防湿絶縁材料 TUFFY

～TF-4200EB-452～

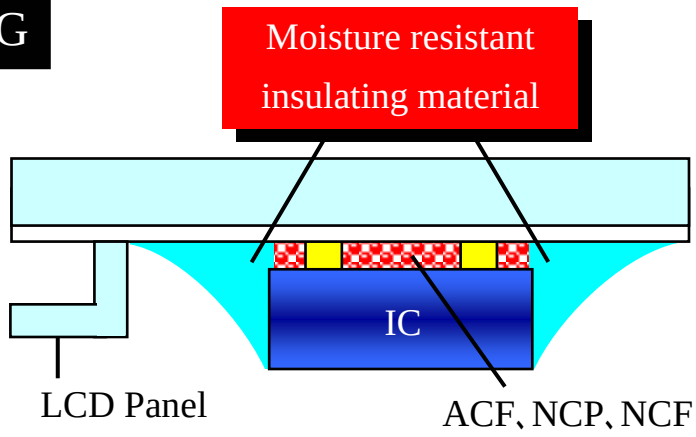
Moisture Resistant Insulating Material for TUFFY; TF-4200EB-452

Display Materials R&D Dept.
Material Polymer Science Sector
Advanced Performance Materials Operational Headquarters
Hitachi Chemical Co., Ltd.

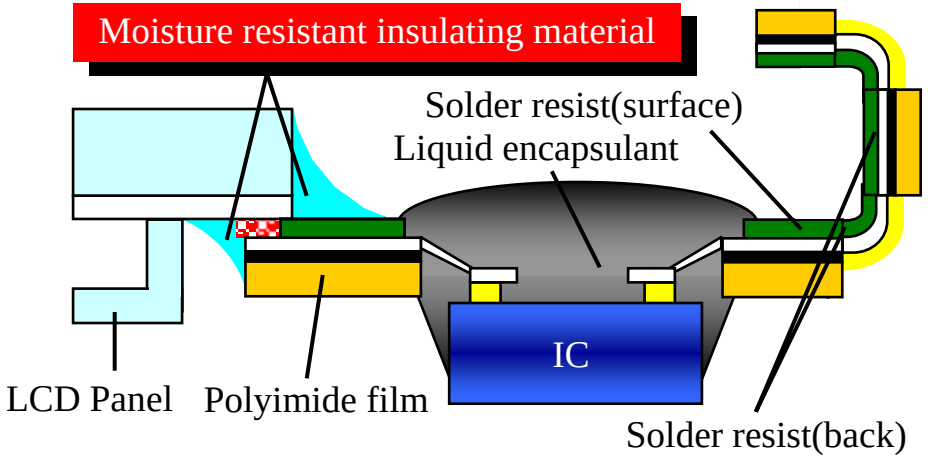
用途：FPDのACF接続電極部の防湿絶縁用ｺｰﾃｨﾝｸﾞ材

USE：Moisture Resistant Insulating Material for over coating around ACF connection part of FPD

