

**SOLDER
PRODUCTS GUIDE
CATALOGUE**
焊锡产品导购手册

Green Lead-free Solder Manufacture Experts

强力 绿色环保焊锡制造专家

Making unremitting efforts Constantly surpassing oneself

自强不息 / 努力超越



董事长致辞:

Chairman address:

尊敬的社会各界朋友:

真诚的感谢您与强力焊锡合作并携手同行! 因为您的信任, 使强力品牌更添了一份活力, 同时因为您英明的决策, 也为您的产品获得了无忧的电子焊接品质保障。

强力焊锡人严谨、执着的致力于电子焊接材料的研发、制造, 不断完善卓越绩效的管理模式, 投入巨资引进国际先进的生产设施、ICP测试设备, 为了您使用我们的产品能百分百的放心做好了一切准备工作!

强力焊锡郑重承诺, 您的电子焊接技术的难题, 直接拨打我们的技术服务电话, 我们帮您解决, 我们的使命就是“为电子焊接技术整体解决方案作出贡献。

强力焊锡数十年发展以来, 合作客户遍布全国, 直销欧美, 取得了骄人的业绩, 赢得了业界的一致美誉, 成为了焊锡行业强企。公司在快速发展的高速路上, 与您对强力品牌的充分信任是分不开的, 我们始终如一的感谢您的信任与合作, 我们为“打造最具竞争力的现代焊锡材料制造企业”的愿景而继续努力!

祝愿我们共同开创和谐共赢的美好明天!

董事长:
Chairman:



图(一) / Fig.(1)



图(二) / Fig.(2)



图(三) / Fig.(3)



COMPANY SCALE

企业格局

图(一) 强力控股有限公司温州瓯江高新工业园区，投资2亿元，占地42亩，将建成花园式的工业园，绿化面积达60%以上。工业园是集研发生产、办公、物流等多功能一体化的综合工业园。

图(二) 强力控股有限公司乐清中心工业园，位于乐清市经济技术开发区纬19路，占地面积7000平方米，建筑面积15000平方米，总投资3000万元。集生产、研发、销售、服务于一体。

图(三) 强力控股有限公司柳市象阳工业园，占地面积8000平方米，建筑面积11000平方米，总投资3500万元。年产锡丝3000吨，锡条、片、球1000吨，锡膏1500吨，助焊剂1000吨。

Fig.(1) QLG holdings Co.,Ltd Gaoxin industrial park in Oujiang, Wenzhou, Invest 200 million yuan, covers 42 acres area, will be built a garden style industrial park, green area covered more than 60%.Industrial Park is a research and development, production, office, logistics and other integrated industrial park.

Fig.(2) QLG Soldering Materials Co., Ltd and Yueqing Center Industrial Park located in Yueqing City, latitude 19 Road Economic Development Zone, covers an area of 7000 square Meters, constructed area of 15,000 square meters, total investment of 30 million Yuan, Get the Production, R & D, sales and service together.

Fig.(3) QLG Soldering Materials Co., Ltd and Liushi XiangYang Industrial Park, covers 8,000 square meters, construction area of 11,000 square meters, total investment Capital 35 million yuan. Annual output of 3000 tons of tin wire, tin, slice, the 1,000 tons of ball, 1500 tons of solder paste, 1,000 tons of flux .

ABOUT QLG HOLDINGS

- 浙江强力控股有限公司始创于2000年，是一家集环保焊锡材料、电力金具、高压电气等产品的研发、制造、贸易、服务于一体的全国无区域控股公司，公司总注册资本超亿元，总资产2亿多元，年产值达7亿元，员工800多人，厂房总面积5万多平方米，综合实力名列国内同行前茅。
- 公司通过了ISO9001:2008质量管理体系认证，SGS认证以及一系列国家权威质量检测机构的认证，并成为国家信息部第四十六所协作单位。2009年，被浙江省科技厅认定为“浙江省中小型企业”；2010年公司被国家科技部列入“国家星火计划项目”；2011年，公司7类主导产品取得“浙江省级科学技术成果奖”；2012年，公司被认定为国家级高新技术企业；2014年，公司与北京化工大学达成联合研发战略合作；2015年，公司被认定为国家重点高新技术企业。
- 公司拥有大批专业研发人员，拥有省级实验室，并于2016年在北京设立企业研发中心，是一支以博士、硕士、本科生为主的专业研发团队，研究覆盖环保锡膏、特殊用途锡膏、金属合金焊料、助焊剂、清洗剂、红胶等多个领域。经过多年的积累，公司已经获得了11项发明专利和12项实用新型专利，公司参与制定了电子焊料GB/T31476、电子助焊剂GB/T31474、电子焊锡膏 GB/T 31475等三项国家标准，其中国标电子焊锡膏 GB/T 31475我公司为第一起草单位。
- “科技创新，引领行业”是我公司永恒的经营理念。公司本着“以创新求发展，以质量求生存”的原则，坚持“用户至上，质量第一、诚信为本、共同发展”的宗旨，秉承“自强不息，努力超越”的企业精神，在生产经营活动中，始终如一地坚持“质量是我们尊严，是企业的生命”，为了保证质量，公司不惜重金从美国PE公司引进代表国际先进水平的ICP发射光谱仪，严格控制原材料质量，使我公司的质量可靠性进一步得到提升。目前公司产品在国内相关行业处于领先水平，在国际市场也具有良好的竞争能力，产品远销日本、美国、加拿大、巴西、墨西哥、阿根廷、德国等40多个国家和地区。
强力控股公司愿与您携手并肩，力创美好明天！

Zhejiang QLG holdings Co.,Ltd is built in 2000,company become a national non regional holding company combining the research and development, production, trading, service of environmental protection solder material, electric power fittings, high voltage electrical, the company's comprehensive strength among the best in domestic counterparts.

The company passed the ISO9001:2008 quality management system certification, SGS certification and certification of a series of national authority quality inspection organizations, and become the forty-sixth cooperative unit of National Ministry of Information. Company was listed in the national Spark program" by National Ministry of science and technology in 2010; The company was recognized as a national high-tech enterprises in 2012; company achieved a joint R & D strategic cooperation with Beijing University of Chemical Technology in 2014; The company was recognized as a national key high-tech enterprises in 2015.

Company has a large quantity of professional R & D personnel, equip provincial laboratories, set up a company R&D center in Beijing in 2016, is a doctoral, master, undergraduate based professional R & D team, research covers multiple fields such as environmental solder paste, Special-purpose solder paste, metal alloy solder, flux, cleaning agent, red gum, etc. After many years of accumulation, our company has obtained 11 invention patents and 12 utility model patents, the companies involved in the establishment of electronic solders GB/T31476, electronic flux GB/T31474, electronic solder paste GB/T 31475 these three national standards, and our company is the first drafting unit of GB/T31475.

"Scientific and technological innovation, leading the industry" is our eternal business philosophy. in the production and operation activities, we consistently adhere to the "quality is our dignity, is the life of the enterprise", in order to guarantee the quality, our company spent heavily to introduce the ICP emission spectrometer from the United States PE company, which represents the international advanced level. Strictly control the quality of raw materials, make reliable of our quality further improved. At present, our company's products at a leading level in the domestic industry, and we also have a good competitive ability in international market, our products are exported to the United States, Canada, Brazil, Argentina, Germany Japan, and other more than and 40 countries and regions.

QLG holdings Co.,Ltd is willing to work with you to create a better tomorrow!



助焊膏自动生产线
Solder paste automatic production line



锡膏无尘生产车间
Solder paste dust-free production workshop



产品质量测试区
Corner of products testing zone



锡膏自动灌装设备一角
Solder paste automatic filling equipment



形貌观察室一角
Corner of appearance observation area



国际先进的ICP发射光谱仪
Advanced ICP emission spectrometer



公司化验中心一角
Corner of Laboratory Center

CERTIFICATION

资质荣誉





Market services
营销服务



我们的使命

“为电子焊接技术提供整体解决方案”

锡条解决方案(个案说明)

一、售前

客户提出使用我公司产品，我公司销售和技术人员根据客户提出的要求进行分析和研究，及时做出方案并与客户沟通，通过沟通并实施，对客户提出的要求进行确认，完全符合后开始使用。

二、售中

对使用的产品进行电话、现场、传真、网络图片等方式跟踪，及时了解客户的现在和潜在的发展要求，并做好改进的工作。

三、售后

对使用的产品进行定期的跟踪，观察表面、测试性能、化验成分等，若发现问题先分析问题的根源，在提出改进措施纠正预防措施。

例如：

客户提出焊接线路板的要求：

- 1、焊接质量好、速度快；
- 2、员工要少，场地占有量相对少，产量要高。

用焊锡如何能达到这个要求？

我公司技术员根据要求讨论分析得出，采用波峰焊焊接，并提供一些相关波峰焊的图片和焊接类似的产品等，客户采购并试用，使客户得到认可和符合客户的要求。

在使用中我公司销售人员和技术人员会对使用的情况进行跟踪，了解焊接板材的质量、焊点的亮度、是否有虚焊漏焊的现象、使用焊锡上的安全防护等问题。是否有新的产品试用这种焊接方式等。

在使用焊锡条焊接时，进行定期的维护到现场观察焊接现状，定期(1个月)的从锡炉里取样免费化验分析焊锡成分。在使用中发现锡渣慢慢变多，锡液表面有发黄、发红现象，锡渣慢慢变浓，PCB板上有部分焊点有虚焊、连焊、拉尖等现象。化验结果发现一些杂质元素慢慢升高(如Cu、As、Zn、Al等)，对焊接产品的质量有影响时，及时沟通采取处理和更换波峰里的焊锡条。

Our mission:

Provide a whole solution for electronic soldering technology

Solution about solder bar (Case description)

I. Pre-sale

The customers have plan to use our products, and our sales and technical person will conduct analysis and research according to the customer's requirement, make a solution and communicate with customers, through communication then carry it out, confirm the customer's request, start to use the solder bar if it is completely match the customer's requirement.

II. Sales

Tracking the products which is used by customers through telephone, live, fax, internet pictures, etc, timely understand the customer's current and potential developed requirement, and do well in the improving work.

