品质承认	、书 Quality S	pecification
客户 Customer:		
供应商:广东东溢新材		× -X
Supplier: GUANGDONG DOM	NGYI HIGH-TECH MATERIAL SCIE	ENCE&TECHNOLOGY CO., LTD.
产品类型 Product type:	高性能丙烯酸纯胶膜	
High	n Performance Acrylic	Adhesive Bonding Sheet
材料品名 Material Nam	ne:PH高性能纯胶 PH Hi	gh Performance Bonding Shee
编号NO:B061 版	本 Ver: B1	
制作日期 Date of pro	duction:2023/11/30	
客户确认 Customer:	Tree of the second seco	Alt .
采购 Purchase:	品质 Quality:	工程 Engineering:
职务 Position:	职务 Position:	职务 Position:
备注 Note:(盖章 Seal	)	
广东东溢新材料科技有 GUANGDONG DONGYI H		CO., LTD.
业务 Marketing:赵礼勾	全 品质 Quality:陈伟,	志 技术 Technical:侯松斌
职务 Position: 总监	职务 Position: 经3	理 职务 Position: 经理
备注 Note:(盖章 Seal	)	X
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广东东溢新材料科技有限公司 GUANGDONG DONGYLHIGH-TECH MATERIAL SCIENCE&TECHNOLOGY CO., LTD.

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产品	名称 Product	Name			
序号	东溢型号	胶厚(um)	涂布基材类型	应用范围	包装规格
No	Product Model	AD Thickness	Coated Film Type	Application	Packing Spec.
1	PH15-250K (F)	15	Release film	钢片 SUS	250mm*100m
2	PH20-250K(F)	20	Release film	钢片 SUS	250mm*100m
3	PH20-500K(F)	20	Release film	钢片 SUS	500mm*100m
4	PH25-250K (F)	25	Release film	钢片 SUS	250mm*100m
-5	PH25-500K (F)	25	Release film	钢片 SUS	500mm*100m
6	PH25-250K (S)	25	Release film	钢片 SUS	250mm*100m
7	PH25-500K (S)	25	Release film	钢片 SUS	500mm*100m
8	PH25-250A1 (A)	25	Release film	PI/FR4	250mm*200m
9	PH25-500A1 (A)	25	Release film	PI/FR4	500mm*100m
10	PH35-250K (F)	35	Release film	钢片 SUS	250mm*100m
11	PH35-500K(F)	35	Release film	钢片 SUS	500mm*100m
12	PH35-250A1 (A)	35	Release film	P1/FR4	250mm*200m
13	PH35-500A1 (A)	35	Release film	P1/FR4	500mm*100m
14	PH40-250K(F)	40	Release film	钢片 SUS	250mm*100m
15	PH40-500K (F)	40	Release film	钢片 SUS	500mm*100m
16	PH40-250A1 (A)	35	Release film	PI/FR4	250mm*200m
17	PH50-250K (F)	50	Release film	钢片 SUS	250mm*100m
18	PH50-500K(F)	50	Release film	钢片 SUS	500mm*100m
19	PH50-250A1 (A)	50	Release film	PI/FR4	250mm*200m
20	PH50-500A1 (A)	50	Release film	PI/FR4	500mm*100m

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	●物性指标(	General	Properties			
序号 ltem	性能项目 Test Item	单位 Unit	测试条件 Test Condition		标准 Standard	测试方法 Test Method
1	厚度 Thickness	um	A	<2 ≥2		东溢规范 Dongyi Method
2	幅宽 Width	mm	A		标准 Standard +2/-0	东溢规范 Dongyi Method
3	剥离强度 Peel Strength	kfg/cm	A 85°C /85%RH/96h		<ul><li>≥1.0</li><li>≥0.8</li></ul>	IPC-TM-650-2. 4.9
4	耐化学品性 Chemical Resistance	%	HCI&NaOH 2moI/L	5	≦20	IPC-TM-650-2. 3. 2
5	焊锡耐热性 Solder Resistance		288°C/10S		无分层、起泡 mination sparkling	IPC-TM-650-2 . 4. 13
6	溢胶量 Resin Flow	m	单面有胶电 解铜的 PI+ 单面有胶电 解铜的 PI (3L FCCL PI)	<25um	$\begin{array}{rrrr} \text{K/S} &: 0.10 \pm 0.02 \text{mm} \\ \text{K/F:} & 0.15 \pm 0.05 \text{mm} \\ \text{A1/A:} & 0.12 \pm 0.04 \text{mm} \\ \hline \text{K/F:} & 0.2 \pm 0.05 \end{array}$	IPC-TM-650 2.3.17.1

