

Technical data

Post-flux for printed circuit boards mounted with chip parts for Pb-free soldering

LEAD FREERITE LCF-030

1. Introduction

LEAD FREERITE LCF-030 is a mat type flux developed for automatic soldering using low silver Pb-free solders and is applicable to Pb-free soldering process.

2. Features

- This flux is a mat and low residue type flux.
- This flux residue decreases in comparison with the our conventional products.
- The product will solve troubles in soldering such as non-wetting and bridge defect in the soldering of printed circuit boards mounted with chip parts and discreet parts.
- An excellent solderability can be obtained in low silver based Pb-free solder.
- Uniform flux coating can be achieved by foaming or spraying.

3. Characteristics of Product

Characteristics of LEAD FREERITE LCF-030 are shown in Table 1

Table 1 - Characteristics of LEAD FREERITE LCF-030

Items	Characteristics	Test methods
Appearance	Light yellow and transparent liquid	Visual examination
Color number	2	JIS Z 3197 (1999)
Specific gravity	0.808	JIS Z 3197 (1999)
Viscosity (mPa·s)	3.7	JIS Z 3197 (1999)
Solid content (%)	9	JIS Z 3197 (1999)
Chlorine content (%)	0.05	JIS Z 3197 (1999)
Solder spread (%)	Sn/Ag3.0 /Cu0.5	75
	Sn/Ag0.3 /Cu0.7	75
	Sn/Pb37	91
Copper plate corrosion	Passing	JIS Z 3197 (1999)

4. Reliability

4.1 Insulation Resistance Test

Shown in Fig.1 is the stability of insulation resistance as measured in accordance with JIS Z 3197(1999). It shows no secular decline in insulation resistance, so a good insulation film.

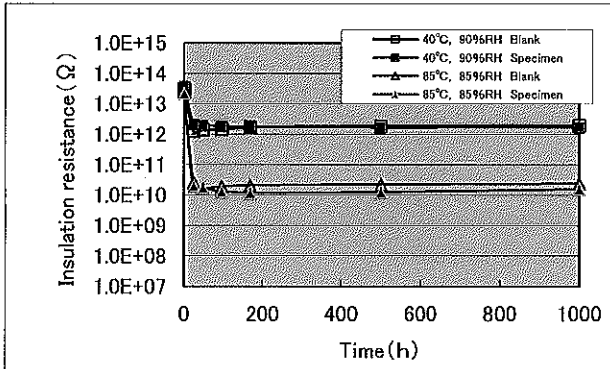


Fig.1 -Electric insulation resistance

Boards: JIS comb type electrode boards, type 2, coated with flux and flow soldered have been used.

Measurement: Inside the tank, DC100V

4.2 Migration Test

Results of migration test as measured in accordance with JIS Z 3197(1999) are shown in Fig.2. There is no decline in insulation resistance, nor the occurrence of migration or corrosion.

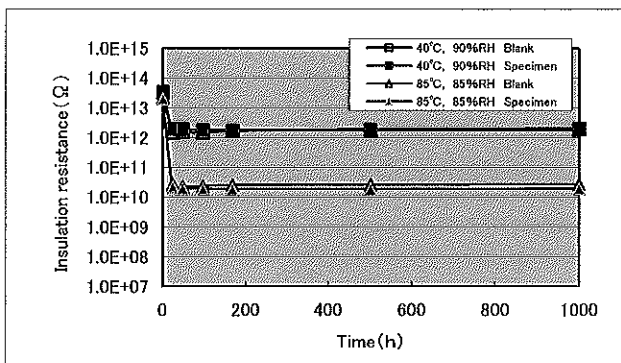


Fig.2 - Migration test

Boards: JIS comb type electrode boards, type 2, coated with flux and flow soldered have been used.

Applied voltage: DC 50V

Measurement: Inside the tank, DC100V

5. Quality Guarantee Period

The quality guarantee period is 180 days after manufacture if stored in sealed containers at temperature from 10 to 30°C.

6. Precautions

- Use the specified thinner #4520 for the adjustment of flux concentration.
- When the flux becomes dense, dilute it with the Thinner #4520 by referring to Fig.3,4.
- For the container to put in the flux, use those clean and made of plastics like polyethylene or stainless steel. Never mix with other type of flux.
- Apply the flux by foaming or spraying. Then, uniform coating can be achieved with little going back of flux.
- After the application of flux, be sure to perform preliminary heating by pre-heater to enhance solderability. This is required to prevent the flux from unnecessarily rising toward the parts of circuit boards and to alleviate heat shock to chip parts.
- Set the conveyer speed in automatic soldering at 1.0~1.5 m/min. Furthermore, carefully consider other soldering conditions (such as solder temperature, soldering time and the height of solder jet waves) to secure the best solderability.
- Please examine the washing condition and washing enough beforehand when you wash the flux residue though the flux residue can be washed by alcohol (ethanol and isopropanol), aromatic hydrocarbon (toluene and xylene), and ester kinds (ethyl acetate), etc.
- Physiological interaction varies by individuals. As a prudent policy, therefore, care, should be exercised not to inhale gas of fume of solvent emitted during operations and not to have your skin exposed (especially mucous membrane and other parts vulnerable to stimuli) for a long time.
- The organic solvent is included.
- LCF-030 is flammable.