COG



TCP



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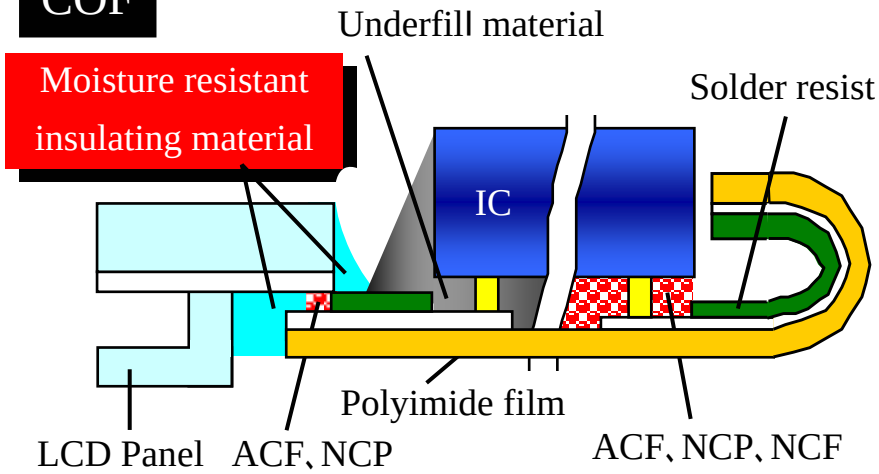
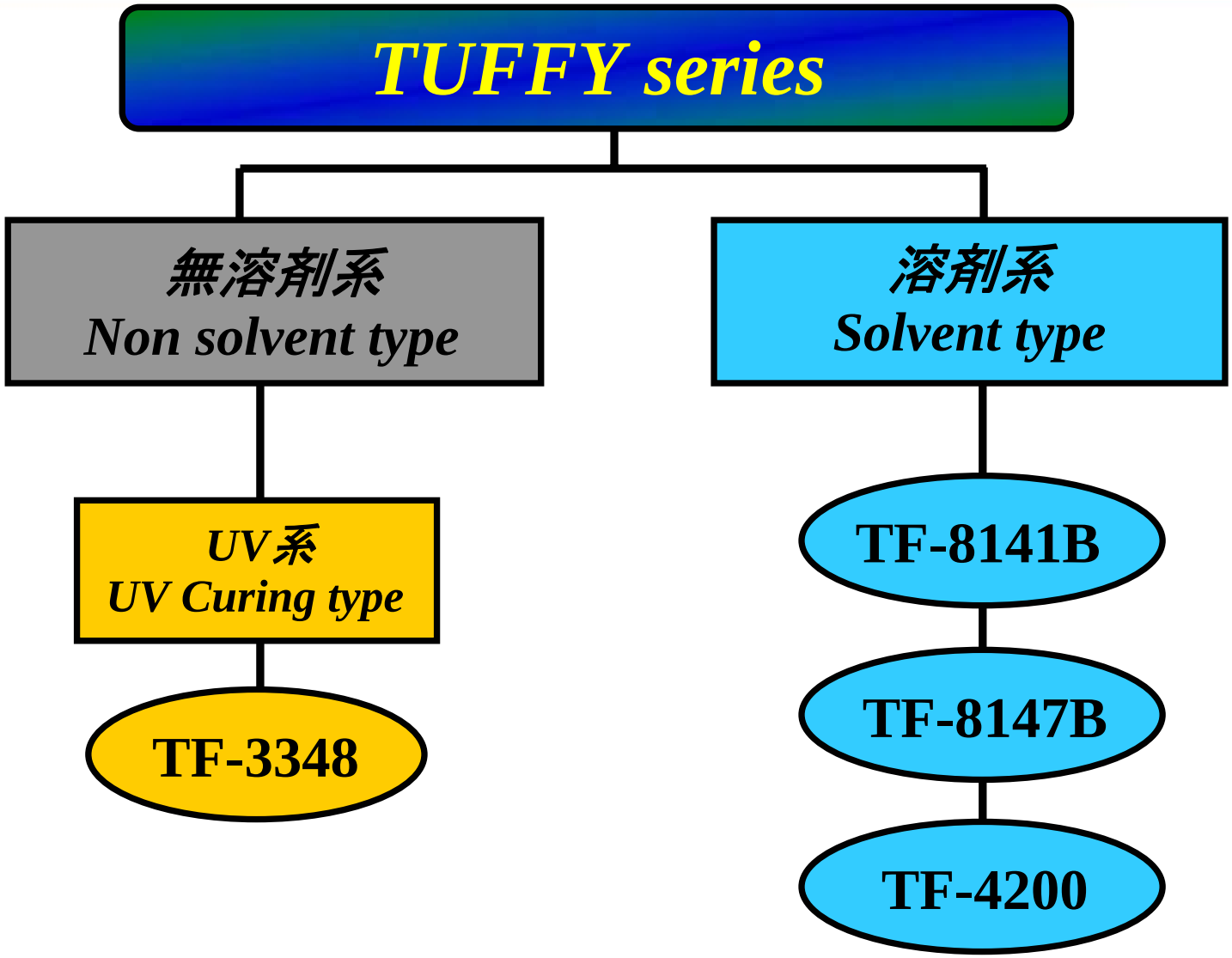