注 Note :

1.A 代表常态"A" Means normal。

2. 在与胶膜贴合前,先用丙酮擦干净贴合面,并静置待溶剂挥发干净。

Cleaning surface with acetone wipe is recommended before lamination. Please pay attention that the solvent evaporate after cleaning.

#### 3.严禁使用有硅保护膜贴合纯胶,如果贴合有硅保护膜会导致剥离强度严重衰减。

It is strictly prohibited to use a silicon-based protective film to attach the bonding sheet, and if a silicon-based protective film is bonded, the peel strength will be severely attenuated.

4. 上述剥离强度标准不包括贴合镜面金属材料。

The above peeling strength standards do not apply to mirror-surface metal materials.

## 外观管控 Appearance requirement

异常类型 Exception classes	异常大小 Abnormal size	允许个数 Allowed value (250*400mm)
杂质 Impurity	0. 1~0. 5m	m ≦8个dots
垫伤 Pad injury		$≦1$ $\uparrow$ dots
气泡 Bubble	≧1mm 不	允许Not allowed

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注 Note: 产品边缘 3mm 以内异常, 不作管控要求。Any defect within 3 mm of the outside edges of the sheet or roll is disregarded.

### ● 储存 Storage

项目	K (F) / K (S)	A1 (A)
储存条件	温度 2~10℃、湿度≤70% RH、储 存 3 个月	温度≤30℃、湿度≤70% RH、储存6个月
背胶后储存条件	温度 2~10℃、湿度≤70% RH、储 存1个月	温度≤30℃、湿度≤70% RH、储存1个月

1、a.K(F)/K(S):冷藏,温度 2~10℃、湿度≤70% RH、真空包装,无腐蚀性气体的 室内,按照 PH 纯胶的制造日期后保存 3 个月。

K(F)/K(S): If stored at below room temperature: Temperature 2 ~ 10°C, Humidity 40~ 70% RH, airproof vacuumed packaging, no corrosive gas chamber for 3 months since the date of manufacture.

b.A1(A): 温度 $\leq$ 30°C、湿度 $\leq$ 70% RH、真空包装,无腐蚀性气体的室内,按照 制造日期后保存 6 个月 If stored at room temperature: Temperature $\leq$ 30°C, Humidity $\leq$ 70% RH, airproof vacuumed packaging, no corrosive gas chamber for 6 months since the date of manufacture;

2、分切后, a. K(F)/K(S)储存条件同上第1(a),保质期为: 冷藏 3 个月,加干燥剂 密封储存; After slicing, K(F)/K(S) the storage conditions should be the same as described in above point 1(a). The product shelf-life of PH bonding sheet refrigerated of 3 months, and the product is sealed with desiccant for storage; b. A1(A)储存条件同上第1(b), 保质期为:常温 6 个月,加干燥剂密封储存。A1(A)the storage conditions should be the same as described in above point 1(b). The product shelf-life of PH bonding sheet under normal temperature is 6 months, and the product is sealed with desiccant for storage

3、产品背胶转移后: After lamination of the bonding sheet on the product a.K(F)/K(S):温度 2~10℃、湿度≤70% RH,密封冷藏、储存周期 1 个月。K(F)/K(S): the storage period is 1 month at: temperature2~10°C, humidity4≤70% RH. b. A1(A):温度≤30℃、湿度≤70% RH 储存周期为一个月 A1(A):the storage period is 1 month at: temperature <30°C, humidity <70% RH. (储存周期是指产品从开箱背胶到压合固化前整个过程。Storage cycle refers to the period of time from the lamination of the bonding sheet on the product

prior to the pre-curing process of the product.)