III. After-sale

Tracking the products which is used by customers regularly, observe the surface, test the performance, assay the composition, etc. If find a problem, should analysis the source of the problem at first, then put forward a improving solution, correcting and preventive solution.

for example:

Customers put forward a requirement about soldering the PCB

1. Good soldering quality, fast speed;
2. Less staff, relatively less site occupied area, high yield.

How to reach this requirement with solder?

According to the requirement, our technician come to conclusion after discussion and analysis, can adopt the wave soldering, offer some relative pictures and similar products about wave soldering, let the customer purchase and have a try, make the products recognized by customers and meet the customer's requirement.

Our sales persons and technicians will track the usage when customers use the products, they will get to know the quality of solder plate, brightness of solder joint, whether exist a leakage soldering phenomenon, safe protection about solder, whether exist new products try to solder in this method.

When soldering with the solder bar, need regular maintenance and spot observation of the soldering situation, regularly sampling from solder pot(one month), free to analysis and assay the solder composition. Find there is more tin slag when using the solder bar, and there is red, yellow phenomenon on the tin liquid surface, tin slag be thicker, some solder joint occur solder false, joined solder, solder joint icicle phenomenon. Test results found some impurity elements slowly increased(such as Cu, As, Zn, Al), when they have an effect on the quality of soldering products, should have a timely communication, take steps and replace the solder bar in wave soldering.

KEEP IMPROVING TO BE BEST⁺

精益求精 / 止于至善





CORPORATE CULTURE



企业文化

愿景：共同创建一个绿色、环保、低耗世界。

现今世界，能源问题已成为制约经济高速发展和环境保护的核心因素，强力品牌产品将致力以改善客户在电子领域的绩效和日常生活水平为目标。凭借其卓越的产品性能，通过量身定制的电子焊接解决方案，使电子产品更环保、安全、可靠，帮助人类最充分地利用资源，共同创建一个绿色、环保、低耗世界。

使命：为电子焊接技术提供整体解决方案

通过可持续的技术创新发展计划，开启一个新的“科技时代”，为全球客户提供与众不同的高性能、高品质的产品。并以安全、可靠、高效、创新的焊接解决方案，整合出绿色电子焊接系统，让资源得以最充分的利用。

品牌广告语

绿色环保焊锡制造专家！

企业口号

自强不息，努力超越！

价值观：积极、开放、专业、高效

积极主动—简单思考，积极行动；正面引导身边的人和事，不消极抱怨；勇于担当，问题到我这里一定要落实，决不推诿拖延；坚韧不拔，不断挑战高绩效，从中获得自信和快乐；

开放创新—眼光向外，始终保持对新人、新事、新观念的高度热忱；勤学善思，不以相同的自己去面对不同的未来；勇于尝试，不惟经验及定势，不惧挑战与风险；鼓励有价值的创新，容忍创新中的失误；

专业向导—快速响应，决不让内部冲突妨碍对客户的便捷服务；换位思考，将客户抱怨作为我们改善工作的指引；推陈出新，让客户感到与我们合作更有价值；着眼未来，以远见和真诚促进客户健康持久发展；

高效共赢—知行合一，群策群力，努力将个人能力转化为组织竞争力；同甘共苦，企业与员工发展中共享，逆境中共担；庄严对待产品品质和品牌声誉，做一个负责任的企业成员。

Vision: to create a green, environmental protection, low consumption of the world.

Nowadays, energy problem has become a key factor restricting the rapid development of economy and environmental protection, QLG production will focus on improving the performance of customers in the field of electronics and take the level of daily life as the goal. Depend on its excellent product performance, through tailored electronic soldering solutions to make the electronic products more Environmental, safe, reliable, to help people make the best use of the resources, create together a green, environmental, low consumption world.

Mission: to provide the total solution for the electronic soldering technology

Through sustainable technology innovation development plan, open a new era of "science and technology", to provide global customers with distinctive high performance, high quality products. And use the safe, reliable, efficient and innovative soldering solutions to integrate a green electronic soldering system, let the resources be fully utilized.

Enterprise Slogan

Unremitting self-improvement, strive to exceed

Brand slogan

Green environmental solder manufacturing expert!

Values: positive, open, professional, efficient

Positive initiative—Simple thinking, positive action; give the people and things around a right leading, no negative complaints; bravely take responsibilities, problem to me here must be solved, never buck passing or delay; firm and indomitable, constantly challenge high performance, and get confidence and happiness;

Open innovation—Look outward, always maintain a high enthusiasm for new people, new things and new ideas; Hard working, not be a man same as now face a different future; Have the courage to try, not only indulge in experience or set, not afraid of challenges or risks; encourage valuable innovation, tolerate mistakes in innovation;

Professional guide—Quick response, never allow internal conflicts to interfere with the customer's convenient service; perspective-taking, regards customer complaints as our guide to improve the work, and abandon the old and bring forth the new, make customers feel more valuable to cooperate with us; focus on the future, always with vision and sincerity to promote the healthy and lasting development with customers ;

High efficiency and win-win—The unity of knowledge and action, work together, make effort to transform personal ability into organizational competitiveness; share happiness and toughness, company and staff sharing in development, bearing in adversity; be seriously deal with product quality and brand reputation, being a responsible company member.

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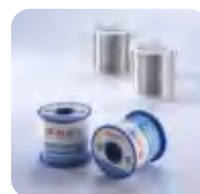
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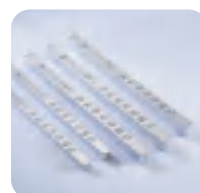
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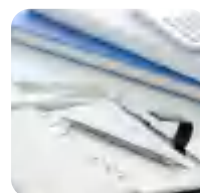
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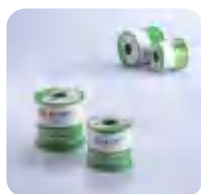
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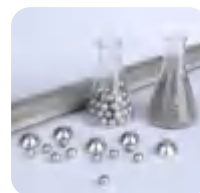
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焊锡膏系列

Soldering tin paste series

概述

锡膏是现代印刷电路板和表面组装技术 (SMT) 最重要连接材料, 因此为了要达到理想又稳定的焊锡效果, 选择适当的锡膏是决定性的因素, 选择锡膏所要考虑的因素包含合金成份及含量和助焊剂类型。

锡膏的保存

用户方收到本公司的锡膏产品后请立即放入冰箱, 在0-10°C 下进行冷藏保存。请注意不可以对锡膏进行冷冻保存。另一方面, 锡膏开封使用之后如果还有剩余且希望在下一轮组装过程中继续使用而不是废弃, 请再次将锡膏容器密封, 但是不可以放入冰箱内保存, 而只是放置在室温环境下即可。

锡膏印刷前的准备

锡膏从冰箱中取出, 投入印刷工序之前一定要进行以下 2 个步骤的操作: 不要开封, 在室温下放置至少4-6个小时以上, 以使锡膏的温度自然回升至室温。锡膏温度达到室温后, 在投入印刷之前, 要进行搅拌以保证锡膏中的各组成均匀分布。建议采用专用搅拌设备, 沿同一方向搅拌1-3分钟即可。

锡膏的印刷工艺

丝网/模板印刷是最为常用的高效锡膏涂敷方式。由于锡膏的粘度对温度和湿度相当敏感, 印刷工位或印刷设备的内部环境应尽可能保持18-24°C和40-50%RH, 同时避免空气流动。

锡膏的使用原则

先进先出, 即在保证性能满足要求的前提下, 首先使用库存时间最长的产品。

使用以前剩下的锡膏时应与新锡膏按 1:1 比例混合使用, 而不能完全使用“旧”的锡膏。

锡粉的颗粒分布

本公司所用的锡粉是在真空环境中及在严格的品管制程控制之下生产。在这种制程下所生产的锡粉纯度高、低氧含量及颗粒散布一致。为了保存锡的新鲜以及不会氧化, 每一包锡粉都是采用真空包装。

Soldering tin paste series

Soldering tin paste is the most important joint material for modern printing wiring board and surface makeup technique (SMT). It is determinative factor for ideal and steady soldering effect that chooses appropriate tin paste. Its alloy composition and content and flux type should be concerned.

Storage of solder paste

The solder paste should be stored in refrigeration at 0-10°C as it arrives. Please note that, never store the solder paste in freezing. On the other hand, if there is some solder paste left after a assembly process and you hope to use it in the next assembly process, the left solder paste should be stored in a container, sealed and left at room temperature. Please note that, once the solder paste is unsealed, it should not be re-refrigerated.

Preparation before printing the solder paste

Prior to printing, the solder paste must be handled correctly as the followings: Do not remove any seal until the solder paste has warmed naturally to room temperature. The typical warming or stabilizing time for solder paste is 4-6 hours. After the solder paste has reached ambient temperature, stirring/mixing is necessary before printing in order to ensure a uniform distribution of any separate material throughout the solder paste. Stir the paste lightly and thoroughly in one direction for one to three minutes using a special mixing is recommended.

Solder paste printing

Screen / stencil printing is the effective method to apply the solder paste on the corresponding printed circuit board. Since the viscosity of solder paste is sensitive to ambient temperature and humidity, the printing environment should be kept at 18-24°C and 40-50%RH. Meanwhile, air flow should be avoided.

Some principles for application

First in, first out. The oldest solder paste in stock always should be used first if it still satisfies the necessary requirement. If the left solder paste is continually used in the next assembly process, it should be mixed with new solder paste in a 1:1 proportion. Do not only use the "old" solder paste.

Granule distributing of tin powder

The tin powder is made by azotes environment and strict quality control. It has the advantages of high purity, low oxygen content and accordant granule distributing. For storage of fresh tin and without oxygenation, each package of tin is stored by vacuum packing.

