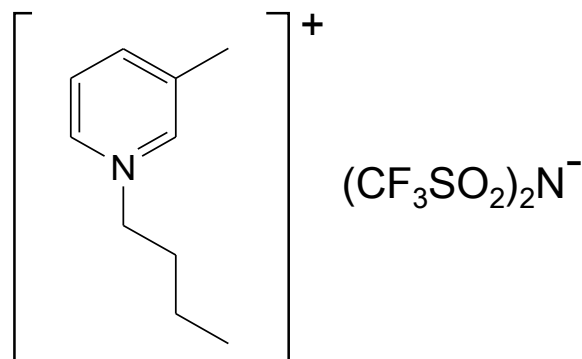


Ionic liquid CIL-312 for anti-static coating ink

Contents

1. Physical properties of CIL-312
2. Application of CIL-312
3. Anti static coating
4. Properties of the anti static coating
5. Miscibility of CILs w/ various solvents



Chemical Name : 1-Butyl-3-Methylpyridinium-bis(Trifluoromethanesulfonyl)imide

Chemical Formula of CIL-312 : $\text{C}_{12}\text{H}_{16}\text{F}_6\text{NO}_4\text{S}_2$

CAS No. : 344790-86-9

Molecular weight : 430.39 g/mol

Flash point: 364°C

Decomposition temperature: 267°C

Refractive index: 1.44~1.45@25°C

Density: 1.4

Viscosity: 60~70Pa·s : @25°C

⇔ CIL-312

Hydrophobic, good miscibility w/ acrylic, poly(ester) resin
--- good for anti static coating inks

⇔ CIL-313

Hydrophilic

--- good for water based coating ink

Higher thermal decomposition temperature

--- good for polymer composite

Coating condition		
Ink composition	CIL-312	0.5wt%
	Thermoplastic polyester resin	9.5wt%
	MEK	40wt%
	toluene	40wt%
	cyclohexanone	10wt%
Non volatile	10wt%	
Base film	PET	
Coating method	Bar coating → 100°C/1min dry	
Film thickness	1.0μm	

	Coating properties	Base film PET only
Surface resistance	$3 \times 10^9 \Omega$	–
Total light transmittance	90.3%	90.0%
Haze value	1.9%	1.9%

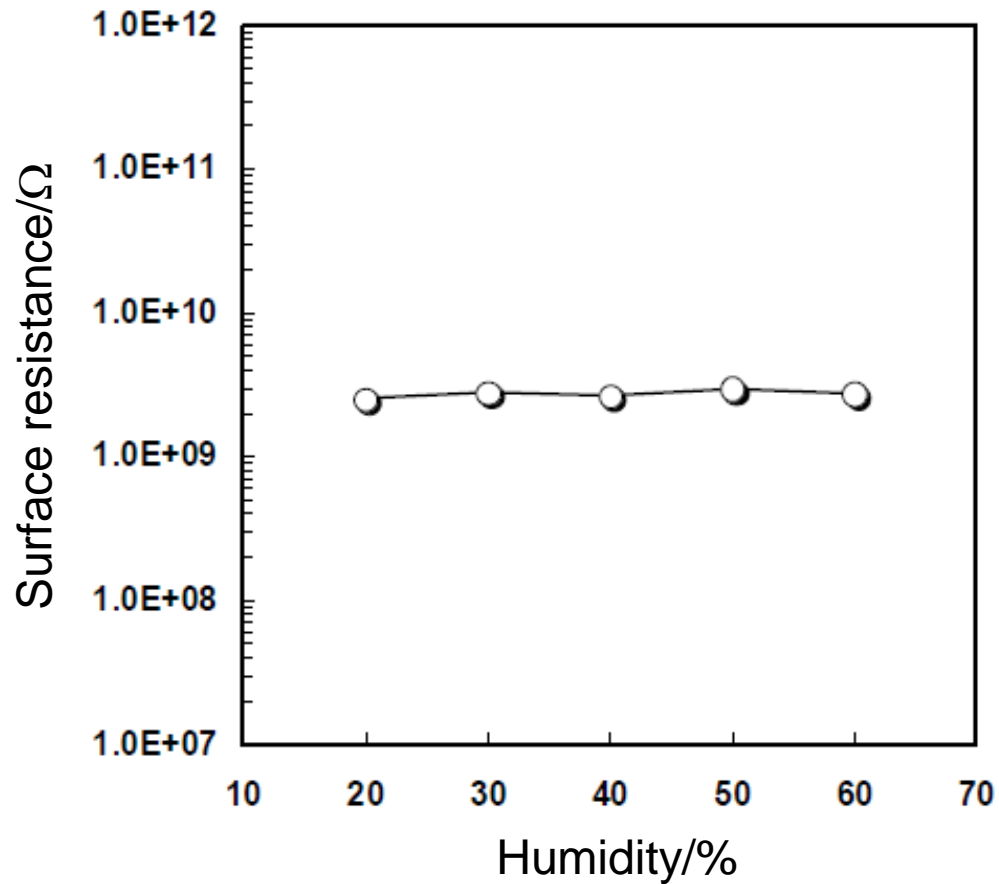


Fig. Humidity dependence of surface resistance of the anti-static coating made on PET film

