



Guangzhou Huitian New Material Co., Ltd.

Address 1: No. 6, Qibei Road, Xinhua Street, Huadu District, Guangzhou City

Address 2: No. 16, Yanjiang Avenue, Huadu District, Guangzhou City

Tel.: 020-36867996; Fax: 020-36867991

Zip Code: 510800; Website: www.huitian.net.cn

Limited Guarantee Information - please read it carefully

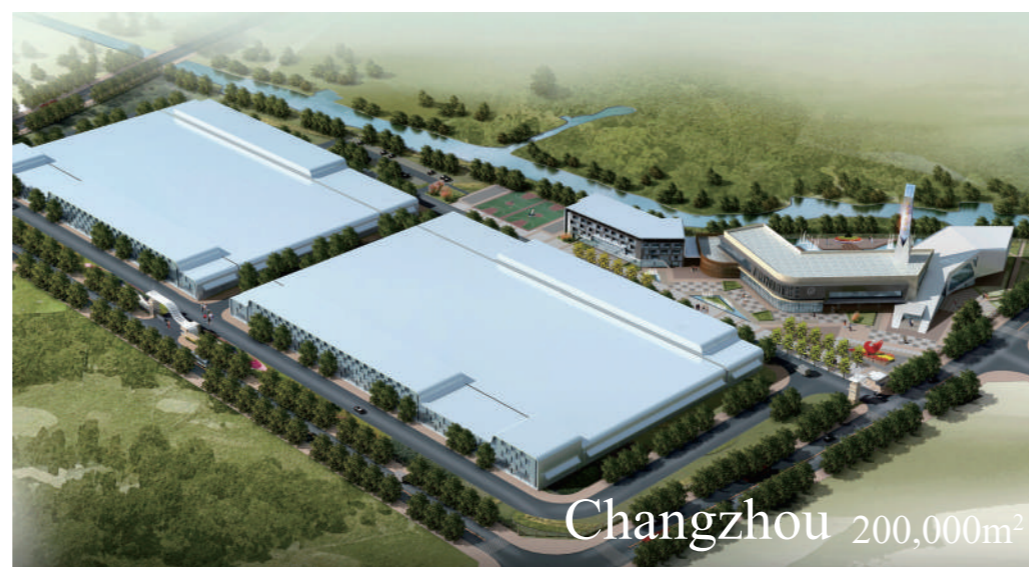
The above included data information is provided on the basis of integrity, and considered to be accurate. However, the condition and method of using the Company's product are not controlled by us. The data provided herein cannot replace the testing conducted by customers to ensure the safety, effectiveness, and full satisfaction of specific end-uses for Huitian products. The use suggestions we provide shall not be construed as infringing on any patents.

The Huitian's sole guarantee is the products meet Huitian's sales specifications at the time of shipment. In the event of a breach of this guarantee by Huitian, your compensation is limited to the replacement of any products that do not meet the guarantee.

Automotive Electronics Product Manual

The Largest Adhesive R&D Manufacturer in China

- Six production bases cover Shanghai, Guangzhou, Changzhou, Xiangyang and Yicheng, and total floor area exceeds 1,200,000 m²



About US

Huitian New Material (stock code: 300041) is the sole enterprise of Chinese adhesive new material industry with the longest history and most categories. With 46 years of development history, Huitian focuses on the research and development of adhesive new materials and owns over 2,000 products in six major disciplines. These products are widely used in fields such as photovoltaic new energy, new energy automobile, 5G communications, consumer electronics, aviation & aerospace and others, providing comprehensive solutions for adhesive new materials.

Huitian is the sole enterprise of Chinese adhesive new material industry with the widest layout and highest research and development investment. It has established five major research and development bases in Shanghai, Guangzhou, Xiangyang, Yicheng, and Changzhou, as well as industrial bases in Vietnam. Huitian has a core research and development team of over 300 people, including doctors and masters, and has obtained more than 300 patented technologies. It is the first "National Enterprise Technology Center" in the domestic adhesive new material industry.

Huitian is the sole enterprise of Chinese adhesive new material industry focusing on core tracks and fully replacing import enterprises. It has established strategic cooperation with benchmark customers in three core tracks: photovoltaic new energy, lithium battery industry and communication electronics, such as Huawei, CATL, LONGi and Nissan, making it the preferred brand for domestic replacement of adhesive new materials.

Huitian is the sole enterprise of Chinese adhesive new material industry with sustained growth and the strongest development momentum. Its performance has continued to grow steadily over the 13 years since its listing, effectively promoting the development of national adhesive new materials. Huitian has always adhered to the mission of "serving the industry and society", striving to empower employees, satisfy customers, achieve win-win partnerships, increase shareholder value, and gain trust from society, thus contributing to the dignity of national enterprises.