LEAD-FREE SOLDERING TIN PASTE SERIES

环保焊锡膏系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007
- RoHS



环保焊锡膏特点

- 印刷滚动性及漏印性好, 对低至0.4mm间距焊盘也能完成精美的印刷;
- 连续印刷时间长, 印刷后数小时基本无塌落, 粘度变化小, 贴片元件不易产生偏移;
- 具有极佳的焊接性能, 在不同部位都能完成良好的润湿;
- 焊接后残留物少、外观透明, 绝缘阻抗高, 不会腐蚀 PCB, 可达到免洗的要求;
- 具有较佳的ICT测试性能, 不会产生误判;
- 其品种分为: 环保中温焊锡膏、环保低温焊锡膏

半导体高温高铅锡膏

半导体高温高铅锡膏是一种专门为晶粒粘着工艺配制的焊膏。本产品经精心配制, 采用自动化点胶设备提供稳定的锡膏量, 性能可靠。半导体高温高铅锡膏用于氮气环境中的回流焊, 留下完全无害的残留物, 残留物只占锡膏质量的2%。

特点:

1. 专门针对功率半导体封装焊接使用, 操作窗口宽。
2. 采用SnPb92.5Ag2.5锡粉, 焊接料中Pb含量超过85%, RoHS指令中属于豁免焊料。
3. 化学性能稳定, 可以满足长时间点胶和印刷要求。
4. 自动点胶顺畅性和稳定性好, 出胶量与粘度变化极小, 印刷时, 具有优异的脱膜性, 可适用于微晶粒尺寸印刷 0.2-0.4mm贴装。
5. 可焊接性好, 在线良率高, 焊点气孔率低于10%。
6. 产品储存性佳, 可在温度 25°C 保存一周, 0-10°C保质期为6个月。
7. 适用的加热方式: 回流炉、隧道炉、恒温炉等。

Lead-free soldering tin features

- Good printing rolling performance and leak printing performance, even the spacing of solder pad is low to 0.4mm, can also complete a exquisite printing.
- Can complete continuous printing for a long time, almost without collapse after printing for a few hours, small viscosity change, SMD components are not easy to move.
- Excellent soldering performance, can complete a good wetting in different parts.
- Less residue after soldering、transparent appearance, high insulation resistance, do not corrode the PCB ,and meet the disposable requirement.
- Better ICT test performance, will not appear the false judgment.

Semiconductor high temperature high lead content solder paste

Semiconductor high temperature high lead content solder paste is specially produced for grain adhesion process. This product is carefully formulated, adopt the automatic glue dispensing equipment to provide a stable volume of solder paste, has a reliable performance. Semiconductor high temperature high lead content solder paste is used for reflow in nitrogen environment, leave a completely harmless residue, he residue accounts for 2% of solder paste.

Feature

- Specially for the power semiconductor encapsulation soldering use ,wide operating window.
- Adopt SnPb92.5Ag2.5 Tin powder, Pb content more than 85% in soldering material, which belongs to a exempted soldering material in RoHs instruction.
- Stable chemistry performance, can meet the long time dispensing glue and printing requirements.
- Has a good smoothness and stability of automatic dispensing glue, gum exudation and viscosity change little. excellent film removal ability when soldering, be suitable for 0.2-0.4mm mounting of crystallite size printing.
- Good soldering ability, and has a high online qualified rate, the rate of soldering point appear pore is below 10%.
- Good storage performance of product, can be stored for a week at 25°C,the shelf life at a temperature between 0°C and 10°C is 6 months.
- Appropriate heating methods: reflow oven、tunnel stove、constant heat oven.

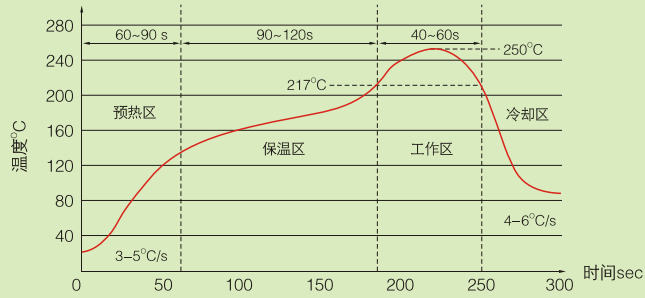
锡粉的颗粒分布 Granule distributing of tin powder

锡粉代号 Tin powder code	筛目代号 Code	直径 Diameter	适用间距 Applicable clearance
LED	-200+400	38-74	标准间距 Standard clearance(< 25mil/0.65mm)
3#粉	-325+500	25-45	小间距 Small clearance(< 20mil/0.50mm)
4#粉	-400+625	20-38	特小间距 Extreme small clearance(< 16mil/0.40mm)
5#粉	-500+900	15-25	特小间距 Extreme small clearance(< 8mil/0.20mm)

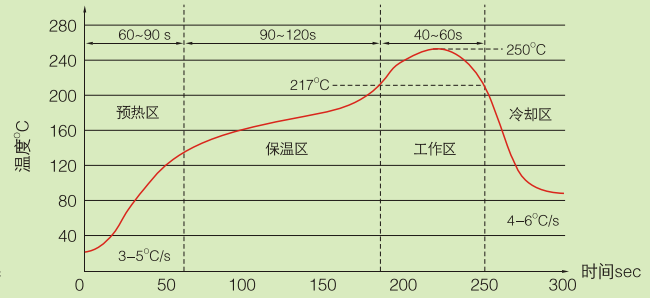
性能参数 Performance parameter

型号 Type	合金成分 Componen	熔点 Melting point	粉末形状 Powder shape	助焊剂含量 Flux Content	特点 Features
QL-3/05	Sn96.5/Ag3 Cu0.5	217°C	≥95%球形	11.5 ± 1%	高焊接性能和良好外观；可针测，非脆性残留物；低空洞率。
QL-03/07	Sn99.0/Ag0.3 Cu0.7	217°C-227°C	≥95%球形	11.5 ± 1%	High welding performance and good looks; can probe, nonbrittle residue; low inanition rate
QL-35/10	Sn64/Bi35 Ag1	151°C-189°C	≥95%球形	10.5 ± 1%	温度适中，与有铅 63/37 熔点及工作温度相近
QL-35/03	Sn64.7/Bi35 Ag0.3	172°C	≥95%球形	10.5 ± 1%	Moderate temperature, which is close to the melting and working temperature of model 63/37 solder paste.
QL-42/58	Sn42/Bi58	138°C	≥90%球形	10.5 ± 1%	适用于低温焊接的产品或元件 Be suitable for products or device which is low temperature soldering.

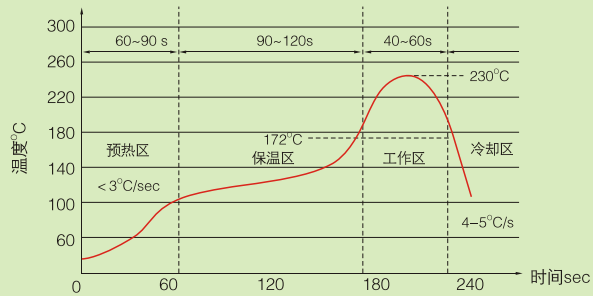
建议回流焊温度曲线 Advise a reflow soldering profile



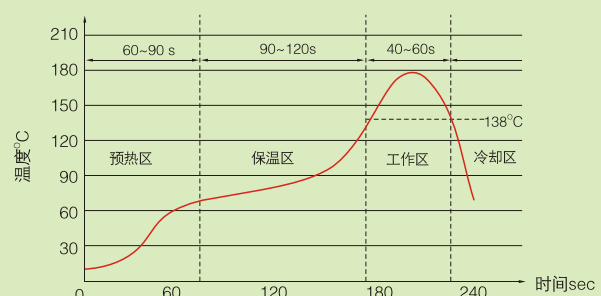
QL-3/05



QL-03/07



QL-35/03 QL-35/10



QL-42/58

SOLDERING TIN PASTE AND VARIETY

焊锡膏系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007
- RoHS



针管锡膏

针管锡膏系专为点涂工艺生产开发配制。本产品经精心配制，采用自动化点胶设备提供稳定的锡膏量，性能可靠。适应各种焊接工艺，焊后残留物少，腐蚀性低，残留物只占锡膏质量的2%。产品具备较强的化学及物理稳定性，在20–28°C之间的恒温状态下，可以拥有精准稳定的出胶量，根据客户的不同工艺，可选用0.15–2.0mm内径的针头，能够满足各类精密点涂工艺的需求。

特点

- 自动点胶顺畅性和稳定性好，出胶量与粘度变化极小
- 可焊接性好，在线良率高，焊点气孔率低于10%。
- 残留物绝缘阻抗可作免清洗工艺，残留物易溶解于有机溶剂。
- 焊后焊点饱满、光亮、强度高，电学性能优越。
- 产品储存性佳，可在温度25°C保存一周，0–10°C保质期为6个月。
- 适用的加热方式：回流炉、隧道炉、恒温炉等。

光伏专用锡膏

该光伏专用锡膏由高活性助焊剂与低氧化度的球形焊料粉末组成，适合焊接裸铜片及表面镀镍的铜片，能有效去除器件或者晶片和焊盘氧化物，形成高强度的焊接，且空洞极低。用于IGBT、光伏器件、以及其他对残留物要求极高的器件和产品焊接，提高产品的长期使用可靠性，且降低清洗成本。

特点

- 本产品为免洗型，回流焊后残留物少，腐蚀性低，表面绝缘阻抗高。
- 在许可范围内，连续印刷稳定，在长时间印刷后仍可与初期之印刷效果一致，不会产生微小锡球。
- 印刷时具有优异的脱膜性，可适用于细间距器件贴装。
- 自动点胶顺畅性和稳定性好，出胶量与粘度变化小。
- 溶剂挥发慢，可长时间印刷不会影响锡膏的粘度。
- 触变性佳，印刷中和印刷后不易坍塌，可减少焊接架桥之发生。
- 可焊接性能好，在线良率高，焊点气孔率低于10%
- 焊后焊点饱满，强度高，导电性极佳。
- 产品储存性佳，可在0–10°C密封保存6个月。

Needle-solder paste

The needle-solder paste is specially produced for point coating process. This product is carefully formulated, adopt the automatic glue dispensing equipment to provide a stable volume of solder paste, has a reliable performance. Adapt to various soldering processes, less residue after soldering, low corrosion, the residue accounts for 2% of solder paste. Products with a strong chemical and physical stability, at the constant temperature between 20–28°C, can make a precise and stable amount of the tin, according to the customer's different processes, can choose a needle which is 0.15–2.0 mm inside diameter, can meet the needs of various types of precision point coating process.

- Has a good smoothness and stability of automatic dispensing glue, gum exudation and viscosity change little.
- Good soldering ability, and has a high online qualified rate, the rate of soldering point appear pore is below 10%.
- Residue is insulated and impedance can be used for non cleaning process, residue can be easily soluble in organic solvents.
- Full soldering point after soldering, light, High strength, good electrical performance.
- Good storage performance of product, can be stored for a week at 25°C, the shelf life at a temperature between 0°C and 10°C is 6 months.
- Appropriate heating methods: reflow oven, tunnel stove, constant heat oven.

Solder paste specially used for photovoltaic

This solder paste is consist of high activity soldering flux and spherical solder powder which is low oxygen degree. is suitable to solder bare copper and the copper which surface is nickel plated, can effectively remove the oxide on the device or oxide on chip and oxide on soldering pad, forming a high strength soldering, and extremely low of the hole. Is used for soldering IGBT, photovoltaic device, other device and products which has high requirement for residue, improve the long-term use reliability of the product, and reduce the cost of cleaning.

- This product is a disposable type, less residue after reflow soldering, low corrosion, high insulation and impedance on surface.
- In an allowed range, continuous printing performance is stable, in a long time after printing can be consistent with the initial printing effect, no tiny solder ball.
- Excellent film removal ability when soldering, be suitable for fine pitch device mounting.
- Has a good smoothness and stability of automatic dispensing glue, gum exudation and viscosity change little.
- Solvent volatilize slowly, will not affect the viscosity of solder paste for a long time soldering.
- Good thixotropy, it is not easy to collapse when printing or after printing, can reduce the occurrence of soldered Bridge
- Good soldering ability, and has a high online qualified rate, the rate of soldering point appear pore is below 10%.
- Full soldering point after soldering, light, High strength, excellent electrical conductivity.
- Good storage performance of product, can be stored for 6 months at a temperature between 0°C to 10°C.

SOLDERING TIN PASTE AND VARIETY

焊锡膏系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007



产品特点

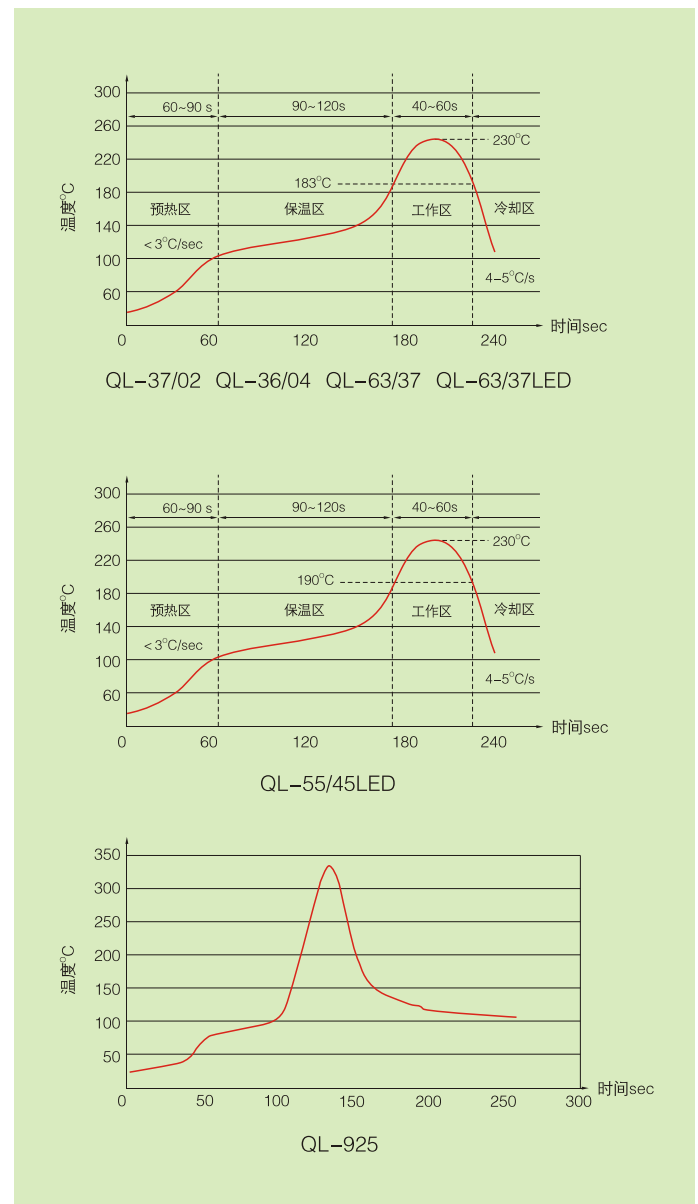
- 印刷滚动性及漏印性好，对低至0.4mm间距焊盘也能完成精美的印刷；
- 连续印刷时间长，印刷后数小时基本无塌落，粘度变化小，贴片元件不易产生偏移；
- 具有极佳的焊接性能，在不同部位都能完成良好的润湿；
- 较宽的回流焊温度范围内仍能表现良好的焊接性能；
- 焊接后残留物少、外观透明，绝缘阻抗高，不会腐蚀PCB，可达到免洗的要求；
- 具有较佳的ICT测试性能，不会产生误判；
- 可适应PCB特殊镀金材料的焊接，无刺激性气味。

Product features:

- Good printing rolling performance and leak printing performance, even the spacing of solder pad is low to 0.4mm, can also complete a exquisite printing.
- Can complete continuous printing for a long time, almost without collapse after printing for a few hours, small viscosity change, SMD components are not easy to move.
- Excellent soldering performance, can complete a good wetting in different parts.
- In a wide range of reflow soldering temperature can still perform well in the soldering performance.
- Less residue after soldering, transparent appearance, high insulation resistance, do not corrode the PCB, and meet the disposable requirement.
- Better ICT test performance, will not appear the false judgment.
- Can adapt soldering of PCB which is special gold plated material, no irritating smell.

性能参数

型号 Type	合金成分 Component	熔点 Melting point	助焊剂含量 Flux Content	特点 Features
QL-63/37	Sn63/Pb37	183°C	10.5 ± 1%	良好的焊接活性，辅展性优良 Good welding activation, excellent auxiliary stretching
QL-37/02	Sn62.9/Pb36.9/Ag0.2	183°C	10.5 ± 1%	
QL-36/04	Sn62.8/Pb36.8/Ag0.4	183°C	10.5 ± 1%	
QL-63/37LED	Sn63/Pb37	183°C	10.5 ± 1%	LED专用，良好的焊接活性和焊接可靠性 Good welding strength and reliable joint
QL-55/45LED	Sn55/Pb45	183°C-203°C	10.5 ± 1%	
QL-925	Pb92.5/Sn5/Ag2.5	287°C-296°C	10.5 ± 1%	半导体专用，符合欧盟高铅豁免标准 Specially used for semiconductor, accord with EU high lead exemption standards.

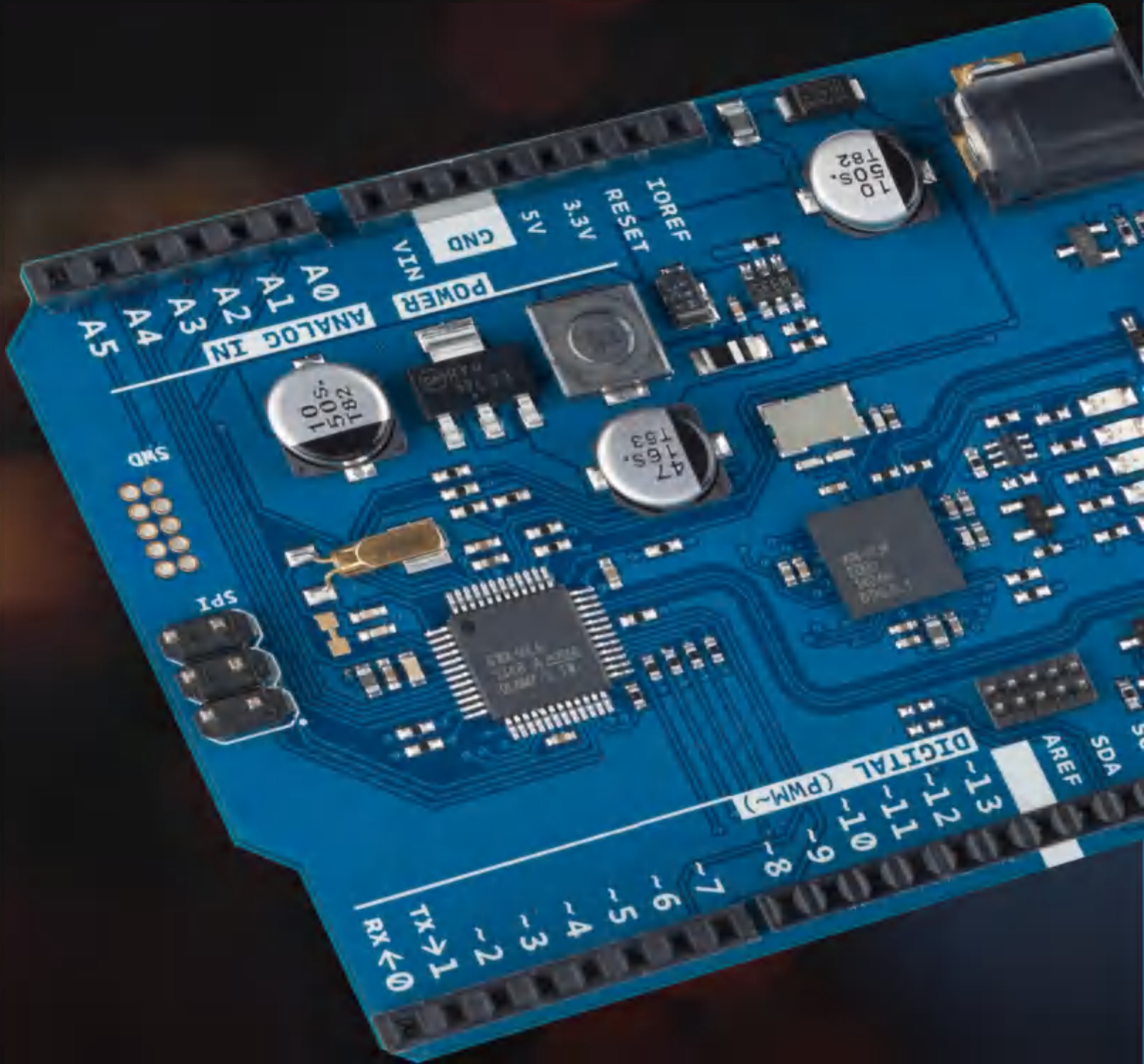


QLG is always considering for you,

Solutions to the common problems of solder paste.