## ● 包装 Packing

1. 每一卷成品用纸管卷取。每批出货的每个规格提供一份品质检验报告 Each

此规格书为东溢公司机密文件且涉及专利保护事宜,未经东溢公司书面签章确认同意严禁转载转发,此规格书中所有条款内容最终解释权归东溢公司所有, 特此声明! Hereby declared that this technical datasheet is a confidential document of Dongyi and involves patent protection matters, reproduction and forwarding without the written permission of Dongyi Company is strictly prohibited, the final interpretation of all the terms and conditions in this technical datasheet belongs to Dongyi.



月份标签 Month label:

$\boldsymbol{\boldsymbol{S}}$	一月	二月	三月	四月	五月	六月	七月	八月	九月	十月	十一月	十二月
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Qct.	Nov.	Dec.
		$\lfloor 2 \rfloor$	(3)	4	5	( <u>6</u> )	7)		9	(10)	(11)	

●装运 Shipment

每批提供一份质量检验报告,如下表(报告模版仅供参考):Each batch of product will be provided with a quality inspection report as following(Report format

	東溢			
4	DONGYI		新材料科技 IIGH-TECH MATERIAL SCIENCE&TEC	
	for reference only			
	i i i i i i i i i i i i i i i i i i i			
			材料科技有限公司 CH MATERIAL SCIENCE ATECHNOLOGY CO., L	тр.
		纯胶膜	其出厂检验报告	编号: JL-Q-02-004-15
	日期 (Date):		客户: (customer):	
	品名(Materia	l spec)		
	批号 (Lot	No. )		14
	保存期限(She	lf life)		$\sim$
	检验项目 (Test item)	检验方法 (Test method)	品质标准 (Quality Spec)	测试结果 (Test Result)
	Adhesive厚度 (Adhesive thickness)	东溢规范 (Unit:μm)	±5	
	幅宽 (Width)	东溢规范 (Unit:mm)	250 +2/-0	
	剥离强度 (Peel Strength)	IPC-TM-650 2.4.9 (Unit:kgf/cm)	≧1.0	
	转移性 (Transitivity)	东溢规范	在120℃−150℃下,通过塑封机转 移,胶膜应能转移于覆铜箔聚酰亚 胺薄膜面上,揭掉载体纸(膜)而	
	· 여 / 티 조+ th .).止		不破坏胶膜。	X'X
	焊锡耐热性 (Solder Float Resistance) 288℃/10sec	IPC-TM-650 2.4.13	无分层起泡 (No Blistering or Delamination )	Y Za
X	1	产品判定结果		X
	备注: 1.以上测试数据仅供参考。			
	2.E胶膜适用于FPC线路多期			
	3. 上述产品不含[RoHS]所; 4 以上焊锡耐热性测试所目		in烘烤处理后,再与胶膜贴合进行测	Mit .
	5. 如产品被放置在低温下值	诸存环境(尤为冬季),	建议客户在使用前将产品静置回暖	直至产品温度回升至室温
			特性,同时也应避免放置在阳光直接 b界面干燥及不残留溶剂(如酸碱、氵	
c			《介面十條及不残留溶剂(如酸碱、) 是建议叠层张数不超过20PNL,以避免	
	固化效果。 地址:广东省中山市南区昌盛	Ă路22号 电话∶0760	-23338784 传真:0760-23336558	8 邮编: 528455
	审核(APPROVED BY):		检验员(CHECKED BY):	- V
N's				
Y	37 ×			

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注 Note: 以上为建议压合参数,鉴于各厂家机台及生产工艺都有差异,故如上作业参数仅供参考。 The above pressing parameters are for reference only. Due to difference in pressing facilities and production process, the most appropriate pressing parameters should be determined by practical examinations.

### ● 使用注意事项 Matters needing attention

 如产品被放置在低于 10℃以下储存环境,建议客户在使用前将产品密封静置 4
 小时以上回温直至产品温度回升至室温温度(20--30℃)后方才使用,以确保最 佳产品使用特性,同时也应避免放置在阳光直接照射及高温环境下。

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If the product is placed under the temperature below  $10^{\circ}$ Cfor storage, it is recommended that customers keep the product for more than 4 hours before use and warm it up until the product temperature rises to room temperature( $20-30^{\circ}$ C) as a way to ensure the best product features. At the same time, the product should be avoided to place in direct sunlight and high temperature environment.