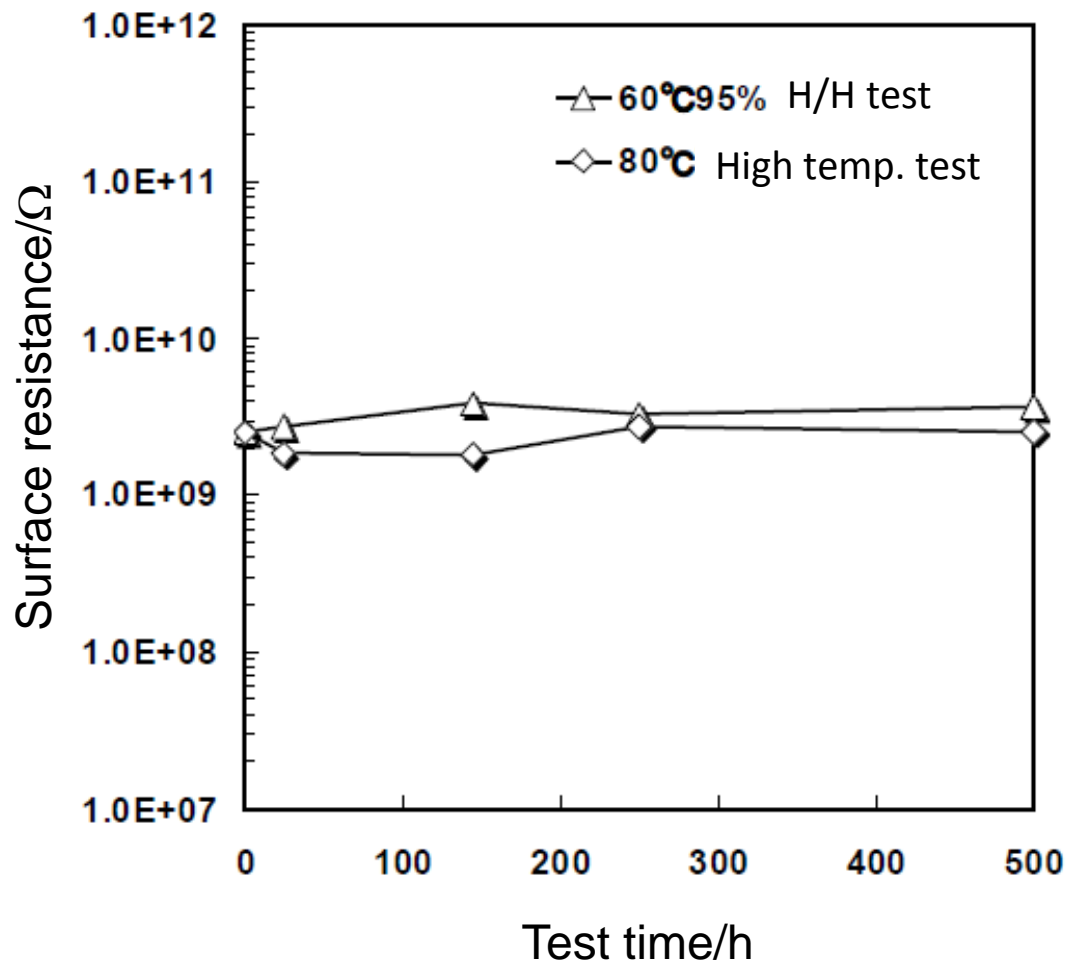


Fig. High humidity/High temperature test

solvent	CIL-312	CIL-313
water	×	○
MeOH	○	○
EtOH	○	○
IPA	○	○
acetone	○	○
MEK	○	○
NMP	○	×
acetonitrile	○	○
EtOAc	○	○
BuOAc	○	△
propylene carbonate	○	○
<i>m</i> -xylene	×	×
toluene	×	×
hexane	×	×

* CILs : solvent = 1: 1
by volume

Carlit Singapore Pte., Ltd.

152 Beach Road #26-03 Gateway East Singapore 189721

Tel: +65-6294-6994

Fax: +65-6294-8513

E-mail: csg@carlit.com.sg

URL: <http://csg.com.sg>