【Our company products used for FPC】

- ・Solder resist(Liquid)
- ・Moisture resistant insulating material
- ・Liquid encapsulant ・Under fill material
- ・ACF ・NCF ・NCP
- ・Solder resist(Film)

2. TUFFY系統図 Map of TUFFY series



2-1. 溶剤系 Map of solvent type TUFFY series

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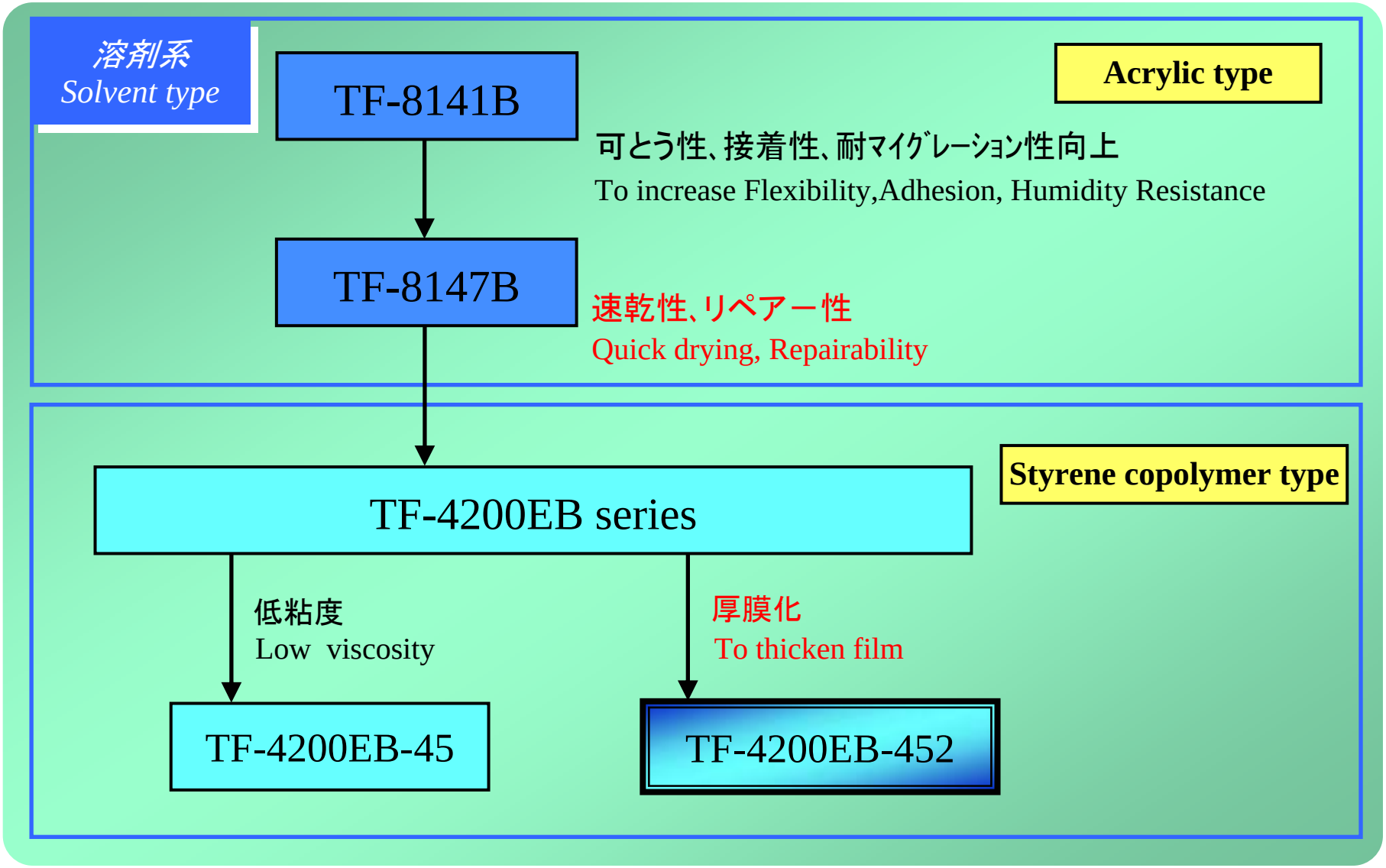

