

# HANSCHEM

HANSU CHEMICAL · SEOUL, KOREA

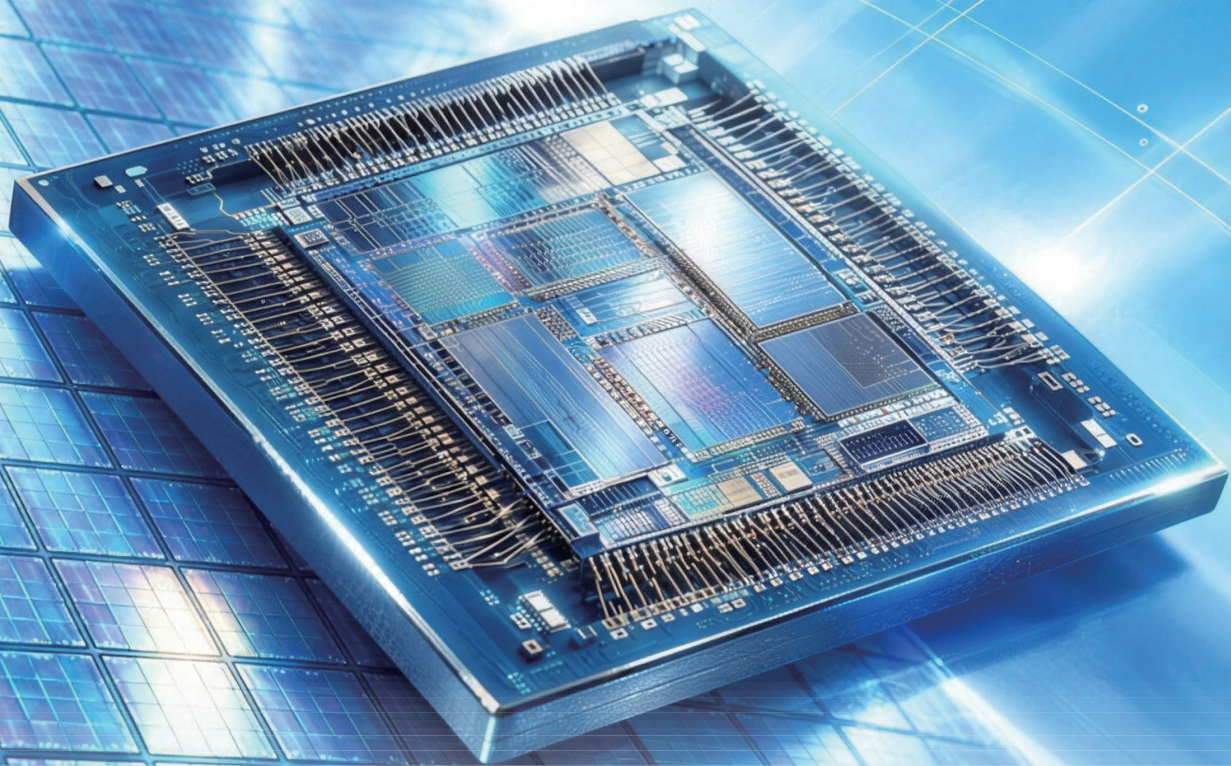
PRODUCT CATALOG

2026

SEMICONDUCTOR

## Mold Cleaning & Conditioning Rubber Sheets

High-performance rubber compounds for cleaning and conditioning molds used in semiconductor packaging, including ICs, diodes, transistors and LEDs.



### POWERCLEAN

Mold cleaning rubber sheet

### POWERWAX

Mold conditioning rubber sheet

+82-2-2696-9748 / [hanschem@nate.com](mailto:hanschem@nate.com)

# About HANSCHEM

HANSCHEM specializes in rubber compounds that remove mold residues and condition molds during the semiconductor packaging process. With extensive experience in industrial rubber manufacturing, we manage every step from compounding to packing, ensuring stable quality, reliable delivery and competitive pricing.

## 01 Expertise

Dedicated manufacturer of cleaning rubber compounds for semiconductor molds

## 02 Technology

Long experience in industrial rubber product manufacturing and proven development capability

## 03 Infrastructure

Delivery assurance and price competitiveness

## 04 Know-how

Semiconductor sales background with deep understanding of the manufacturing environment

## 05 Intellectual Property

Patent application in progress for semiconductor mold cleaning rubber manufacturing

## 06 Custom Design

Compounds optimized to each customer's process · custom dimensions available

## MILESTONES

**2015** Launch of low-odor / low-fume cleaning & conditioning rubber series

**2016** Start of exports to China and Southeast Asia

**2018** Quality stability for storage at room temperature ( $\leq 25^{\circ}\text{C}$ ); process-optimized compound design