QLG为您所想

锡膏常见问题解决方案



锡珠

在SMT生产过程中，大都会发现锡珠现象，为生产加工带来了诸多损失，深为广大客户所诟病。

强力锡膏着重解决锡珠现象。

强力锡膏所用锡膏配方工艺是经技术专家多年对生产工艺流程反复论证研究得出的，是理论研究和生产实践的一线结合。

强力锡膏所采用的锡粉粒度均匀适宜，精度高，纯度高，为减少锡粉的氧化反应，生产过程中，全程处于抽氧充氮的空间。

立碑

立碑在实际生产中是个常见的问题，其根本原因是元件两边的润湿力不平衡。强力锡膏，一直致力于改善立碑现象。

解决立碑的核心在于解决锡膏活性问题，锡膏活性来自配方里的助焊剂，强力锡膏中含有的助焊剂是专门配置生产的，采用国际最先进的活性封闭技术，确保锡膏的活性在产品焊接时发挥最大功效。

焊剂残留

焊剂残留也是困扰众多SMT生产商的一个大问题，强力锡膏，从根本上拒绝残留的产生。

助焊剂生产工艺缺陷、配方不当、品质低劣，是大多数残留问题产生的原因。强力焊锡出品的焊剂，来自科学的配方，严格的品控，更能与锡膏匹配，适用更实用，更加完美的发挥锡膏应有的产品品质。

锡膏发干现象

在实际生产中，很多时候，PCB板的印刷和焊接工序不是同时进行的，印刷好的PCB板极易出现发干的问题，这不仅会影响焊接的效果，还会造成很多返焊、补焊的工序，严重影响产品品质和生产效益。

强力锡膏，彻底解决易发干现象。

助焊剂的稳定性是决定锡膏是否容易发干的关键因素。强力锡膏采用当今世界最先进的锡膏助焊剂活性体系，即使在焊接温度高时强力锡膏同样具有强大活性以完成焊接，同时在室温时又能保持稳定。因此不但具有很强的活性，而且使用寿命长，不易发干。

Tin beads

In the production process of SMT, mostly appear tin beads phenomenon, which brought many losses for the production and processing, and was criticized by majority of customer. QLG solder paste is aim to solve the phenomenon of tin beads.

The formula technology of QLG solder paste was studied by the technologist who has been repeat studying the product process, is a combination of theoretical research and production practice.

The granularity of tin powder is smooth and suitable, high precision, high purity, in order to reduce the oxidation reaction of tin powder, in the product process, it is in a drawing oxygen and filling nitrogen space.

Tombstone

Tombstone is a common a problem in practical production, the root cause is the imbalance of the wetting force on both sides of the component. QLG solder paste has been committed to improve the tombstone phenomenon.

The central of solving the tombstone phenomenon is solving activity problem of solder paste.,activity of solder paste is from the soldering flux in Formula, the soldering flux in QLG solder paste is specialized produced, adopt the most advanced activity block technology in the world, make sure the activity of solder paste achieve maximum effectiveness when soldering products.

Flux residues

The residue of flux is also a big problem troubling many SMT manufacturer, and QLG solder paste, will fundamentally reject to come being residue.

There are some reasons of mostly residue problem, such as the defect production process of flux、inappropriate formula、inferior quality.Flux produced by QLG, which is from scientific formula, strict product control, and can be more matched with the solder paste, suitable and more practical, play a more perfectly products quality of solder paste.

Paste dry

In practical production, many times, the PCB printing and soldering process are not working at a same time, the printed PCB board is quite easy to occur a dry problem, it is not only affect the effect of soldering, and also will cause lots of processes of back soldering and repair soldering, seriously affect the quality of products and production efficiency.

QLG solder paste, which solve the dry phenomenon thoroughly.

The stability of solder paste is a key factor of deciding the solder paste is easy to be dry or not.QLG solder paste adopts the most advanced flux activity system, even at a high soldering temperature, QLG solder paste can complete the soldering because of the great activity, in addition, it can keep stability at room temperature. QLG solder paste not only has a strong activity, but also long service life, not easy to be dry.

LEAD-FREE SOLDER WIRE AND VARIETY

环保焊锡丝系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007
- RoHS



概述

本公司集多年焊料合金和固态焊剂的研究和实践经验，结合现代电子行业朝小型化与环保发展的方向和高可靠性产品的需求。研制开发出Sn/Cu、Sn/Ag、Sn/Sb、SnBi、Sn/Ag/Cu、Sn/Ag/Bi、Sn/Ag/In/Ce、Sn/Sb/Bi 等合金成份的无铅锡丝，从而帮助您顺利的进行无铅化制程。

- 自动焊锡丝
- 彩灯焊锡丝
- 不锈钢焊锡丝
- 免洗锡丝
- 实心锡丝
- 高温锡丝
- 低温锡丝
- 镀镍锡丝
- 可提供各种规格和各种锡合金含量供客户选择。

产品优点

- 焊点光亮、牢固。
- 润湿时间短，可焊性好。
- 焊锡时不会溅弹松香。
- 线内松香分布均匀、连续性好。
- 烙铁头浮渣少。
- 自动走线时锡丝不会缠结。
- 卷线整齐、美观、表面光亮。
- 无恶臭味、烟雾少、不含有毒害健康之挥发气体。

手工烙铁焊接工艺

- 烙铁尖端温度应为370°C~400°C。
- 为避免过多的热量输入，焊接动作要更快，可能需要对员工进行再培训。
- 烙铁头的使用寿命会降低。
- 烙铁功率一般推荐为50~80W，并具有良好的回温性能。

Lead-free solder wire and variety

Integrating the research and practical experience in producing the welding alloy and solid state flux for many years, combining miniaturization and environment protection development direction of modern electronic industry and demand of high reliability product, the company produces lead-free solder wire including Sn/Cu, Sn/Ag, Sn/Sb, Sn/Ag/Cu, Sn/Ag/Bi, Sn/Ag/In/Ce, Sn/Sb/Bi alloys, to be helpful for lead-free processing.

- Automatic welding solder wire
- Illumination solder wire
- Stainless steel solder wire
- No-clean solder wire
- Solid-cored solder wire
- High-temperature solder wire
- Low-temperature solder wire
- Nickel-plated solder wire
- Supply kinds of specifications and varieties of tin alloy contents for users.

Virtues of lead-free solder wire

- Solder joint is bright and firm.
- Short wetting time, fine weld ability.
- Don't splash the rosin during welding.
- Rosin in the wire is distributed evenly and shows fine continuity.
- Little dross of welding head.
- Solder wire can't be snarled when it performs routing automatically.
- Wire coiling appears trim, nice and polished.
- No smell, little smoke, without volatilizing gas harmful for healthy.

Lead-free solder wire soldering technology

- Hand Soldering and Rework.
- Iron tip temperature should be higher than 400°C.
- To avoid excess heat input, swifter action with the iron is required, and this implies significant operator retraining.
- Iron tip life will be shorter.

LEAD-FREE SOLDER BAR AND VARIETY

环保焊锡条系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007
- RoHS



环保焊锡条及种类

本公司积累多年焊锡条的研究和实践经验，结合现代电子行业的绿色环保发展方向和可靠性产品的需求，采用高纯度金属原料进行环保锡条生产。在严格的品管控制下，有效地控制了氧化程度及金属、非金属杂质含量，锡条表面均匀光滑，纯度极高，熔化后流动性好，润湿性极佳，焊点光亮，氧化渣物残渣极少发生。适用于高品质要求的各项波峰焊和手工焊，本公司不断研发，提供多种合金比例多种类型环保锡条供客户选择。

- 环保抗氧化锡条
- 环保高温锡条
- 环保低温锡条
- 环保含银锡条
- 其他特殊用途锡条

环保焊接材料导入要点

为帮助您顺利过渡到无铅化制程，在您准备导入无铅化装配生产时，强力公司向您提供无铅焊接材料导入要点，希望能对您的生产提供有价值的帮助：

- 请选用 Sn/Ag/Cu、Sn/Cu、Sn/Ag 系列合金，因为诸系列合金在无铅焊料中属最好的共晶合金。同时对铅的混入耐受性好，更适用于整体材料的逐步无铅化进程。
- 检查无铅设备的温控稳定性能，以确保焊接时的最小温差。
- 利用模板开孔设计氮气焊接环境、更高活性的助焊剂来解决无铅焊锡润湿能力弱的问题。
- 重视焊接后可靠性检查，包括电气性能和对接材料的应力、热疲劳、蠕变和机械振动破坏的检查。
- 确认线装产品的材料合金和耐热性与所用焊锡匹配。

Lead-free solder bar and variety

Integrating researching and practical experience in producing solder bars for many years, combining environment protection development direction of modern electronic industry and demands of reliability product, the company produces lead-free tin bars with high purity metal raw material. Under strict quality control, the company effectively control the impurity content of oxidizing metal and nonmetal, and the tin bar shows smooth surface, quite high purity, fine flowing after fusing, wonderful wettability, polished soldering spot, little oxidizing rubbish and so on. It is suitable for wave welding and hand welding that is required high quality, Thousand is land continues to research and develop, in order to supply lead-free solder bar of kinds of alloy scales and types for customers.