3. 特性 Properties

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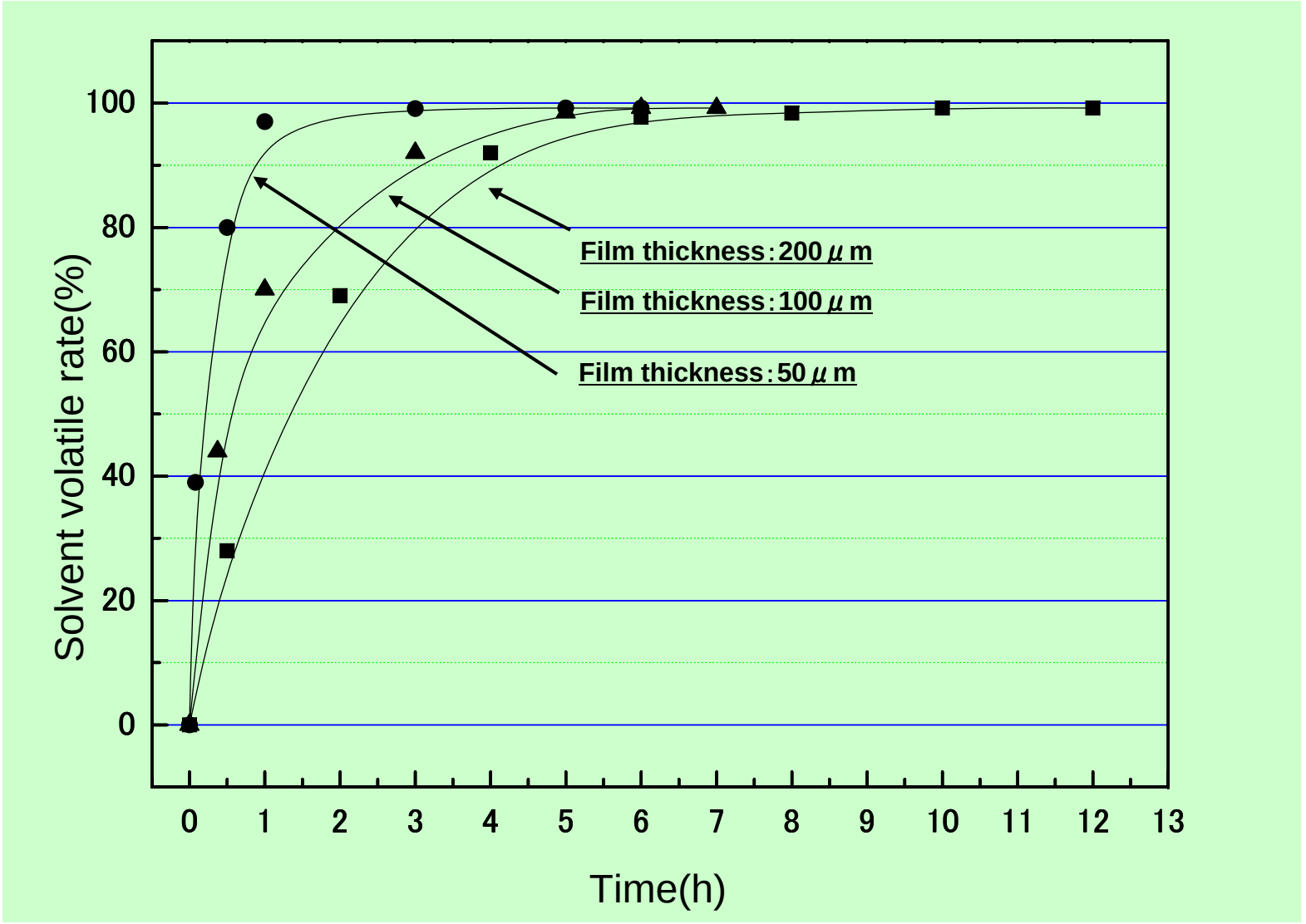
	Item	Con.,Unit	TF-4200EB-452
液状特性 Fluid properties	硬化形態 Drying(Curing) type	–	Solvent volatilizing type
	ベース樹脂 Base resin	–	Styrene type copolymer
	外観 Appearance	Eye check	Blue
	粘度 Viscosity	25℃,Pa･s	1.2
	不揮発分 Solid content	%	30
	指触乾燥時間 Drying time	25℃,min	5
	推奨硬化条件 Curing condition	–	25℃/6h
硬化物特性 Cured film properties	弾性率 Normal modulus	25℃,MPa	20
	体積抵抗率 Volume resistivity	23℃,Ω･m	3×10^{13}
	透湿度 Water vapour transmission rate	g/m^2,24h	50
	不純物濃度 Ionic impurities concentration	Cl^-,ppm	1.2
		Na^+,ppm	2.1
	補強性 Reinforcement (Peeling strength)	N/m	1060
	リペア性 Repairability	–	Possible

The values given above represent typical measurements, not guaranteed ones.

4. 乾燥時間 Drying time



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5. 透湿性　Water vapour transmission

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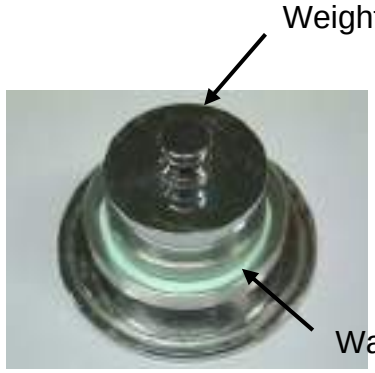
Testing Method for the Water Vapour Transmission Rate (Dish Method)

①Put the silica gel into the cup.

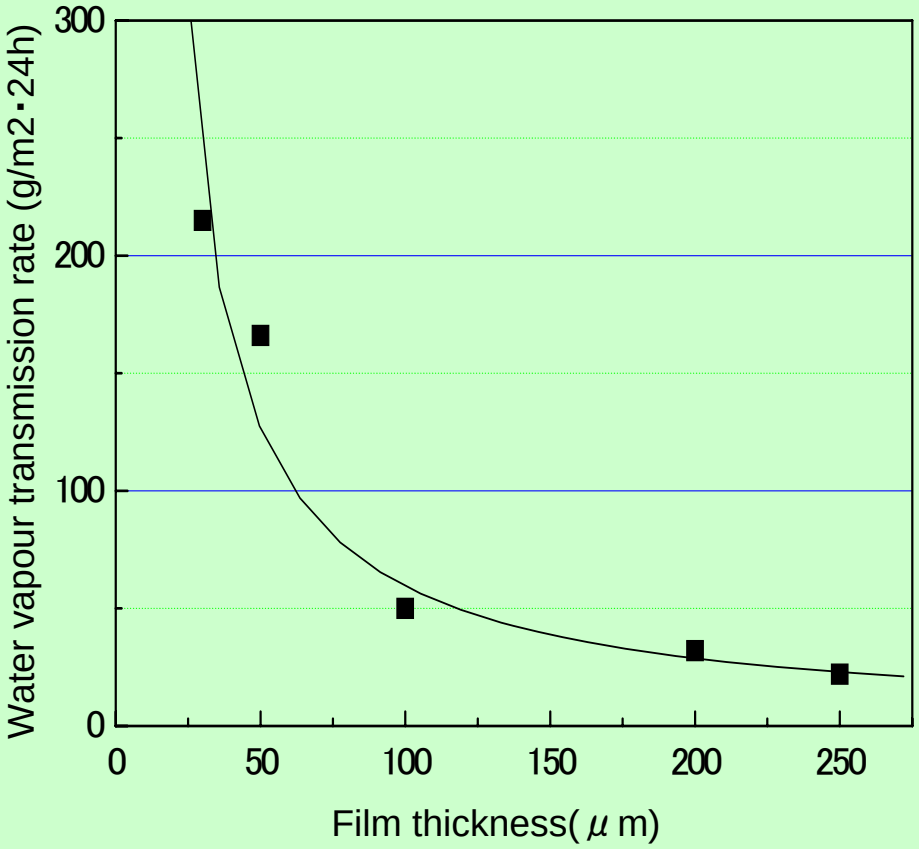
②Set the test piece on the cup.



