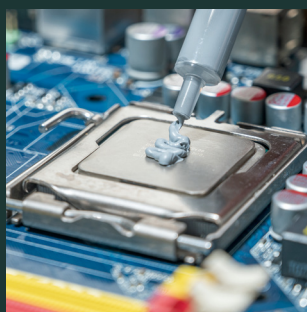


OCS**materials**

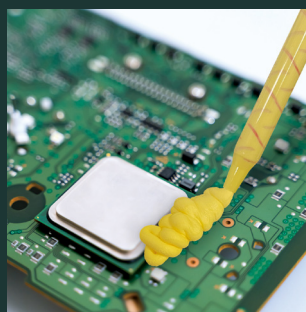
OCSmaterials uses its own synthesis and formulation technologies to research and produce the highest quality thermal interface materials and flame retardant products.



Grease



Encapsulants



Gap Filler



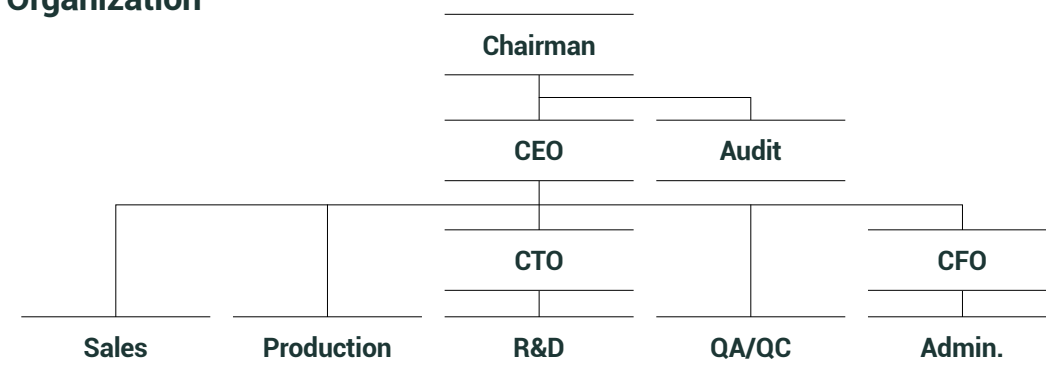
Gap Pad

Company Overview

| | |
|----------------------|---|
| Company | OCSmaterials Co.,Ltd. |
| Management | Sangwon, Han (Chairman), Woora, Jung (CEO) |
| Establishment | Oct. 2020 |
| Capital | US\$1.1M |
| Employee | 15 (R&D 6, Ph.D 2·Master's 2) |
| Location | 109, Anaji-ro, Gyeyang-gu, Incheon, 21104, Republic of Korea |
| Main Biz. | Thermal Interface Materials / Flame Retardant Products |



Organization



History

- 2020**
 - Company establishment
 - Concentration of research on Thermal Interface Materials
 - Source technology acquisition of Gap Filler, Gap Pad
- 2021**
 - Acquisition of source and processing technology for Thermal Grease and Encapsulants
- 2022**
 - The first sample released to company "L" for localization against global makers
- 2023**
 - Organization expansion of the Production/Research/Quality/Sales staffs
 - Achievement ISO and required certifications
 - Establishing an Affiliated Research Institute
- 2024**
 - Signing a long-term supply contract with company "L" about Encapsulants
 - Qualification improvement from company "L", "S"
 - Development of localization business especially in the domestic market such as automobiles, displays, LED lighting, communication equipment, and military industry
 - Designated "Legend 50+" by government as one of e-mobility leading company

Customized developed-products

Supplier oriented Line-up [Global Maker] Vs Customer Oriented Line-up [OCSmaterials]

OCSmaterials
Beyond the boundary



Customized design
(material + equipment)



Competitive price with MOQ



On time delivery with
competitive lead time

SAMSUNG
SAMSUNG SDI

LG전자

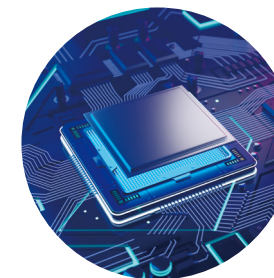
CSE
CS Enertech

LS대원(주)
LIVING SOLUTION

LS 오토모티브

한화테크윈

Who We Are



Business Area

All electrical and electronic industries
such as electric vehicles, IT, robots, etc.



Strategy

Localization of materials.
Supplying customized products.



Technology

Top-edge technologies such as dispersion,
reduction of low-molecular siloxane and etc.

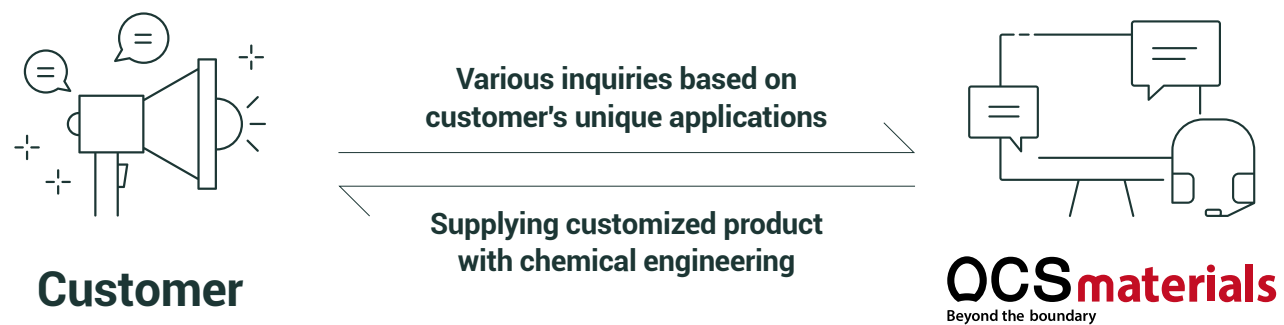


Achievement

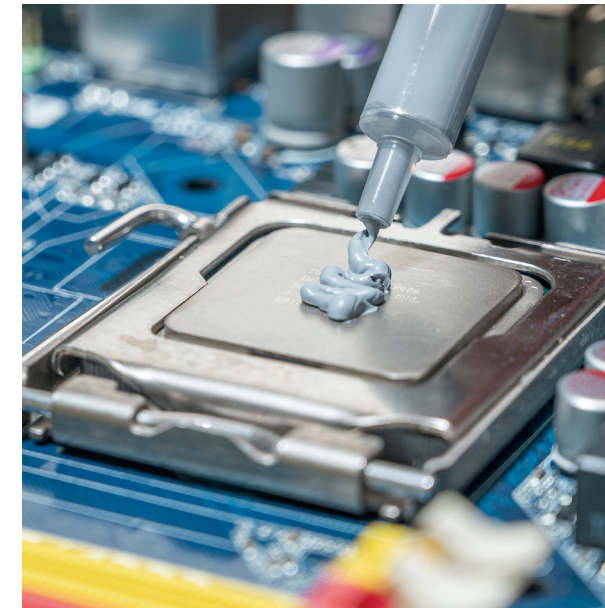
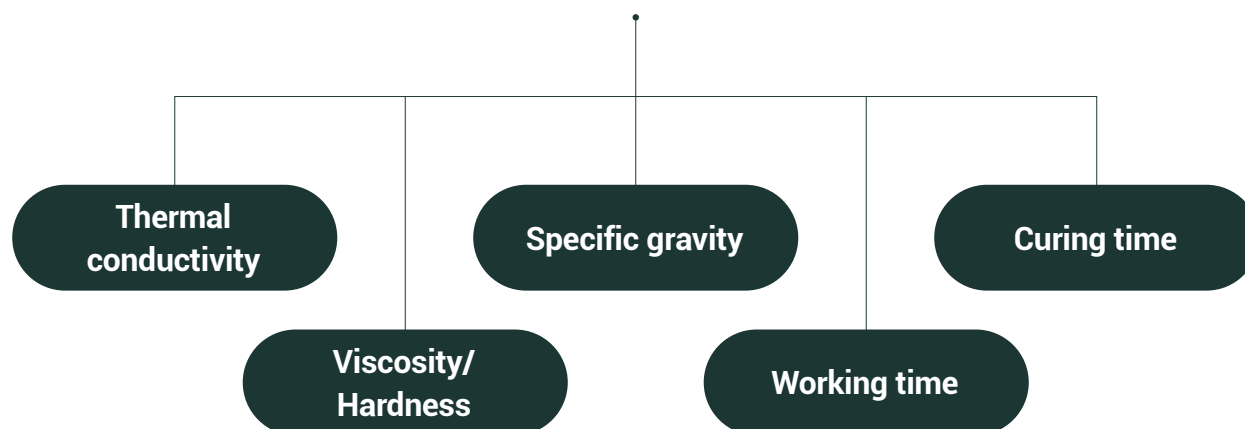
Signing long-term supplying contract of
Encapsulants with company "L".
Running pipe line over 70 projects.

Product Description

OCSMaterials is designing and producing the customized products upon customer's requirement (ex. Thermal conductivity, Viscosity, Hardness, Curing time, Working time, Bond Line Thickness, etc). We are recognized as a suitable company to replace global products dominating the domestic market through continuous development of high-efficiency heat dissipation materials and customer-oriented customized products.



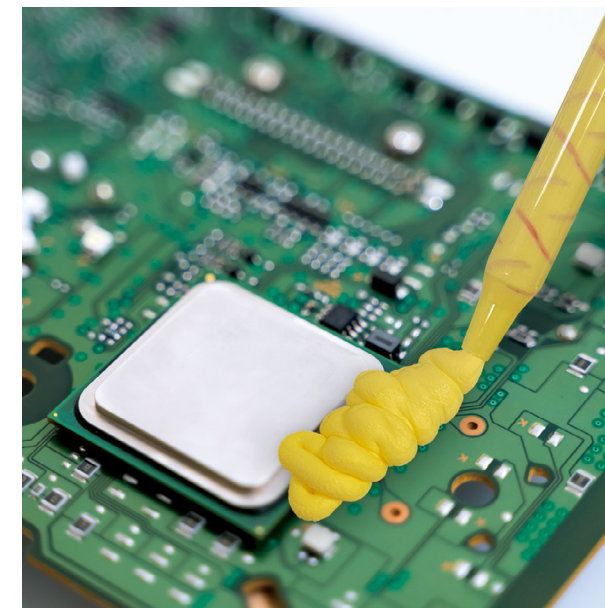
Customizing Properties



Grease



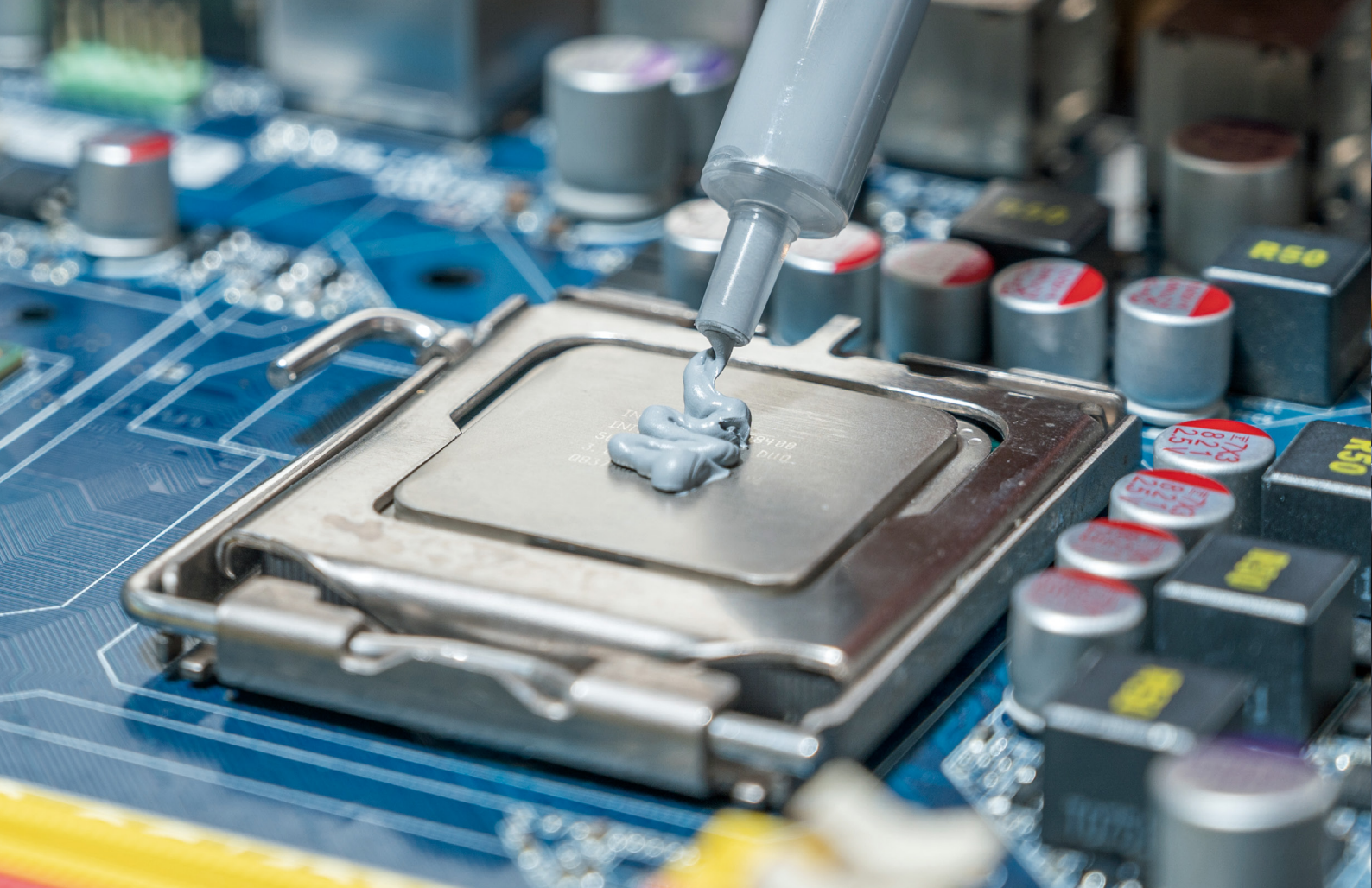
Encapsulants



Gap Filler



Gap Pad



Grease

Features

- Low application difficulty due to semi-solid state
- No reaction and phase change, which is advantageous for reworking
- Excellent heat resistance, cold resistance
- Filling between the heating element and the heat sink

OG Series

| NO | Thermal Conductivity (W/mK) - ASTM D7984 | Density(g/ml) - ASTM D1475 | Shelf Life | Operating Temp (°C) | Viscosity (cps) - 1rpm | BLT (μm) | Evaporation Loss - 120 °C, 24h | Oil Separation - 120 °C, 24h |
|----|--|----------------------------|------------|---------------------|------------------------|----------|--------------------------------|------------------------------|
| 1 | 1.0 | 1.7 | 1 years | -40 ~ 150 | 270,000 | 20 | < 0.1% | < 0.5% |
| 2 | 3.3 | 2.9 | 1 years | -40 ~ 200 | 130,000 | 20 | < 0.1% | < 0.5% |
| 3 | 4.6 | 3.2 | 1 years | -40 ~ 200 | 320,000 | 20 | < 0.1% | < 0.5% |
| 4 | 5.2 | 3.2 | 1 years | -40 ~ 200 | 200,000 | 60 | < 0.1% | < 0.5% |
| 5 | 8.0 | 3.4 | 1 years | -40 ~ 200 | 450,000 | 90 | < 0.1% | < 0.5% |

- E-Mobility (EV/HE) - Power Conversion System
- Autonomous Driving - Control Unit (PCU, ADCU)
- Display, Home Appliance, LED Lighting



Home Appliance



Vehicle



Electric



Industrial



Defence Ind.

Encapsulants

Features

- Easy to use as a flowable product
- High permeability for narrow-gap operations
- Low viscosity applicable to a wide range of heating sites
- Heat dissipation through dust protection, moisture protection and fixation

OM Series

| NO | Thermal Conductivity (W/mK) - ASTM D7984 | Hardness - Shore A | Density(g/ml) - ASTM D792 | Flame Rating - UL94 | Operating Temp (°C) | Viscosity (cps) - 100rpm | Cure Condition (hours) - 25°C | Type |
|----|--|--------------------|---------------------------|---------------------|---------------------|--------------------------|-------------------------------|----------|
| 1 | 0.6 | 60 | 1.6 | V-0 | -40 ~ 200 | 1,000 | 4 | Two-part |
| 2 | 0.7 | 30 | 1.7 | V-0 | -40 ~ 200 | 1,500 | 1.5 | Two-part |
| 3 | 1.2 | 30 | 1.7 | V-0 | -40 ~ 150 | 3,000 | 3 | Two-part |
| 4 | 2.0 | 60 | 2.6 | V-0 | -40 ~ 200 | 3,000 | 1 | Two-part |
| 5 | 3.0 | 45 | 2.75 | V-0 | -40 ~ 200 | 6,500 | 1 | Two-part |

- E-Mobility (EV/HE) - Power Conversion System (OBC/ICCU/V2LC)
- Display/Industrial – Power Supply (SMPS)
- LED Lighting



Home Appliance



Vehicle



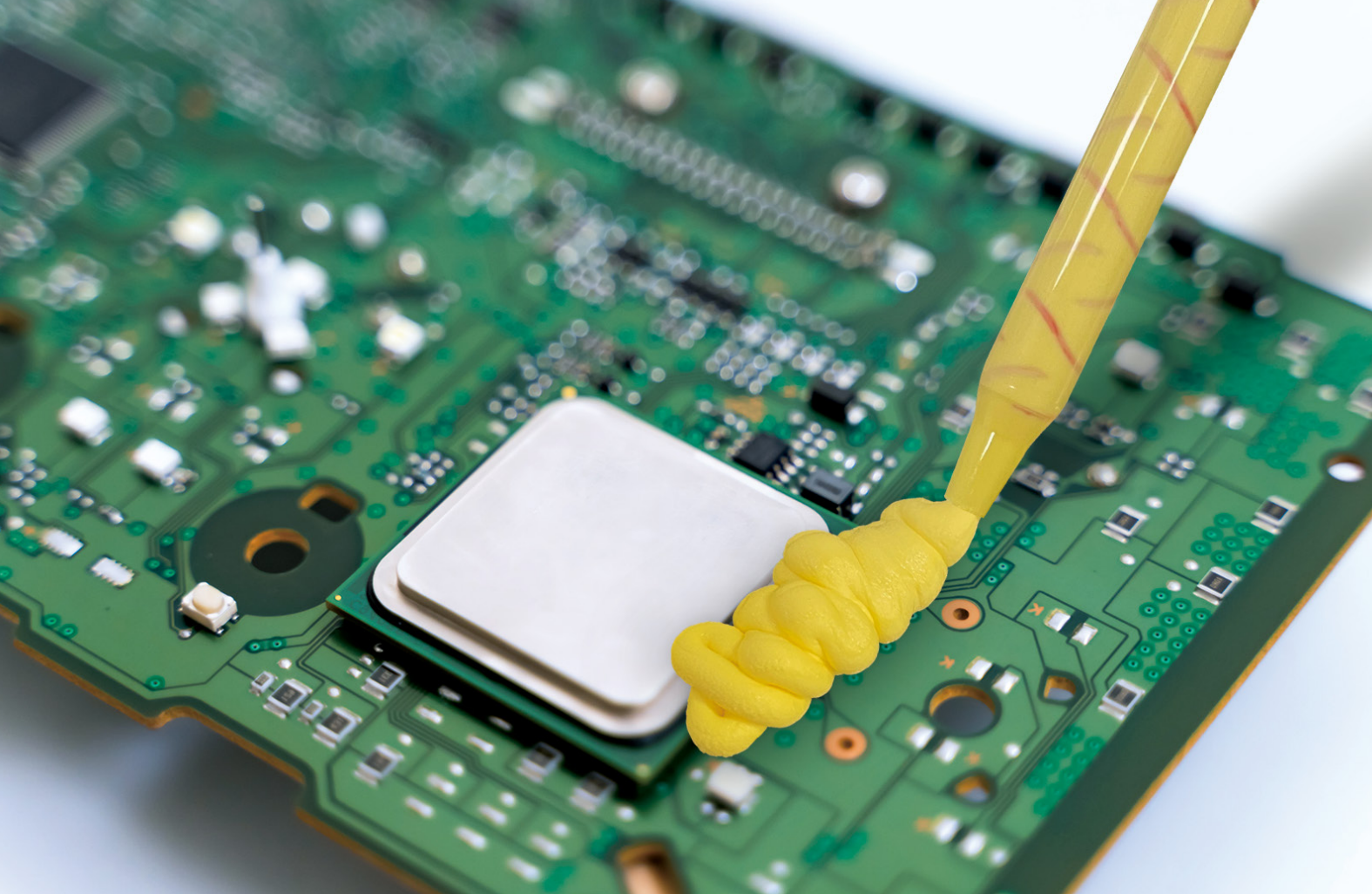
Electric



Industrial



Defence Ind.



Gap Filler

Features

- When applied to the structure and surface of various devices in liquid form, it is more advantageous than Pad
- The application can be freely adjusted according to the purpose and conditions of the product
- Production efficiency is higher and elastic than when using the pad, so it has impact mitigation effect

OF Series

| NO | Thermal Conductivity (W/mK) - ASTM D7984 | Hardness - Shore 00 | Density(g/ml) - ASTM D792 | Flame Rating | Operating Temp (°C) | Viscosity (cps) - 1rpm | Cure Condition (hours) - 25°C | Type |
|----|--|---------------------|---------------------------|--------------|---------------------|------------------------|-------------------------------|----------|
| 1 | 2.6 | 40 | 1.9 | V-0 | -40 ~ 150 | 310,000 | 1 | Two-part |
| 2 | 3.1 | 40 | 1.96 | V-0 | -40 ~ 150 | 220,000 | 3 | Two-part |
| 3 | 4.5 | 95 | 3.1 | V-0 | -40 ~ 200 | 150,000 | 0.5 | Two-part |
| 4 | 8 | 85 | 3.2 | V-0 | -40 ~ 200 | 270,000 | 2 | Two-part |
| 5 | 10 | 85 | 3.3 | V-0 | -40 ~ 200 | 500,000 | 2 | Two-part |
| 6 | 1.8 | 80 | 2.31 | V-0 | -40 ~ 200 | 950,000 | 6 | One-part |
| 7 | 2.9 | 85 | 2.86 | V-0 | -40 ~ 200 | 220,000 | 4 | One-part |

- E-Mobility (EV/HE) – Inverter, Converter, ECU, TCU
- Repeater, LED Lighting



Home Appliance



Vehicle



Electric



Industrial



Defence Ind.

Gap Pad

Features

- It can be supplied in the form of a finished product and applied immediately
- No additional equipment is required when applied to the production process
- Mainly used for a wide temperature range and low hardness

OP Series

| NO | Thermal Conductivity (W/mK) - ASTM D7984 | Hardness - Shore 00 | Density(g/ml) - ASTM D792 | Flame Rating - UL94 | Operating Temp (°C) |
|----|--|---------------------|---------------------------|---------------------|---------------------|
| 1 | 1.8 | (shore A)60 | 2.8 | V-0 | -40 ~ 200 |
| 2 | 2.2 | 30 | 1.9 | V-0 | -40 ~ 150 |
| 3 | 3.5 | 80 | 2.2 | V-0 | -40 ~ 150 |
| 4 | 4.0 | 70 | 3.0 | V-0 | -40 ~ 200 |
| 5 | 7.0 | 70 | 3.1 | V-0 | -40 ~ 200 |

- E-Mobility (EV/HE) - Power Conversion System (OBC/ICCU/V2L C)
- Display/Industrial, LED Lighting, Heat Sink/IC Chip, IGB Module



Home Appliance



Vehicle



Electric

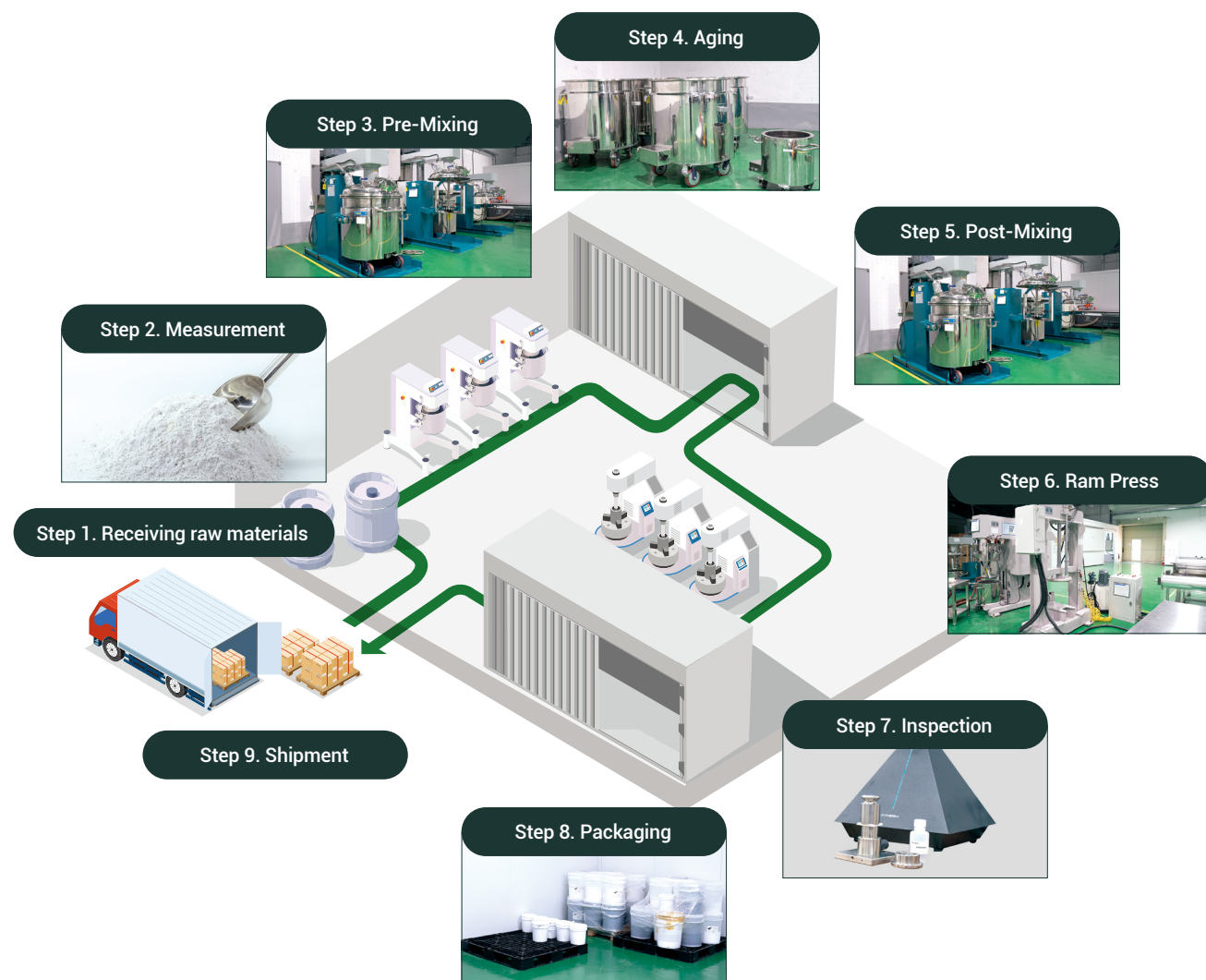
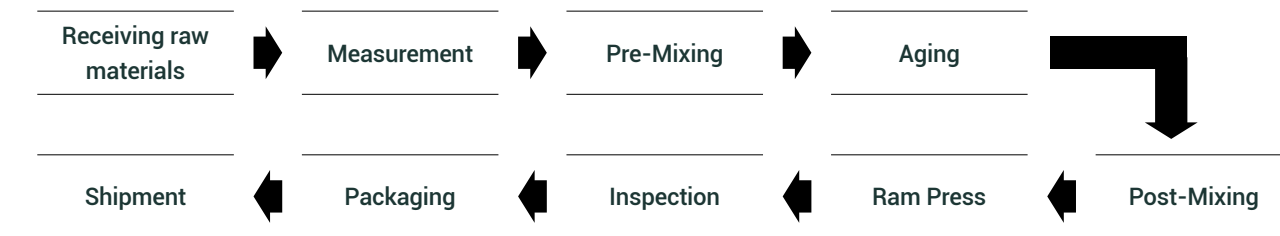


Industrial



Defence Ind.

Production Process



Production facilities and inspection equipment

Production facilities

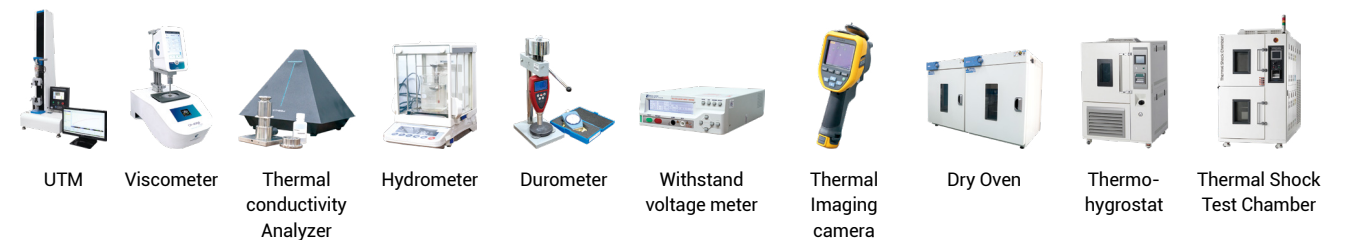


Planetary Mixer

Dissolver Mixer

RAM press

Inspection equipment



Patent and Certification status



OCSmaterials