- Lead-free anti-oxidation tin bar
- Lead-free tin bar of high temperature
- Lead-free tin bar of low temperature
- Lead-free tin bar with silver
- Tin bars for other special applications

Guide points of lead-free welding

In order that you can smoothly perform lead-free process, QLG supplies some key points about using the lead-free solder before you use the lead-free assembly, we wish these key points can be helpful for your production. wish these key points can be helpful for your production:

- Please choose Sn/Ag/Cu, Sn/Cu, Sn/Ag alloys, because these alloys are the best eutectic alloy of lead-free solders, and can greatly withstand the lead interfusion, even, they are more suitable for step-by-step lead-free processing of whole material.
- Check the temperature-control stability of lead-free equipment, to make sure the lowest temperature difference during welding.
- Improve wetting ability of lead-free solder through taking use of die plate tapping equipment, nitrogen welding environment and higher active soft solder.
- After welding, please pay attention to checking the electric performance, stress of butt-welding material, thermal fatigue, creeping and damage for mechanical vibration.
- Make sure the material alloy and thermal resistance are matching with solder.

强力环保焊料合金种类供应形态及特征

Variety, supplying form and feature of qiangli solder alloy

编号 Number	合金成份 Alloy component (WT%)	熔点 Melting point (°C)	可供应产品形式 The form of available			环保焊料的特征 Features of lead-free solder		
			锡条 Solder bar	松香型 芯线 Rosin core wire	实心 锡线 Solid-core solder wire	抗拉强度 Tensile strength 100mm/min	扩展率 (%) Expansion rate	润湿性 (大气中) Wettability (in the air)
QLA300	Sn-3Ag	221-230	●	●	●	4.7Kgf/mm ²	33	良好Fine
QLA350	Sn-3.5Ag	221	●	●	●	4.7Kgf/mm ²	33	良好Fine
QLA400	Sn-4Ag	221-235	●	●	●	4.7Kgf/mm ²	33	良好Fine
QLC007	Sn-0.7Cu	227	●	●	●	3.3Kgf/mm ²	—	良好Fine
QLC010	Sn-1Cu	227-240	●	●	●	3.3Kgf/mm ²	—	良好Fine
QLC030	Sn-3Cu	227-320	●	●	●	3.3Kgf/mm ²	—	良好Fine
QLS955	Sn-5Sb	230-240	●	●	●	4.7Kgf/mm ²	38	良好Fine
QLB4258	Sn-58Bi	138	●		●	7.6Kgf/mm ²	33	良好Fine
QLA0307	Sn-0.3Ag-0.7Cu	210-230	●	●	●	5.3Kgf/mm ²	27	良好Fine
QLA305	Sn-3Ag-0.5Cu	217-220	●	●	●	5.3Kgf/mm ²	27	良好Fine
QLA405	Sn-4Ag-0.5Cu	217-223	●	●	●	5.3Kgf/mm ²	27	良好Fine
QL-100	Sn-100	232	●	●	●	1.9Kgf/mm ²	—	良好Fine
QL007N	Sn-0.7Cu-Ni	227-240	●	●	●	3.3Kgf/mm ²	—	良好Fine
QLDW180	Sn-Ag-In-Ce	180	●	●	●	—	—	良好Fine
QLCS	Sn-Ag-Cu-Sb	200-230	●	●	●	—	—	良好Fine

注:

表中绿色● 为我公司可供产品。本公司向您推荐QLC007\QLA305为理想的环保焊料。

环保锡条长期使用会使Cu积存过多，导致Cu浓度增大，影响焊接效果，需要定期在锡炉中加纯锡稀释。如果铜的含量≥1%时，建议更换炉中的焊锡。

Note:

Green ● in the table means the available products are produced by us. We recommend the ideal lead-free solder QLC007/QLA305 to you.

环保焊料的力学性能

Mechanical property of lead-free Solder

电子装联中钎焊接头(或称焊点)不仅起到电连接(传输电信号)的作用,同时起到机械连接的作用,因此焊料合金须具备足够的力学性能。

结论:绝大多数无铅焊料的弹性模量、拉伸强度、抗蠕变性能高于或相当Sn-Pb焊料,但延伸率(即韧性)相对较低。

Soldered joint for electronic assembling, which takes effect on electrical connecting (transmit electrical signal), also on mechanical connecting, hence, it fully proves that the solder alloy must contain enough-mechanical property.

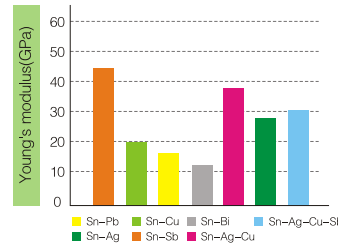
Consult: most of lead-free solders elastic modulus, tensile strength, anti-creep property are higher than or equal to those of Sn-Pb solder, however, the elongation rate (namely, toughness) is quite low.

环保焊料之合金选择

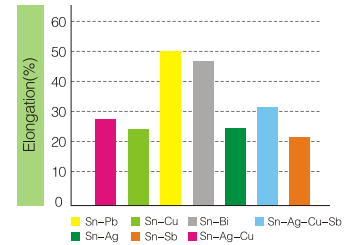
Select alloy for lead-free Solder

目前为止,环保焊料尚没有形成国际标准及国家标准,国内外已开发出的可供选择的合金种类众多,作为用户的电子产品制造商经常产生困惑。右列图表是近期对世界主要电子产品制造商的问卷调查结果,他们的选择可以作为您的参考依据。

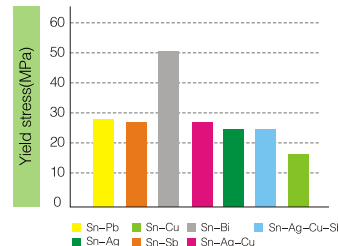
Up to now, the international standard and national standard on lead-free solder haven't been formed, but kinds of alloys having been developed at home and abroad are confused to manufacturers of electronic products, hence the following chart supplied by us is the recent questionnaire result of the world main manufacturers of main electronic products, their selections can be taken as reference to you.



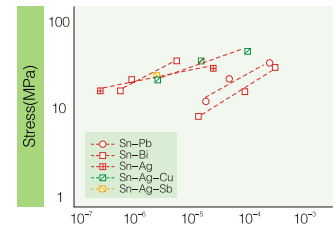
弹性模量 Elastic modulus



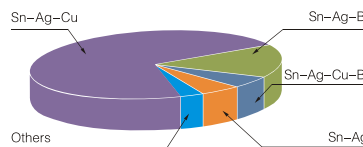
延伸率 Elongation rate



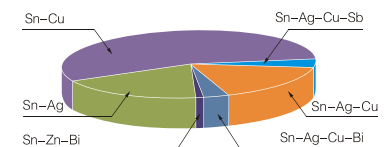
拉伸强度 Tensile strength



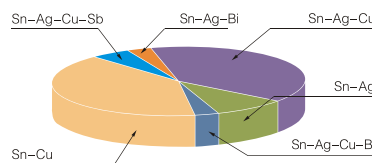
蠕变性能 Creep property



再流焊用无铅焊料(焊锡膏)
Lead-free solder for reflow soldering (solder paste)



手工烙铁焊用无铅焊料(焊锡丝)
Lead-free solder for manual soldering iron (solder wire)



波峰焊用无铅焊料(焊锡条)
Lead-free solder for wave soldering (solder bar)

SOLDERING TIN WIRE AND VARIETY

焊锡丝系列

焊锡丝种类

本公司采用高科技配方的助焊剂技术，全自动焊锡丝生产流水线，结合现代电子产品小型化及高精度发展需要。一直不断地投入相当多的时间与精力发展更高品质产品，经过多年不懈努力，已经开发了多种类型及各种含锡量和线径 $\Phi 0.3\text{mm} \sim \Phi 9.0\text{mm}$ 的焊锡丝供广大顾客选择。

其种类如下：

- 自动焊专用焊锡丝
- 彩灯焊锡丝
- 不锈钢焊锡丝
- 松香芯焊锡丝
- 免清洗焊锡丝
- 电容器专用焊锡丝
- 低温焊锡丝
- 高温焊锡丝
- 其它特殊用途焊锡丝

产品特点

- 焊点光亮，可靠；
- 焊接性能良好；
- 接时少飞溅，烟雾少，气味感觉轻松；
- 腐蚀性小；
- 焊后残留物少且色泽浅淡；
- 绝缘电阻高。

Soldering tin wire and variety

Adopted flux technique of high-tech producing directions, owned complete automatic soldering tin wire pipeline, and combined the demand of electron product miniaturization and precision, our company exert all the time and powers into developing product with high quality. For many years' uninterrupted endeavor, we succeed in developing various soldering tin wire product. Generally, the diameters of them are from $\Phi 0.3\text{mm} - \Phi 9.0\text{mm}$.

- Automatic welding solder wire
- Illumination solder wire
- Stainless steel solder wire
- Soldering tin wire type
- Colophony core soldering tin wire
- Soldering tin wire special for capacitor
- Low temperature soldering tin wire
- High temperature soldering tin wire
- Soldering tin wire for other particular applications

Product features:

Our company provides various specifications of soldering tin wire, different tin content and wire diameter from $\Phi 0.3\text{mm} - \Phi 9.0\text{mm}$ for the clients. The product has the advantages as follows:

- Safe brightness of soldering points;
- Fine soldering capability;
- Slight splash, smoke and smelling while soldering;
- Low corrosion;
- Small quantity of leftover and light colour after soldering;
- High insulation resistance.





