CNc1ccc(Cl)cc1</chem>	methyl chloro aniline	>230	1.6	—
6	<chem>c1ccc(Oc2ccc(Cl)cc2)cc1</chem>		>230	3.6	0.4
7	<chem>c1ccc(Sc2ccc(Cl)cc2)cc1</chem>		>280	15.3	2.2
8	<chem>Clc1ccc(Oc2ccc(Cl)cc2)cc1</chem>		>280	2.5	—
9	<chem>Clc1ccc(Sc2ccc(Cl)cc2)cc1</chem>		>280	35.5	3.6
10	<chem>Nc1ccc(Cl)cc1</chem>		>280	11.9	5.4
11	<chem>Clc1ccc(Sc2ccc(NC)cc2)cc1</chem>		>280	1.1	—
12	<chem>Clc1ccc(Sc2ccc(S)cc2)cc1</chem>		>280	1.1	—
13	<chem>Nc1ccc(Sc2ccc(Cl)cc2)cc1</chem>		>280	2.9	3.0
14	<chem>Clc1ccc(Sc2ccc(Sc3ccc(Cl)cc3)cc2)cc1</chem>		>280	3.7	2.2
15	<chem>c1ccc(Sc2ccc(Sc3ccc(Sc4ccc(S)cc4)cc3)cc2)cc1</chem>		>280	13.2	1.9

※Above value is correlation data based on FZ1140 data as 100%.



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