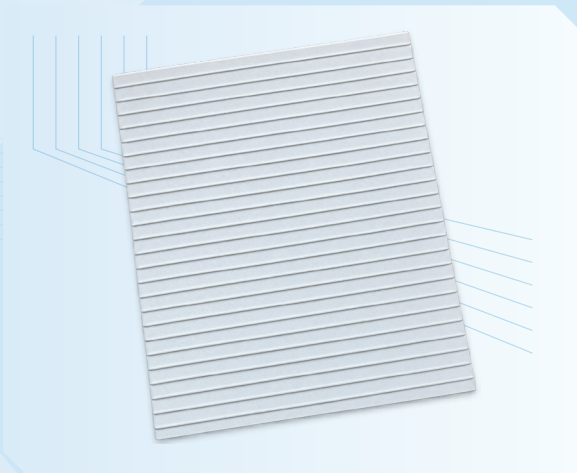
**2026** ISO 9001:2015 Quality Management System certified

## MANUFACTURING PROCESS



# POWERCLEAN

POWERCLEAN is a mold cleaning rubber compound for the removal of mold stains generated during epoxy molding compound (EMC) encapsulation of semiconductors such as integrated circuits, diodes, transistors and LEDs.



WHITE RUBBER SHEET

- Complete removal of mold stains on cavities
- Complete removal of stains on air vents and mold die faces
- No dummy lead frame · no preheating required
- Less pungent odor than melamine during mold cleaning

## PHYSICAL PROPERTIES

| Item             | Unit              | Value                    |
|------------------|-------------------|--------------------------|
| Form             | —                 | White rubber sheet       |
| Filler           | —                 | Titanium dioxide, Silica |
| Specific gravity | g/cm <sup>3</sup> | 1.15 ± 0.15              |
| Molded density   | g/cm <sup>3</sup> | 1.15 ± 0.15              |
| Mooney viscosity | ML 140 °C         | 70 ± 20                  |
| Thickness        | mm                | 5, 7, 8, 9               |

Length 200–300 mm / Width 10, 15, 20 mm / Thickness 5–10 mm  
Other sizes available on customer request.

## MODEL LINE-UP

|          |                                           |
|----------|-------------------------------------------|
| PC-2500C | General applications                      |
| PC-3000N | High cleaning performance                 |
| PC-3500H | Lower odor with good cleaning performance |
| PC-2900A | LED / opto devices — low-temperature cure |

## CLEANING CONDITIONS

Clamp pressure  
**30–100 kgf/m<sup>2</sup>**

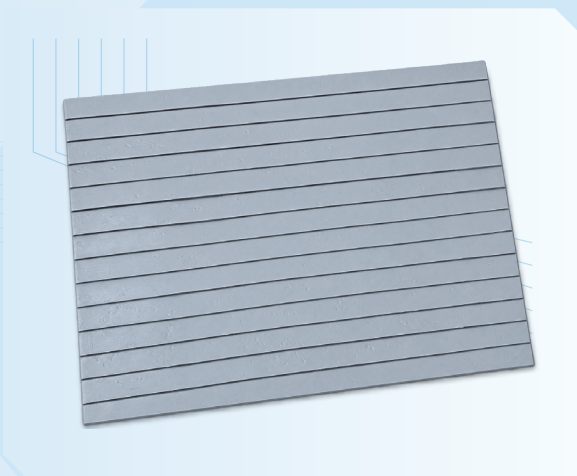
Mold temperature  
**160–190 °C**

Cure time  
**3–7 min**

Number of shots  
**2–4 shots**

# POWERWAX

POWERWAX is a mold conditioning rubber compound applied to mold dies after the cleaning process in EMC encapsulation molding. It restores release performance and extends release life. Compression molding is recommended.



GRAY RUBBER SHEET

- Good release from mold after curing
- Complete conditioning of mold dies after curing
- No dummy lead frame · no preheating required
- Only 1–2 conditioning shots recommended; minimal downtime

## PHYSICAL PROPERTIES

| Item             | Unit              | Value             |
|------------------|-------------------|-------------------|
| Form             | —                 | Gray rubber sheet |
| Rubber           | —                 | EPDM              |
| Specific gravity | g/cm <sup>3</sup> | 1.15 ± 0.15       |
| Molded density   | g/cm <sup>3</sup> | 1.15 ± 0.15       |
| Mooney viscosity | ML 170 °C         | 40 ± 20           |
| Thickness        | mm                | 5, 6, 7, 8, 9     |

Length 200–300 mm / Width 10, 15, 20 mm / Thickness 5, 6, 7, 8, 9 mm  
Other sizes available on customer request.

## MODEL LINE-UP

|          |                                       |
|----------|---------------------------------------|
| PW-4230C | General mold conditioning             |
| PW-4500N | High-efficiency conditioning compound |
| PW-4700A | LED mold manufacturing                |

## MOLDING CONDITIONS

Clamp pressure  
**30–100 kgf/m<sup>2</sup>**

Mold temperature  
**160–190 °C**

Cure time  
**3–5 min**

Number of shots  
**1–2 shots**

# How to Use

## POWERCLEAN

Clean until stains are fully removed

## POWERWAX

Condition in 1–2 shots

## PRODUCTION

Resume normal production

01

### Inspect

Check mold surface — clean when brightness fades or brown stains appear

02

### Place

Place one sheet on the lower die; clearance 1.0–1.5 mm; no lead frame

03

### Cure

Close mold at recommended pressure; wait 3–7 min until sheet cures

04

### De-mold

Remove cured sheet completely with dry compressed air

05

### Condition

Repeat if needed, then apply POWERWAX 1–2 shots and resume production



Placement · Curing · Release

PROCESS ILLUSTRATION

## CAUTIONS

- Use in a well-ventilated place or system
- Wear heat-resistant gloves · avoid contact with hot cured sheets
- Do not directly inhale vapor released when the mold opens
- Store in a cool, dry place

# Performance & Comparison

## RHEOLOGICAL DIRECTION

- Designed to flow easily into sharp corners where cleaning is most difficult
- Strong cleaning power through special additives
- Error-free performance saves the user's time and cost

## ELASTIC MODULUS ARCHITECTURE

- Cleaning power is based on the elastic modulus at cure
- Strong expansion pressure grips residues with greater force
- Prevents automatic-mold errors, cutting cost and process time

40%

Process yield improvement

20–30%

Total cost saving

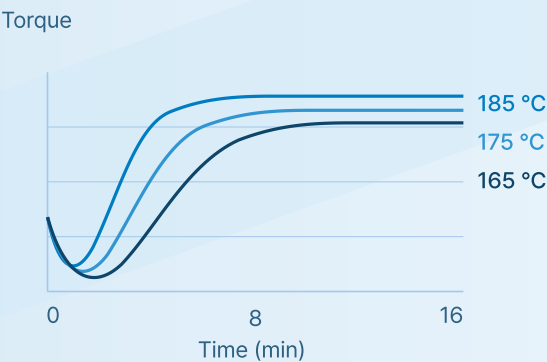
2–3

Shots to complete cleaning cycle

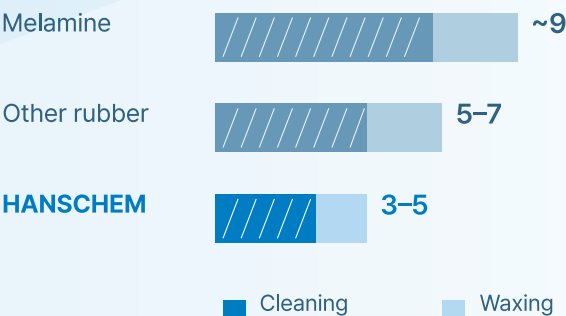
## FEWER SHOTS THAN COMPETING METHODS

| Item                     | Mold temp. | Curing time | Others (shots) | HANSCHEM |
|--------------------------|------------|-------------|----------------|----------|
| Cleaning · PC series     | 165–180 °C | 180–300 sec | 4–5            | 2–3      |
| Conditioning · PW series | 165–180 °C | 180–300 sec | 2–3            | 1–2      |

## CURE CURVE



## TOTAL SHOTS COMPARISON



## ADVANTAGES OVER MELAMINE CLEANING

|                       |                                                           |
|-----------------------|-----------------------------------------------------------|
| Higher yield          | Reduced cleaning time — fewer shots, no lead frame step   |
| Environment safe      | No hazardous chemicals used                               |
| Operator satisfaction | No chemical smell & fume; minimal odor and vapor emission |

# Quality Certifications & MSDS

HANSCHEM is certified to ISO 9001:2015. All products have conformed to RoHS requirements based on SGS test results, with no heavy metals or brominated flame retardants (PBBs/PBDEs) detected (N.D.). MSDS are available for all products.

## ISO

9001:2015

## RoHS

SGS TESTED

## MSDS

AVAILABLE



**ISO 9001:2015**

Quality Management System  
certificate · IGC

| Item                       | Test Method                          | Result | Limit |
|----------------------------|--------------------------------------|--------|-------|
| Lead (Pb)                  | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |
| Mercury (Pb)               | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |
| Chlorinated Paraffins (CP) | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |

**RoHS · POWERCLEAN**

SGS test report  
Heavy metals / PBBs-PBDEs  
N.D.

| Item                       | Test Method                          | Result | Limit |
|----------------------------|--------------------------------------|--------|-------|
| Lead (Pb)                  | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |
| Mercury (Pb)               | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |
| Chlorinated Paraffins (CP) | MSD reference: MS-001014-1 (2015) 10 | 0.0    | 0.0   |

**RoHS · POWERWAX**

SGS test report  
Heavy metals / PBBs-PBDEs  
N.D.

## DOCUMENTATION

The ISO 9001 certificate, full SGS RoHS test reports (5 pages each) and product MSDS are available on request.

# Packing, Storage & Contact

## PACKING

Polyethylene zip bag

## PER BOX

10 kg net  
Moisture-resistant coated carton

## SHELF LIFE

6 months at  $\leq 25^{\circ}\text{C}$  · 12 months at  $\leq 5^{\circ}\text{C}$  (from manufacturing date)

# HANSCHEM

Mold Cleaning & Conditioning Rubber Sheet Specialist

## ADDRESS

43, Omok-ro 13-gil, Yangcheon-gu,  
Seoul, Republic of Korea

## CONTACT

Tel +82-2-2696-9748

Fax +82-2-2690-0538

**[hanschem@nate.com](mailto:hanschem@nate.com)**

Samples · technical data sheets (TDS) · MSDS · custom dimensions available on request.