The physical chemistry-character among written contents etc. is not a guarantee value. The evaluation of danger and noxiousness is based and makes material, information, and the data, etc. which can be acquired now. However, it is not because all material was covered and note handling enough, please. As for notes, it is the one intended for usual handling. Special handling is not assumed. Please observe the restriction of related various regulations, and use after executing suitable safety measures for the usage. Before using it in your company, it is related with process conditions or reliability. I ask you to have sufficient examination surely performed.

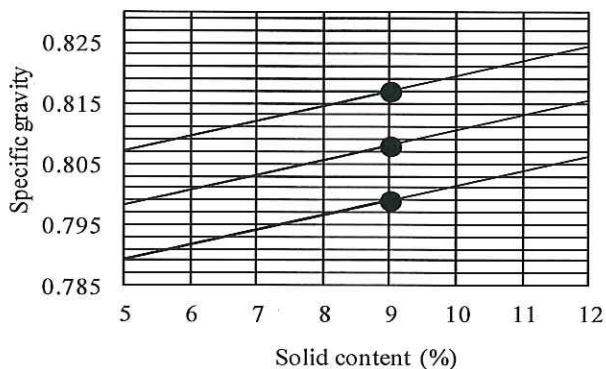


Fig.3 Relation between specific gravity of LCF-030 and its solid content.

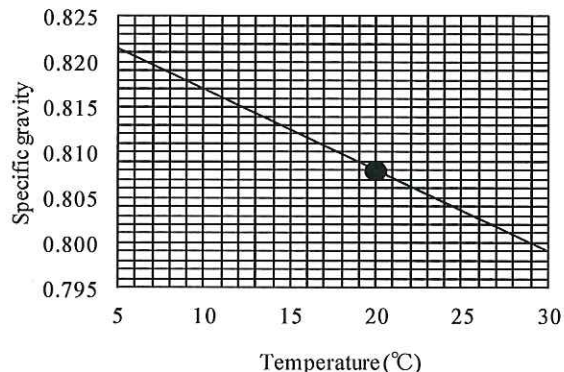


Fig.4 Relation between specific gravity of LCF-030 and its temperature.

TAMURA TAMURA CORPORATION

<http://www.tamura-ss.co.jp/>

Head Office: 1-19-43, Higashi-Oizumi, Nerima-ku, Tokyo, 178-8511, Japan

Electronic Chemicals Business Sector

Production Base

Iruma Factory: 16-2, Sayamagahara, Iruma-shi, Saitama, 358-8501, Japan

Phone: +81-4-2934-6134 Fax: +81-4-2935-1427

Kodama Factory: 200-2, Motohara, Kamikawa-cho, Kodama-gun, Saitama, 367-0241, Japan

Phone: +81-495-77-3611 Fax: +81-495-77-4468

SHANGHAI XIANGLE TAMURA ELECTRO CHEMICAL INDUSTRY CO., LTD.

555, Xiangjiang Road, Nanxiang, Jiading, Shanghai 201802, China

Phone: +86-21-3919-9246 Fax: +86-21-3919-9249

TAMURA KAKEN(DONGGUAN) LTD.

The Scientific & Technologic Industry Zone, Shijie Town, Dongguan City, Guangdong Province, China

Phone: +86-769-8630-5888 Fax: +86-769-8630-6888

TAMURA CHEMICAL KOREA CO., LTD.

58-3, Shingunji-dong, Ansung-city, Kyungki-do, Korea

Phone: +82-31-672-1154 Fax: +82-31-674-4427

TAMURA KAKEN TECH CO., LTD.

5F-3, No.181, Fusing N. Rd., Songshan District, Taipei City 105, Taiwan

Phone: +886-2-8712-6023 Fax: +886-2-8712-7672

TAMURA CORPORATION SINGAPORE PTE. LTD.

NO.2, Toh Guan Road East #02-02 Singapore 608837

Phone: +65-6779-3100 Fax: +65-6778-2186

TAMURA CORPORATION (THAILAND) CO., LTD.

1858/120 Nation Tower 27th Floor, Bangna-Trad Road, Bangna Sub district, Bangna District, Bangkok 10260, Thailand

Phone: +66-2316-2270 Fax: +66-2316-2274

TAMURA KAKEN (U.K.) LTD.

Caswell Road, Brackmills, Northampton NN4 7PW, U.K.

Phone: +44-1604-768888 Fax: +44-1604-768808

TAMURA KAKEN CORP., USA

100 North Winchester Boulevard Suite 330. Santa Clara, CA 95050 U.S.A.

Phone: +1-408-246-1708 Fax: +1-408-246-0717

Dealer: