SHENZHEN FITECH CO., LTD.

低温锡胶系列—规格书

Low temperature solder adhesive series

FSA-180 系列 — FSA-1804、FSA-1805、FSA-1806 、FSA-1807

技术部

Technical Department

Technical Data Sheet

锡胶（Solder Adhesive）FSA-180 系

一、 简介 Introduction

FSA-180 系列锡胶采用球形度好，粒度均匀，氧含量低、高强度的福英达 FL180 低温专利合金焊粉及优良无卤助焊胶配制的优质低温高可靠性锡胶，焊接固化过程中很少溶剂挥发，焊接后无锡珠，锡粉熔化收缩，焊点冶金连接，等同为锡膏焊接效果，焊接残渣成为热固胶，附在焊点周围，加强焊点强度，起到防腐蚀、绝缘的作用，免清洗，为优良的焊接材料，非常适用于薄型基板及非耐热元器件的可靠性封装。

FSA - 180 series solder adhesive is a high quality solder with good sphericity and granularity, low oxygen content of Fitech patent FL180 alloy solder powder and good halogen-free flux preparation , less VOC, less solder ball, solder powder melting contraction, solder joint metallurgical connection, equivalent to solder paste the welding effect, soldering residue become a thermosetting plastic, attached to the solder joints, strengthen the solder joint , have the effect of corrosion resistance, insulation, no clean, it is a excellent soldering material.It is very suitable for thin substrate and non - heat - resistant components of high reliability package.

二、 产品特性及优势：Features and Advantages

1. 回流峰值温度 180℃，焊接强度好，
   The peak temperature of reflow is 180 ℃, and the jointing strength is good.

2. 焊接后无需清洗、残留物热固成胶，电绝缘性好。
   No clean, residual thermosetting glue, good electrical insulation,after welding.

3. 化学活性好，无锡珠，热固胶附在周围边角，焊点可靠性高。
   Good chemical activity, no solder ball, thermosetting adhesive attached to the surface and corners, high reliability of solder joints.

4. 操作简单，可选择回焊炉、电热板、烘箱等。
   Simple operation, able to choose from reflow oven, heating plate, oven.

5. 触变性好，粘度合适，稳定性好，不分层，工作寿命长。
   Good thixotropy, suitable viscosity, good stability, no delamination, long working life.

6. 具有自组装、芯片纠正功能，涂刷锡胶在加热时自动纠正芯片，焊料自动与焊盘结合。
   With self-assembly and chip correction function, the solder paste automatically corrects the chip when heated, and the solder automatically combines with the pad.

三、 技术特性：Technical feature

1. 未固化时特性：Before curing

产品性能 Feature	指标 Result	备注 Note
外观 Appearance	浅灰色 Light gray	膏状 Paste
金属填料类型 Alloy	FL180(SnBiAgX)	
金属填料粒径 Powder size	FSA-1804 T4 20-38μm FSA-1805 T5 15-25μm FSA-1806 T6 5-15μm FSA-1807 T7 2-11μm	类型 Description
金属填料熔点 Alloy melting point	141~169℃	
金属填料比例 Powder content	印刷型 Printing 87±2% 点胶型 Dispensing 81±2%	可进行调整 Adjustable
比重 Solder density	4.0~5.0	比重瓶
粘度 Viscosity	印刷型 Printing 150±30 Pa.s 点胶型 Dispensing 45±10 Pa.s	Malcolm (10rpm) 可按客户要求进行调整
触变指数 Ti	0.5±0.1	Lg(3rpm/30rpm)
卤素含量 Halogen Cl+Br	无卤< 1500ppm	
保质期 Shelf life	4 month@ -20℃	