③Put the weight on it, and then Seal up by coating wax between the test piece and the cup.

④Remove the weight on it, and then put it in an atmosphere at 40℃/90%RH/24h.
After that, measure the weight of the silica gel and determine the water vapour transmission.

【JIS Z 0208】



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6. 補強性 Reinforcement

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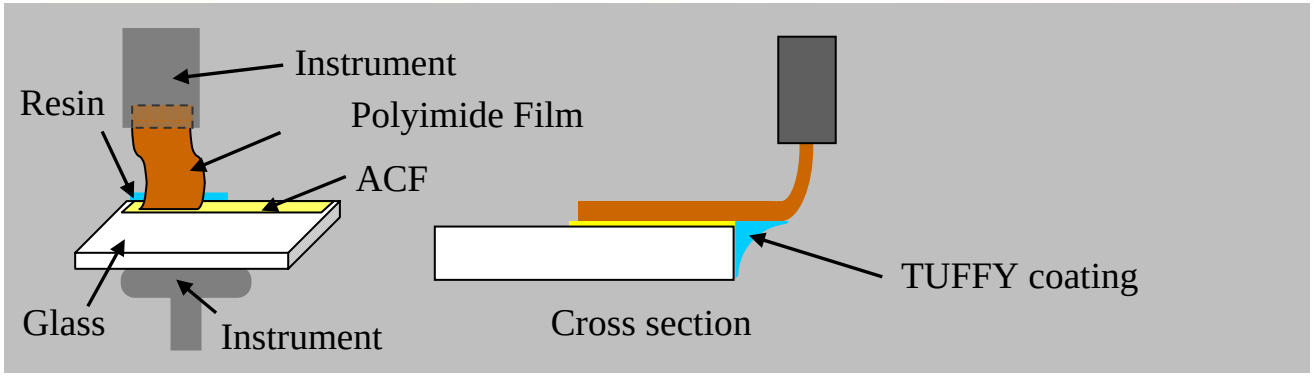
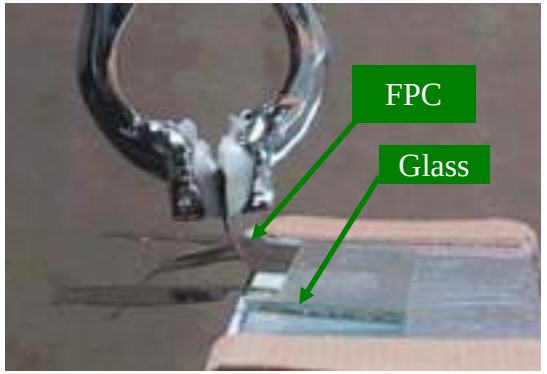




【Experiment】

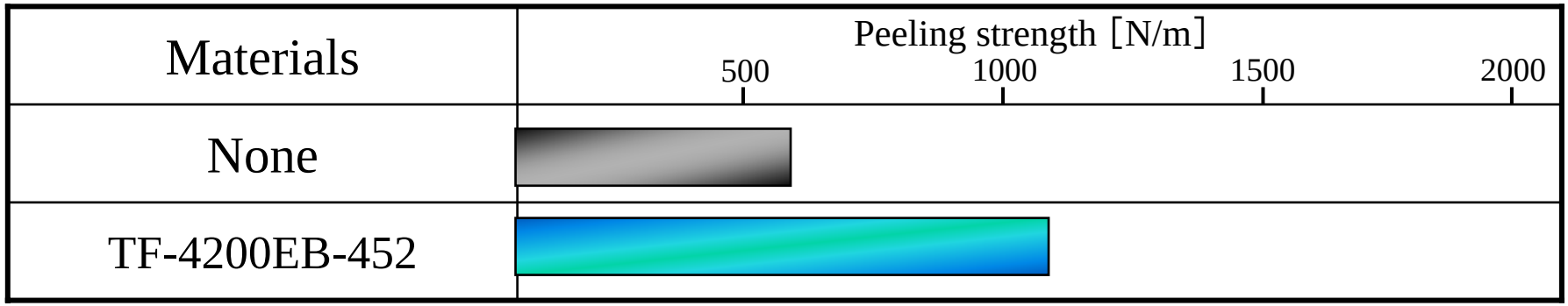
①Resin ：TF-4200EB-452 (Dry at RT/24h)

②ACF ：AC-7202Y-16(Made by Hitachi Chemical)

Main bonding condition : 180℃ 3MPa 15sec

③Test speed ：50mm/min

④Chart speed ：200mm/min



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7. 耐マイグレーション性 Resistance to migration
ITO電極での耐マイグレーション性 (with ITO electrode)

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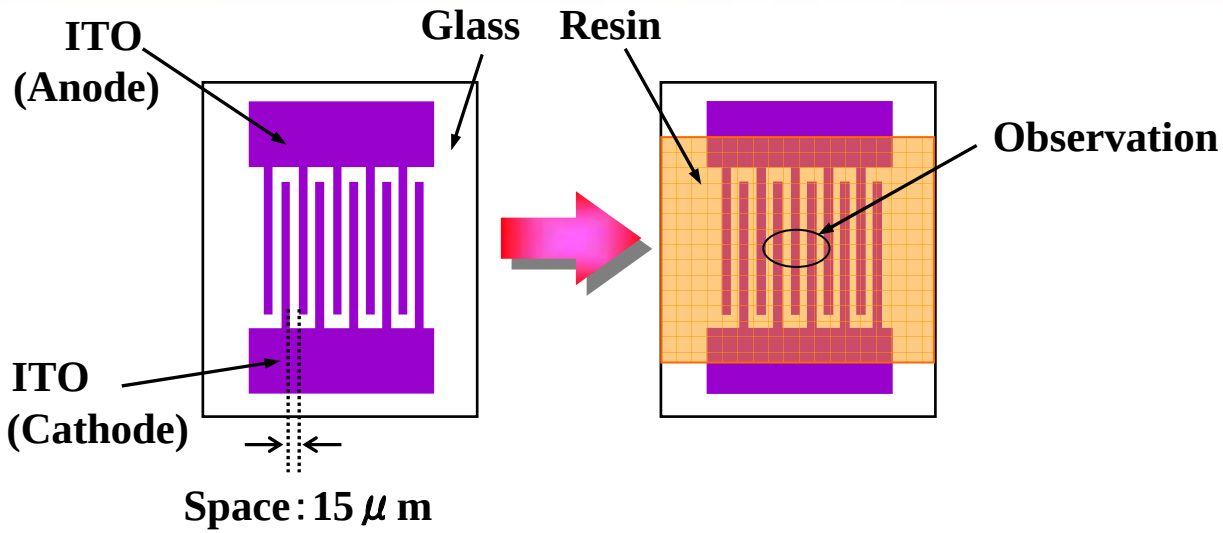

After
60℃/90%RH/5V/500hr

Item		TF-4200EB-452		
Film thickness(μm)		30	50	100
Time (h)	500			
		No corrosion	No corrosion	No corrosion

The values given above represent typical measurements, not guaranteed ones.