- 9. 纯胶膜开料后建议 30 天内完成压合固化。未固化纯胶在生产加工的整个材料的存储和转序过程中,需要用 PET 密封袋防护好材料,同时温度不应超过 10℃(A1/A 不超过 30℃),湿度<70% RH。</li>
- It is strongly recommended that the compression curing be completed within 30 days after the lamination of the bonding sheet. In the process of storage and circulation of the product during production and processing processes, we need to use PET seal bags to protect the product under  $10^{\circ}$ C temperature (A1/A<30°C) and 70% RH humidity.
- 3. 在背胶与贴合 FPC 前,接触界面需做表面清洁,须保证接触界面干燥及不残留溶剂(如酸碱、油污等)。

Before lamination, please ensure the cleanliness of the lamination surface, especially the lamination surface must be dry and clean and should not contain solvent residuals (e.g. acidic substances, alkaline substances, grease, etc.).

4. 压合后的产品建议使用千层架烘烤,如无千层架建议叠层张数不超过 20PNL,以 避免叠层太多而影响产品固化效果。

Pressed products are recommended to be baked on a multi-layer rack. If there is no multi-layer rack, in order to ensure curing effect, it is recommended that the number of laminated sheets should not exceed 20PNL. 5. SMT 前烘烤处理, 温度 120°C, 时间 2-4 小时。

SMT pre baking treatment, temperature 120°C, time 2-4 H.

6. 此规格书中表述的所有测试数据以及建议之工艺条件和参数仅供参考,产品使用 方需要按照自身实际生产设备及产品要求等因素自行确认最优生产工艺及作业参 数。特此声明!

Hereby declared that all test data and recommended process conditions and operating parameters presented in this technical datasheet are for informational purposes only. Product users need to confirm the optimal production process and operating parameters according to their actual production equipment and product requirements.

物性测试方法 Properties Test Method

#### 剥离强度检验方法 Peel Test Method

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1、范围 The range:

本检验方法适用本公司纯胶产品剥离强度之量测。This test method is suitable for peeling strength measurement of the bonding sheet.

- 2、检测仪器 Testing instruments:
   剥离强度测试仪 Peel strength testing instruments
- 3、 样品制作 The sample:
- a) 分别裁取 1 块 0.5mi 1/0.5oz 有胶单面基材,大小为 10cm×10cm,用酒精清洁 干净,待用。

Slice a piece of 0.5mil/0.5oz one-sided FCCL and 0.5mil Coverlay, respectively, in the size of 10cm×10cm, Using alcohol to clean, ready for use.

b) 裁取一块大小 10cm×10cm 的纯胶膜,先与单面基材 PI 面进行贴合,放在 120°C过塑机上过一遍,冷却后将过塑后的样品裁切出 3 条 0.5cm 宽,长 10cm 以上的样片,待用。
Cut the bonding sheet in the size of 10cm × 10cm, first laminate with the FCCL-PI, then placed on the laminator at the temperature of 120 °C, after cooling the sample will be sliced into three pieces in the size with width of 0.5cm and length of 10cm, ready for use。

- c) 取一片长 8cm, 宽 0.5cm, 厚 0.2mm 钢片, 用酒精把表面清洁干净, 待用。 Take a 8cm, x 0.5cm, thickness 0.2mm SUS, and use alcohol to clean the surface, then set aside。
- c)将钢片贴在样片的纯胶膜面,并快压:温度 180℃、压力 30kgf/cm2、预压时间 10s、成型时间 120s;熟化: 160 ℃ × 60min; Bond an adhesive film to SUS and quick press; temperature 180℃, pressure 30kgf/cm2, pre pressing time 10s, molding time 120s; curing: 160℃ \* 60min.
- 4、 样品测试 The sample test:
- a) 把样品钢片面用双面胶固定在测试仪的滚轮上,用夹具夹住 FCCL 一端,与滚轮垂直,然后匀速上升,每隔 1 秒,按打印机一次,共打印出 15~30 个数据即可,取打印数据的平均值作为此条样品的剥离强度值。Fix the sample SUS surface on the roller of the peel strength testing instrument with double-sided tape. Clamp one end of FCCL with fixture, perpendicular to the roller, and then rise uniformly. For each second, press the printer once and print out 15-30 data, take the average value of the printed data as the peeling strength value of this sample.

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- b) 注意事项: 剥离机上升速度: 50mm/min, 剥离距离: 10~20mm; 拉铜箔、样品与滚轮垂直。Attention: machine rise: 50 mm/min, stripping distance:
   10~20 mm; Pull copper foil, and is pulled perpendicular to the roller.
- 5、公式计算 Formula to calculate:

拉力 Tensile force(kgf)

剥离强度 Peel strength =

宽度 The width (cm)

注: 以上规范参考 IPC-TM-650, Method 2.4.9. Note: The above specification reference IPC - TM - 650, Method 2.4.9.

### 焊锡耐热性检验方法 Solder Resistance Test Method

- 范围 The range:
   本检验方法适用于东溢公司纯胶产品焊锡耐热性之量测。This test method is suitable for soldering resistance measurement of the bonding sheet.
- 检测设备 Testing instruments:
   锡炉。Wave solder
  - 1. 样品制作 Sample Preparation:
- a) 切取两块半对半单面板,切取 10cm×10cm 大小,先用 120℃烘烤 5~10 分钟,然后待用(注:必要时用丁酮轻擦一遍再烘干)。Cut two pieces of single-sided FCCL, cut into the size of 10cm×10cm, bake at 120°C for 5 to 10 minutes, and then stand by. (Note: Rub it gently with MEK and dry it again if necessary).
  - b) 切取一块大小相同的纯胶膜, 先与一块覆铜箔 PI 面进行贴合, 放在 120°C过 塑机上过一遍, 冷却后撕掉涂胶基材, 再与另外一块覆铜箔 PI 膜贴合, 再放在 120°C过塑机上过一遍。Cut a piece of bonding sheet of the same size, to laminate with the PI side of a piece of FCCL, press with a laminator at 120°C, peel off the FCCL after cooling, and then laminate with the PI side of another FCCL, and then press with a laminator at 120°C again.
- c)快压:温度180℃、压力100kgf/cm2、预热10s、成型90s;熟化:160 ℃× 60min;
   Quick press: temperature 180℃, pressure 100 kgf/cm<sup>2</sup>, Time: 10s, 90s; Cure: 160 ℃ × 60 min.
  - 4. 样品测试The sample test:

将固化好的样品立即裁成 3cm×3cm 大小三块,用镊子夹住浸入恒温焊锡液中,焊锡液温度 288℃,每个样品浸锡 10S,然后拿出观察其表面是否有分层或 起泡.以上测试请务必在 5 分钟完成,以防止再次吸湿影响测试结果。Cut the

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cured sample into three pieces of 3cm \*3cm size immediately, clamp the cured sample with tweezers in immersed solder solution at constant temperature, and the solder liquid temperature is at 288°C, dip each cured sample for 10S, then take out the dipped sample to observe the surface for traces of delamination or blistering. The above test must be completed in 5 minutes to prevent further hygroscopicity from affecting the test results.

注: 以上参考 IPC-TM-650, Method 2.4.13。 Note: The above specification reference IPC - TM - 650, Method 2.4.13.

### 离型力的检测方法 Test Method of Deposition Force

取纯胶原膜样品,尺寸250\*200mm,按照过塑机或低温压合转移的背胶工艺方式, 转移到所需背纯胶的物料上,完成并放置至冷却后,用手指扣起纯胶边缘,拉动离 型膜,无难撕及带胶不良即可。

Take bonding sheet in the size of 250\*200mm, and transfer the adhesive to the material with the laminator at low temperature. After finishing lamination and the material is cooled down, buckle the edge of the bonding sheet with your finger, pull the release film, and to detect whether there is no difficulty in tearing.