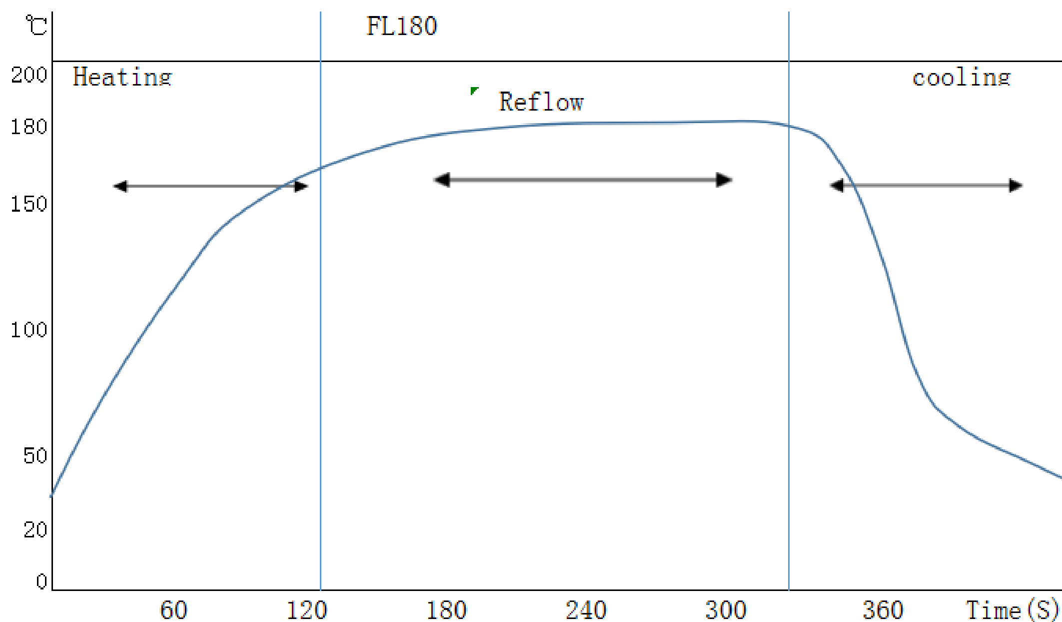
2. 固化后特性：After curing

性能 Feature	指标 Result	备注 Note
导热系数 Thermal conductivity	32 J/M.S.K	
导电率 Electrical conductivity	7.5% of IACS	
抗拉强度 Tensile strength	92Mpa	拉伸速率 2mm/min
铜板腐蚀性 Copper corrosion test	合格 Pass	
残留物干燥度 Dryness test	合格 Pass	
锡球测试 Solder ball test	合格 Pass	
润湿测试 Wetting test	合格 Pass	

四、 焊接固化工艺：Soldering & curing process

1. 电热板梯度加热 Heating plate：100℃@10~30 s +180℃@180~240s
2. 回流焊接固化 Reflow oven：

PS:参考下图回流曲线加热固化，要求在氮气保护下回流. Heat cure according to the reflow curve as shown below，under nitrogen protection.



Heating:25~150℃, 2-3℃/sec
Reflow:>150℃, 180-240sec
Peak Temp:180℃
Cooling:2-4℃/sec

五、 包装储存 Package and storage

1. 包装 Package

- 印刷型：500g/罐，宽口型塑胶（PE）瓶包装，可按客户要求进行包装，并盖上内盖密封封装，送货时可用泡沫箱盛装。

Printing: 500g/bottle, wide-mouth plastic (PE) bottle, according to customer's requirements , sealed with inner lid and packaged in foam box.

- 点胶型：EFD 针筒 10g/5cc、10g/10cc、20g/10cc 包装，可按客户要求进行包装，运输时采用冰袋、泡沫箱+纸箱包装。

Dispensing: The dispensing syringes are packed in 10g/5cc, 10g/10cc, 20g/10cc according to customer's requirements. They are packed in ice bags, foam boxes and cartons during transportation.

2. 运输储存 Transport storage

➢ 运输条件：干冰冷冻运输；Transport: dry ice.

- 储存条件:收到后应尽快将其放进冰箱储存,建议储存温度为-20℃。温度过高会相应缩短其使用寿命,影响其特性。
  Storage: It should be stored in the refrigerator as soon as possible after receipt. The recommended storage temperature is -20 ℃. If the temperature is too high, it will shorten its service life and affect its characteristics.

- 有效期限：在-20℃正常密封储存条件下，有效期为4个月。
  Selflife:4 months under normal sealed storage conditions of -20 ℃.

- 工作时间：建议回温后24小时内使用完毕。
  Work time: Used within 24 hours after returning to temperature.

六、 使用方法：Instructions

- ✓ 回温方式：不开启盖子的前提下，于室温中自然回温；回温次数不超过两次；
  Recovery method: don't open the bottle cap until the solder is close to room temperature, No more than two times of temperature return;

- ✓ 回温时间：室温下回温2~3小时。达到热均衡所需要的实际时间因容器大小而异。
  Recovery time : Generally, paste should be removed from refrigeration 2~3 hours before use. Actual time to reach thermal equilibrium will vary with container size.

- ✓ 注　　意：未经充足“回温”，不要打开瓶盖，不可用加热的方式缩短“回温”时间；
  Note: without enough "recovery", DO NOT open the bottle caps. DO NOT try to heat the paste to lower recovery time.

- ✓ 使用环境：锡胶最佳使用环境温度为20-25℃，相对湿度40-60%RH。建议在氮气保护环境下进行回流焊。
  Using environment: The best temperature for using the solder paste is 20 to 25 ℃, relative humidity 40-60% RH. Suggestions reflow soldering under nitrogen protection.

- ✓ **钢网清洗溶剂：醚类，优选丙二醇甲醚（PM）。**
  Stencil cleaning solvent: ether, preferably propylene glycol methyl ether (PM).

七、 健康与安全方面应注意事项 Health and safety considerations

注意！Note!

以下资料仅提供给使用者作参考,用户在使用前应了解清楚。详细内容请查阅本品物料安全数据表(MSDS)。

The following information is provided for users' reference only. Users should know clearly before using it.For details, please refer to the material safety data sheet (MSDS) of this product.

本制品不含受管制的特定化学物质，也不含有机溶剂中毒预防规则中所规制的有机溶剂，但仍需作必要的防范措施，以确保人体健康及安全。

This product does not contain specific chemical substances that are regulated, nor does it contain organic solvents that are regulated in the Organic Solvent Toxicity Prevention Regulations. However, necessary precautions must be taken to ensure human health and safety. For products containing lead, the operation should be carried out in accordance with the Labor Safety and Health Act and lead poisoning prevention rules.

i. 锡胶是一种化学产品，混合了多种化学成份，应切记避免近距离嗅闻其气味，更不可食用。

Solder adhesive is a chemical product that is mixed with a variety of chemical ingredients. should remember to avoid close smell of its smell, not to be edible.

ii. 在焊接固化过程中，锡胶中的焊剂产生的部分烟雾会对人体的呼吸系统产生刺激，长时间或一再暴露在其废气中可能会产生不适，因此应确保作业现场通风良好，焊接设备必须安装充足的排气装置，将废气排走。

In the welding process, part of the smoke generated by the flux in the solder adhesive will stimulate the respiratory system of the human body, which may cause discomfort if exposed to the exhaust gas for a long time or repeatedly. Therefore, it is necessary to ensure good ventilation in the operation site.

iii. 应有必要的防范措施避免锡胶接触皮肤和眼睛。若不慎接触到皮肤，则应立即用沾有酒精的布将该处擦干净，再用肥皂和清水彻底清洗干净。若不慎让锡胶接触眼睛，则需立即用清水冲洗 10 分钟以上，并尽快送医院医治。

Necessary precautions should be taken to prevent the adhesive from touching the skin and eyes. In case of contact with the skin inadvertently, the place should be immediately cleaned with an alcoholic cloth, and then thoroughly cleaned with soap and water. If the tin paste contact the eyes carelessly, it shall be immediately washed with water for more than 10 minutes and sent to the hospital as soon as possible.

iv. 作业过程中不允许饮食、抽烟，作业后须先用肥皂或温水洗手后才能进食。

No eating or smoking is allowed in the course of homework. After homework, you must wash your hands with soap or warm water before eating.

v. 虽然本品之溶剂系统闪点较高，但仍然易燃，应避免接近火源。若不慎着火，可用二氧化碳或化学干粉、泡沫灭火器进行灭火，不可用水灭火。

Although the solvent system of this product has a very high flash point, it is still flammable and should be avoided. If you accidentally catch fire, use carbon dioxide or chemical dry powder fire extinguisher to extinguish the fire. Do not use water to extinguish the fire.

vi. 废弃的锡胶和清理后沾有锡胶污渍的清洁布不能随意掉弃，应将其装入封密容器中，并按国家和地方的相关法规处置。

The waste solder adhesive and the cleaning cloth with solder adhesive stains after cleaning shall not be discarded at will. It shall be put into a sealed container and disposed of in accordance with relevant national and local regulations.