

# Solder Paste & Epoxy Solder Paste Applications

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# I . Company Overview

# Company Overview

## 1. Company Overview

- Biz area : Interconnection mat'l for ass'y & packaging
- Established : Jan. 19<sup>th</sup> , 2012
- Capital : USD \$ 650,000
- Address
  - Head office : 10-5, 339 Expo-ro Yuseong-gu, Daejeon
  - Factory : 566-22 Bookyang-ri, Whasung, Gyeonggi-do
  - China : 广东省惠州市博罗县石湾镇石湾大道49-51号2楼
- Intellectual property
  - Published : 8 , Pending : 3
- Homepage : www.hojeonable.com

## 2. Organization



\*ETRI technical support

## 3. Company History

- 2012** - Established (ETRI spin off company)
- 2013** - Developed Low-temp ESP
  - Established Pilot line
- 2014** - Developed High-temp ESP
  - Developed ESP for FCCL
- 2015** - Mass production of Low-temp ESP
  - Mass production of ESP for FCCL
- 2016** - Investment from Dae-duck Venture Partners
  - Mass production of High-temp ESP
- 2017** - Established Chinese Corp in Huizhou
  - Investment from Won-Ik Venture Partners
  - Supplied ESP to Seoul Semi/ Lumens (Samsung - QLED)
  - Supplied ESP to BOE
- 2018** - Adopted ESP to Micro LED Display China(BOE), Taiwan(Harvatek)
  - Awarded "Jang Young-Shil" Prize (Korean Greatest Inventor)
- 2019** - Awarded "Prime Minister's Prize"
  - Supplied BLU material for Smart phone
  - JDA with Korean Semi Manufacturer

# II. Products

# What is Solder Paste?

## Solder paste for joining electronic parts?

Solder paste is a solder used to join PCB and various components used in electronic assembly. It is a material applied for assembling parts in SMT process.

**Solder Paste**



**Flux for Paste**



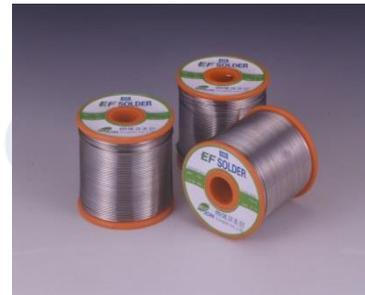
**Solder Bar**



**Solder Flux**



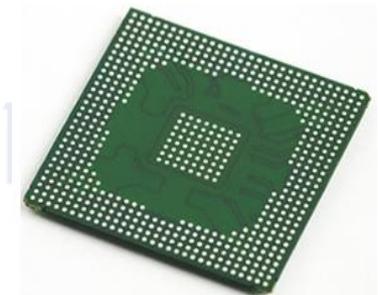
**Solder Wire**



**Flux for Wire**



**Solder ball for BGA**



**Flux for BGA**



# Application of Solder Paste

## 1) Essential materials for all electronics

### 1. Home Appliances



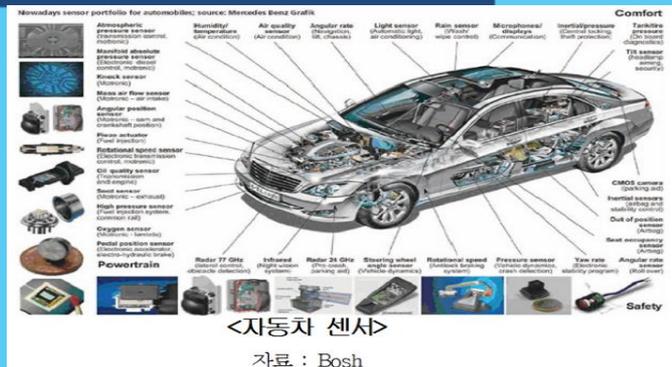
### 2. LED



### 3. Flexible Products



### 4. Automotive Electronics



# Manufacturing Process Flow

- 1) Technology-intensive material
- 2) Simple process (Flux manufacturing → metal powder mixing)
- 3) Low production investment and manufacturing cost

[EFP manufacturing]



① Measure raw mat'l



② Flux melting



③ Flux synthesis



④ Flux milling

[ESP manufacturing]



⑤ Measure(Flux/Solder)



⑥ Mixing(Flux + Powder)



⑦ Inspection



⑧ Shipping

# Business Status

## Mass Production

Product 1 Lumens (BLU for "S"), WooriLED(Light), Inteled (mini BLU)

Product 2 Seoul Semi (Street lamp), LG Innotek, Chinese customers

Product 3 BOE (Line light source), Havertek, Chongqing(mini LED BLU)

## Evaluation

LED Application Mini/Micro LED Market(supplied samples to Korean Display makers)

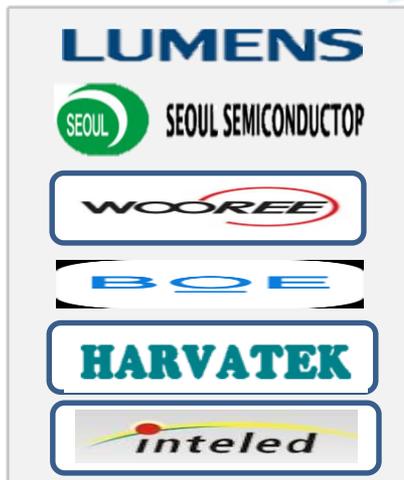
Semi Application SK-hynix (Flash memory), Samsung Electronics, LG Innotek (Automotive)

( Mass Production )

( Evaluation - Korea )

( Evaluation -Taiwan )

( Evaluation - China )



# Applied Products & Video (CES 2019)

( Mini LED display )

CES 2019 show, size : 133 inch, Signage



Samsung Electronics - QLED TV



CES 2019 show, Curved monitor of Games



Seoul Semi - High efficient Tunnel Lamp



# III. Business Plan

# Market

## 1. Market Size

- USD \$3B (assumption)
- CAGR 5%

## 2. Business Environment

- High-end electronic products – Japanese and US companies
- Low-end electronic products – China and Taiwan companies
- **Hojeon Solder Paste has similar quality as Japanese Senju products**
- **Epoxy Solder Paste is the world's first commercialized material**

## 3. Business Outlook

- Price competition (home appliances, smartphones, displays, semiconductors)
- Global factories are moving overseas due to rising labor cost in China
- Hojeon has business opportunity in Korea and Southeast Asia

# Business Strategy

- 1) Approach three steps from raw material export to manufacturing in local site
- 2) Select partner company and export semi-finished products and technology transfer
- 3) Continuous technical support

	Hojeon (Korea)	xx Co. (Partner)	Product
Step 1	1) Export semi-finished flux 2) Tech transfer (mixing)	1) Subdivision 2) Mixing processing	1) Flux for wave soldering 2) Solder wire/bar
Step 2	1) Tech transfer (manufacturing tech of semi-finished flux)	1) Setup production line(flux) 2) Engineer	1) Solder paste for SMT
Step 3	1) Tech transfer (manufacturing tech of solder paste)	1) Setup production line(solder paste)	1) Solder paste for Semiconductor
Step 4	1) Tech transfer (manufacturing tech of ESP)	1) Setup production line(ESP)	1) Joining material for high-end application
Step 5	1) Technical support		

## Process flow for Solder Paste



Solder alloy



솔더 분말 제조



Flux 제조



솔더페이스트 제조

# Thank You!



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