自动焊焊锡丝

采用独特配方的助焊剂，结合现代电子产品小型化及高精度发展需要，开发出多种合金和线径的焊锡丝，能够满足自动焊接工艺中大规模生产的需要。兼容各品牌自动焊接机，适合机焊、拖焊及手工焊等工艺，润湿性优异，焊接及固化速度快，桥连、拉尖、烟雾少，可以有效抑制焊锡和助焊剂飞溅，残留可免清洗(特殊产品除外)。

松香芯焊锡丝

采用高品质松香配制而成，松香芯助焊剂分为R型(松香焊剂)、RMA型(弱活性松香焊剂)、RA型(活性松香树脂焊剂)共三种，该类产品的特点是焊接速度快、飞溅少、焊点光亮、用途广泛等特点，适应了现代电子工业飞速发展及焊接工艺需求，本公司备有各种含锡量和线径锡丝供广大顾客选择。

电容器专用焊锡丝

采用国际先进助焊剂配方生产的电容器专用焊锡丝是应用于电容器制造行业，电容器端面喷锌层及低熔点喷金料合金层上直接实现焊接的高活性焊锡丝，具有焊接速度快、熔解快、光亮、焊点牢固等特点。

不锈钢焊锡丝

采用独特配方的助焊剂，结合现代产品多样化及高精度发展需要，开发出不锈钢焊锡丝，能够满足304、316等各种不锈钢材质的焊接需要。兼容各品牌自动焊接机，适合机焊、拖焊、中频及手工焊等工艺焊接，润湿性优异，焊接及固化适中，焊后残留需清洗(焊剂禁止与皮肤直接接触)。

Automatic soldering solder wire

Adopt the special formula of solder flux, and combined with modern electronic products miniaturization and high precision development needs, developed a variety of alloy and wire diameter solder wire, can meet the needs of large-scale production in automatic soldering process. Compatible with all brands of automatic soldering machine, suitable for machine soldering, drag soldering and manual soldering process, excellent wettability, fast soldering and freezing speed, Bridge connection, tipping, less smoke, can effectively inhibit the solder and flux spatter, residual can be free cleaning (except the special products).

Soldering tin wire type

High quality rosin is selected to make this product. There are three kinds of rosin cores. R type (low activity), RAM type (medium active) and RA type (highly active). This series of products are characterized speedy soldering, less spark and solder joint with brightness and cleanness, and other technical properties which could totally match the require means posed by modern-developing technique. And we provide various kinds of alloy compositions and wire diameters for your choice.

Solder wires special for capacitors

Solder wires special for capacitor, with characteristics of speedy soldering, fast melt, bright and clean solder joint, reliability, are highly active ones made by adopting advanced international fluxes recipe and mails used in capacitors manufacturing by which dire welding can be conducted on the hard-to-solder media such as zinc alloy and soon.

Stainless steel solder wire

Adopt the special formula of solder flux, and Combined with modern product diversification and high precision development needs, developed stainless steel solder wire, be able to meet the requirements of 304, 316 and other stainless steel soldering requirement. Compatible with all brands of automatic soldering machine, suitable for machine soldering, drag soldering and manual soldering process, excellent wettability, moderate soldering and freezing speed, need to clean the residual after soldering. (prohibit solder Flux directly contact with skin)

SOLDERING TIN BAR AND VARIETY

焊锡条系列

ISO9001: 2008 •
ISO14001: 2004 •
OHSAS18001: 2007 •



焊锡条系列

Soldering tin bar series

概述

本公司生产的焊锡条采用高纯度金属原料所精制而成，在严格的制程监督及严谨品管条件下，经科学合理的工艺配置，真空脱氧处理有效控制氧化物，每批焊锡条表现均匀，熔化后流动性好、焊点光亮、氧化物残渣极少，适用于电子产品的波峰焊、手工浸焊。针对电子行业的高速发展，为配合不同的焊接要求并适应多种作业方式，本公司不断研发，提供多种类型锡条供客户选择：

- 抗氧化焊锡条；
- 含银焊锡条；
- 低温焊锡条；
- 高温焊锡条；
- 其它用途焊锡条；

高温焊锡条

运用独特的提纯合金处理工艺，有效除去金属原料中天然形成的氧化物；结合独有的抗氧化工艺进一步提高锡条的抗氧化能力。

在450°C以下的焊接温度，焊锡表面如镜面光亮，焊接时间短，扩展率好于一般焊锡条，由于抗氧化剂的加入，使出锡渣量仅为普通焊锡条的1/5左右，焊点光亮美观、可靠，适用于电子产品的波峰焊和手工浸焊。

常用焊锡条牌号为高温Sn60%、高温Sn/63%。

低温焊锡条

本公司研制了70°C–180°C各种低熔点易熔合金材料产品，被广泛用于：火警报警安全装置、避雷保护器件、防雷器保护器件、空调安全保护器、示温材料、机械加工的填料等行业中，产品有丝条两种。

Soldering tin bar and variety

Our solder bar is made from high purity metal. By means of strict quality control and vacuum deoxidization treatment, the oxide and metallic and nonmetallic impurities are effectively minimized. The solder bar is with uniform and glazed surface, good wetting and spreading ability after molten, bright joint and minimum oxide residue after soldering. Our product is suitable for wave and handwork soldering with high quality requirement.

To satisfy different soldering and processing requirements, we provide various kinds of solder bar and thus help our customers to keep up with the rapid development in the electronic industry.

- Oxidation Solder Bar;
- Silver Based Solder Bar;
- Low Melting Temperature Solder Bar;
- High Melting Temperature Solder Bar;
- Other solder bar for articular purposes.

Oxidation solder bar

Suitable for soldering temperature up to 450°C, the solder has a mirror-like surface. Short welding time and higher spreading ratio than the normal solder. Due to the addition of anti-oxidant, the amount of solder dross is only 1/5 of that in the case of common solder bar, and bright solder joint can be obtained.

This product is suitable for wave and handwork soldering.

Frequently-used Grades of solder bar are Sn60%、Sn63%.

Low melting temperature solder bar

We have researched and produced new varieties of low-melting-point, fast-melt alloy materials—one is Bar-type, another Wire-type which are widely used in fields such as alarm security devices, lighting-proof protective appliances, air-conditioner security warning device, temperature display materials and filled composites during mechanical processing.

焊锡条用途参考表

Reference table for function of soldering tin

型号 Model	成份 Ingredient	熔点℃ Melting point	工作温度℃ Working temperature	密度g/cm ³ Density(g/cm ³)	主要用途 Main function
63%	63Sn/37Pb	183	240-260	8.4	高抗氧化系列，适合波峰焊焊接，使用于电子工业、通讯、航空等产品的焊接。 High antioxidant series, suitable for wave soldering, be use in the electronics industry, telecommunications, aviation and other welding products.
60%	60Sn/40Pb	183-190	250-270	8.5	
A#	55Sn/45Pb	183-203	260-280	8.7	
1#	50Sn/50Pb	183-215	280-320	8.9	高抗氧化系列，适合手工浸焊，使用于一般电子产品、家电、电器仪表、一般五金工具的焊接。 Applicable for welding of general electric products, household appliance, electric instrument, automobile electric appliance, general hardware electric appliance and so on.
2#	45Sn/55Pb	183-221	280-330	9.1	
3#	40Sn/60Pb	185-235	300-340	9.3	
4#	35Sn/65Pb	185-245	300-350	9.5	普通抗氧化系列，使用于电器、一般五金机械、机器、汽车水箱、电缆接头的焊接。 Applicable for welding of general electronic and electric appliances, general machinery, machine, automobile water tank, lamp bulb, cable joint and so on.
5#	30Sn/70Pb	185-255	330-360	9.7	
6#	25Sn/75Pb	185-267	330-370	9.9	
7#	20Sn/80Pb	185-279	350-380	10.2	

注: 上面所说的工作温度为正常情况下波峰焊的工作温度，具体工作温度要看实际生产的工艺要求而定。

Notes: The temperature mentioned above is a working temperature of wave soldering under normal condition, the specific working temperature depends on the actual production process requirements.

NO-CLEAN FLUX SERIES

助焊剂系列

- ISO9001: 2008
- ISO14001: 2004
- OHSAS18001: 2007
- RoHS



概述

本公司生产的免清洗助焊剂采用先进生产工艺及技术，在严格的品质管理下生产适用于喷雾或发泡波峰焊及浸焊，焊后板面清洁，残留低、焊点光亮、无腐蚀、焊接性能好、气味感觉轻松，适于热风整平线路板，裸铜线路板，双面板，多层板及贴插混装线路板的焊接。

依据标准SJ/T11273-2002《免清洗液态助焊剂》。

技术标准

外观: 无色至淡黄

比重(20°C): 0.808 ± 0.005

扩展率: ≥ 86

腐蚀性: 合格

绝缘电阻 $\geq 1.0 \times 10^{12}$

主要用途

主要适用于电子行业、计算机、家用电器、通讯等电子产品的波峰焊，手工浸焊。

强力助焊剂具有各种系列多种型号产品：

- 免清洗助焊剂；
- 松香型助焊剂；
- 热风整平助焊剂；
- 特种助焊剂。

强力助焊剂用于波峰焊接时条件：

- 焊接温度: 锡炉为240-260°C；
- 预热温度: 80-120°C；
- 助焊剂涂覆量: 1000-1500微克/平方英寸；
- 传送带速度: 1.0-2.0m/min。

No-clean flux series

The no-clean flux manufactured by our company, which is adopted by advanced manufacturing techniques and strict quality control, applies to spray type froth wave crest soldering and immersed soldering. It has the advantages of clear panel, low rudimental, bright soldering point, no corrosion, good soldering property, and comfortable smelling after soldering. It is suitable for soldering of heat wind trimness wiring board, bare copper wiring board, double-surface board, multi-layer board, and paste & insert combination wiring board. It complies with CSJ/T11273-2002 standard, no-clean liquid flux.

Technique standard

Appearance: achromatous

Proportion(20°C): 0.808 ± 0.005

Extension rate: ≥ 86

Anti-corrosion: eligible

Insulated resistance $\geq 1.0 \times 10^{12}$

Main purpose

It mainly applies to the wave crest soldering, manual immersed soldering of electron products in electron industry computer, and household electrical communication

Qiangli brand flux has many types of serial specifications:

- No clean flux,
- Colophony type flux,
- Heat wind trimness flux,
- Special flux.

The conditions of QLG brand flux apply to wave crest soldering:

- Soldering temperature: win furnace is 240-260°C;
- Warm-up temperature: 80°C-120°C;
- Flux coated capacity: 1000-1500microgramme/square inch;
- Assembly line speed: 1.0-2.0 m/min.

常用助焊剂的相关说明

Instructions for usual soldering flux

概述

广泛用于电子、电信、计算机等行业，可用于计算机主板系列及外设、程控交换机及通讯类仪器仪表、电源模块、家电类产品。

该系列产品可用于波峰焊或手浸焊等焊接方式。

该系列产品主要成分为低碳醇类溶剂、活性剂、助溶剂、稳定剂、阻燃剂

波峰焊锡炉建议参数

预热温度: 90°C–100°C (板面实际温度);

锡炉温度: 250°C ± 5°C; 送板速度: 1.1–1.4M/MIN;

气刀的角度: 10°–45°; 倾角: 5.0–6.5度;

手动炉浸锡建议参数

- 将线路板或焊接元件轻轻浸入助焊剂表面蘸少许，流平洗净，最好能有封闭式热体预热，浸入锡槽3–5秒;
- 锡炉温度: 255°C ± 5°C;
- 焊锡炉上应有通风装置;
- 如用于发泡装置，发泡棒的孔径应在0.02MM以下，焊剂表面要高于发泡棒1英寸以上;

注意事项

- 合理调整波峰焊机风刀及 PCB 上高温胶纸粘牢固性，以防焊接或预热时火灾危害;
- 严禁与其他类助焊剂、稀释剂混用;
- 对于氧化严重的线路板或引线管脚建议处理后，再焊接。连续使用一周时建议清洗槽罐并更换新产品;
- 焊接系统应有排风设备、焊接工位、清洗工位应有通风设备。

储存方法

本品属易燃品，应密闭于远离火源、干燥通风处，贮存温度不宜超过40°C。

包装规格

标准产品: 5升、10升、20升、200升桶包装

其他包装方式: 按双方约定方式

Applicable range

This soldering flux is widely used for computer mother-board series, peripheral equipment, SPC exchanges, communicating instruments & meters, power modules and household appliances in such industries as electronic, telecom, computer, etc. The products may be suitable for wave soldering or hand dip soldering.

Wave soldering tin furnace

Preheating temp.: 90°C–100°C (plate surface actual temp.);

Tin furnace temp.: 250°C ± 5°C;

Angle of air blade: 10°–45°;

Plate feed speed: 1.1–1.4M/MIN;

Angle of inclination: 5.0–6.5 degree

Hand dip soldering tin furnace

- Slightly dip the circuit board or welding element into little soldering flux and the soldering flux flows over them evenly and thoroughly, it is the best that here is an enclosed heating element to preheat them, and put them into the tin tank for 3–5s;
- Tin furnace temp.: 255°C ± 5°C;
- The dip-soldering tin furnace should be mounted with ventilation installation.
- If it is used for foaming device, the hole diameter of foaming bar should be less than 0.02MM, and the surface of flux should be higher than 1 inch of foaming bar;

Attentions

- Reasonably adjust the viscosity and firmness of high-temperature gummed paper on crest welder air blade and PCB, to prevent the fire during welding or preheating;
- Never mix it with other soldering flux and diluent; You had better process the circuit board or lead pin that is oxidized serious, then weld;
- You had better clean the tank if it is used lasting one week, and change into the new products;
- The welding system should be provided with exhaust equipment, in addition, the welding position and cleaning position should be provided with ventilation equipment;

Main component:

Low-carbon alcohols solvent, activating agent, solubility promoter, stabilizing agent, fire retardant.

Storage:

This product is a kind of the combustible, should be closed in a dry and ventilated place where is far from the source of ignition and the storage temperature should not exceed 40°C.

Packing spec.:

Standard products: packed with barrels of 5L, 10L, 20L or 200L

Other packing ways: according to both parties' agreement.

其它化工产品 Other chemicals

稀释剂

选择正确的稀释剂以降低助焊剂的固体含量或补充挥发掉的溶剂，才能确保助焊剂维持在最佳效能。

清洗剂

本公司的清洗剂为对臭氧破坏最少之清洗剂。用以清除松香或松脂残余物及油渍、脂类，适用于蒸汽脱脂无法完全清洗或寻求更低廉溶剂成本之场合中。可以刷洗或机洗方式为之，但需有足量的溶剂清洗。其低沸点及少臭味之优点使其尤适用于可回收式连续清洗方式。

清洗剂应用

适用于刷洗、机洗，特别是超声波清洗能十分有效地发挥其性能；

清洗温度可采用常温清洗，亦可适当加温；

清洗时间应根据具体情况而定；

由于挥发速度中等，一般PCB清洗后干燥时间约为十秒至两分钟；

清洗剂经反复使用后，清洗能力下降。使用中应注意及时更换。

抗氧化粉

本品添加于自动波峰焊锡炉中，增强熔融焊锡的抗氧化性，大大减少锡渣的产生。

Thinner

To maximize the flux capability, select a suitable thinner to lower the solid content of the flux of reinforce the vaporized solvent.

Cleaner

Our cleaners (solvents used to clean the flux residue) have little degrading effect on the ozone layer. They are used to clean rosin or resin residue, oil or fat stains. They are suitable to assist the steam cleaning process for a completely degreasing operation or wherever low cost cleaning process is desired. With sufficient solvent, both soaking in and spraying on methods can be applied. The advantages of low boiling point and little uncomfortable odor make it possible to use them repeatedly.

Application of the cleaner

They are suitable for brush cleaning or machine cleaning, especially for ultrasonic cleaning in which they are most effective;

Can be used under room temperature or proper higher temperature;

The cleaning time is dependent on the actual conditions;

Due to a medium evaporation speed, usually it will take tens of seconds to 2 minutes to dry off the PCB after cleaning;

The cleaning ability will degrade after repeating application, pay attention to replace the cleaner in time.

Antioxidant powder

Add this product into the molten solder pot for wave soldering, it can make the solder anti-oxidation and reduce the dross dramatically.

Qiangli Lead-free solder

为电子焊接技术提供整体解决方案!

☞ www.qlg.net.cn



强力化学品销售(选购)指南

Sales manual of qiangli chemicals

类 型	适用工艺	规格型号	产品特点				适用范围及性能
			颜色	固含量 %	活性	残留	
QL-N99 系列助焊剂	喷雾 浸焊 发泡	N99	无色至 淡黄	≤2	中	少	环保, 可焊性好, 焊后残留低, 波峰焊效果尤佳
		N99-1	无色至 淡黄	≤3	中	少	环保, 可焊性好, 焊后残留低, 波峰焊效果尤佳
		N99-1N	无色至 淡黄	≤3	中	少	环保, 可焊接镀镍产品
		N995	无色至 淡黄	≤4.5	中	少	焊接有较高要求的线路板
	喷雾 浸焊	N996	无色至 淡黄	≤4	高	少	光伏行业专用, 效果佳
		N998	无色至 淡黄	≤5	中	少	焊接有较高要求的线路板
QL-F120 系列助焊剂	喷雾 浸焊 发泡	F1201	无色至 淡黄	≤3	弱	少	可焊性好, 焊后残留低
		F1202	无色至 淡黄	≤4	中	少	性价比高, 上锡快
QL-290	喷雾 浸焊	290	无色至 淡黄	≤3	中	少	活性较强, 可适用于镀锌、镀镍件的焊接
QL-F380	特种	F380	无色	/	极高	少	焊接不锈钢、或其他合金件, 焊后需清洗
QL-01	特种	01	无色	/	极高	少	铅酸蓄电池行业专用, 效果极佳
QL-C700 系列洗板水	擦洗 浸洗 机洗	C7001	无色	/	/	/	适用于PCB上焊膏、助焊剂的残留, 可擦洗、浸洗、超声液相或汽相清洗, 不适用加热清洗
		C7002	无色	/	/	/	
		C7003	无色	/	/	/	
锡渣还原剂	锡炉	H018	淡黄色	/	/	/	能够很好地还原锡炉使用过程中产生的锡渣
抗氧化粉	锡炉	F200	白色 粉末	/	/	/	能够很好地预防焊锡在使用过程中的氧化, 同时也可以还原锡渣中的焊锡

本公司拥有强大的研发团队及与国内权威学术机构的合作经验, 可为国内外客户提供OEM、ODM等多种合作方式。

特种焊锡系列

Special solder serie

阳极棒、锡球

公司提供纯锡电镀阳极棒、锡球产品(Sn>99.9%)，选用高纯度低杂点的优质原料，通过严格的生产工艺控制以及品质检验，具有纯度高、氧化少、低损耗、表面光洁等特点，可定做各种不同形状产品。

锡箔

该产品适用于水箱、散热器、浪涌保护器等部件的焊接。产品规格: 10~140mm 厚 \geq 0.04mm

低温焊锡丝、焊锡条

低温焊锡广泛应用于浪涌保护器、蒸汽、消防、火灾报警等装置中的保险丝、熔断器等热敏组件。
产品熔点: 70~160OC

特种合金产品

公司长期与各科研院所单位进行技术合作，可根据客户要求开发特点产品所使用的不同合金成分，不同形状的特种合金。如：巴氏合金、锡基合金等。

Anode bar or board

QLG supplies pure tin electroplating anode rod (Sn>99.9%). With high purity raw material, strict manufacturing process control and quality inspection, the anode bar is characterized by high purity, low oxidation, low loss, smooth and shine surface. And several cross-section shapes of anode bars are available.

Tin foil

The tin foil is used for soldering the parts of Water tank, radiator, surge protectors. Products specification: 10~140mm thick \geq 0.04mm

Low-temperature solder wire, solder bar

Low-temperature solder is widely used in fuses, thermal fuses and other components of surge protector, steam, fire, fire alarm equipment.

Product temperature: 70~160°C

Specialty alloy products

The company built the Long-term technological cooperation with various research institutes, according to the customers' requirements to develop of different alloy composition for the product of special characteristics, different shapes of the special Alloy.

Such as: Babbit alloy, tin-based alloy.



阳极棒、锡球



低温焊锡丝、焊锡条



巴氏合金、锡基合金



锡箔

感恩 THANKS

你们的信赖，
是我们前行的最大动力！

你们的支持，
是我们一路最大的收获！

Your trust,
Is our biggest forward momentum!

Your support,
Is our biggest harvest along the way!

以下是我公司服务过的部分品牌!
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