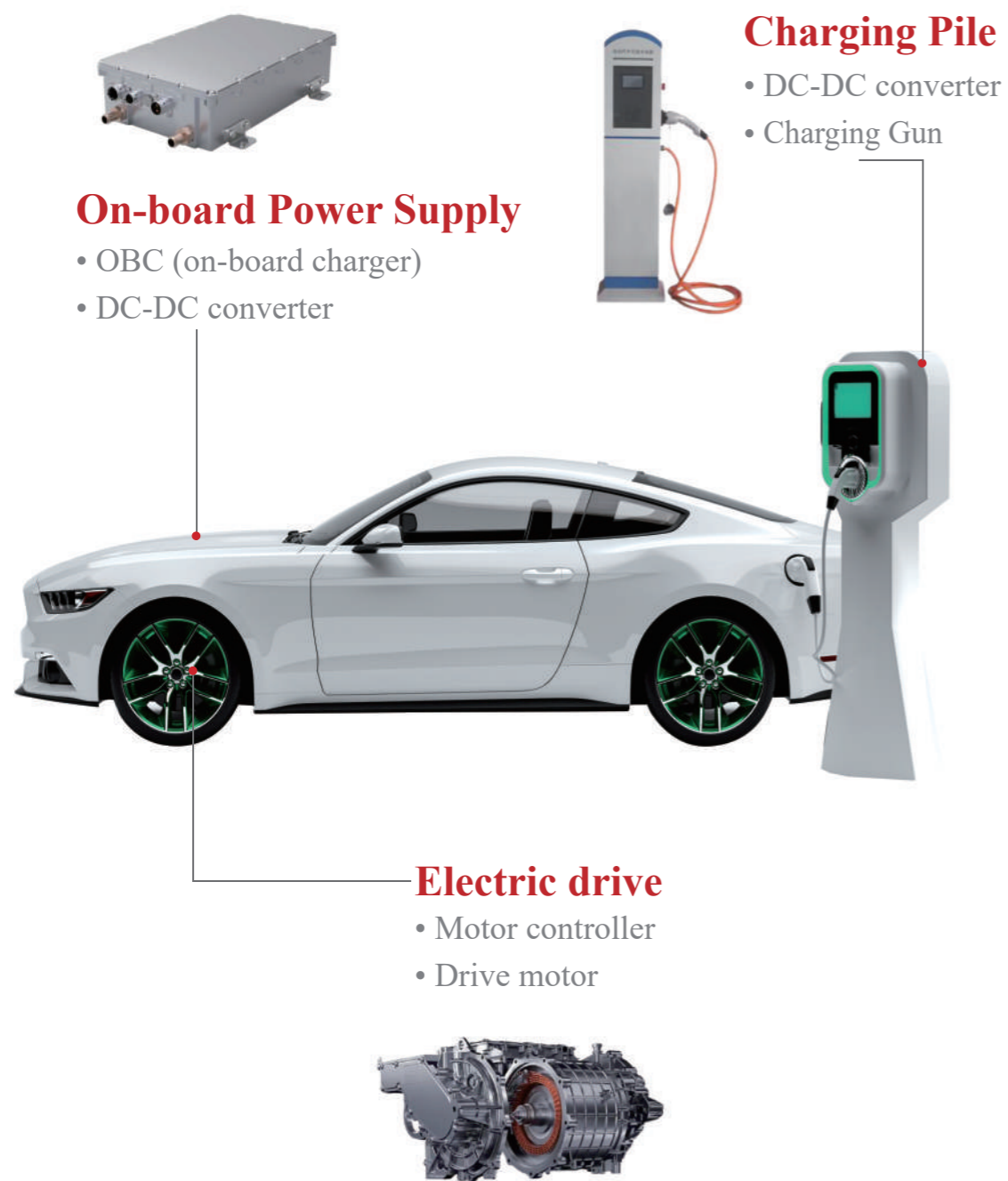


Contents

| | |
|----------|---|
| 1 | Huitian Introduction |
| 2 | Layout |
| | Electrical Product Layout of New Energy Automobile.....03 |
| | Full Range of Adhesive Product Solutions04 |
| 3 | Solutions |
| | Charging Gun.....05 |
| | DC Charging Module.....06 |
| | On-board Power Supply.....07-08 |
| | Motor Controller.....09-10 |
| | Drive motor.....11 |
| | Universal Conformal Coating & TIM Materials.....12 |

CONTENTS

Electric Product Layout of New Energy Automobile



Complete Adhesive Product Solution



- « Silicone
- « PU/PUR
- « Epoxy
- « UV
- « MS
- « Acrylic acid



Charging Gun



Potting Protection 8252 Series

The charging gun after potting protection can improve the electrical and electronic performance to reach the anti-rolling, water-proof, insulating and flame retarding effect.

- ◆ Fast curing in normal temperature
- ◆ High adhesion strength
- ◆ Excellent electrical performance

Technical Parameters

★ Potting Adhesive for Charging Gun

| Product Name | Appearance | Viscosity mPa·s | Density g/cm ³ | Mix Ratio | Operating Time min | Initial Curing Time h | Hardness (Shore D) | Thermal Conductivity W/(m·K) | Flame Retardant Rating (UL94) | |
|--------------|------------|-----------------|---------------------------|-----------|--------------------|-----------------------|--------------------|------------------------------|-------------------------------|----------|
| 8252H | Part A | Black | 12,500-14,500 | 1.50-1.56 | 5:1 | 4-6 | 1-4 | 40-50 | 0.7 | V-0(4mm) |
| | Part B | Light brown | 2,900-3,500 | 1.38-14.2 | | | | | | |
| 8252L | Part A | Black | 6,500-7,800 | 1.55-1.60 | 5:1 | 4-6 | 1-4 | 60-70 | 0.6 | V-0(4mm) |
| | Part B | Light brown | 100-170 | 1.22-1.24 | | | | | | |

DC Charging Module

Shallow Potting 52XX Series

It is applied in coastal area, metallurgy, coal mine, electroplating and other extreme environment or scene to avoid the invasion of water steam and dust.

- ◆ High mobility
- ◆ Anti-poisoning
- ◆ Excellent heat-conducting property, adaptive to higher power module



One-part Fixing / Dam Adhesive 9765C

- ◆ High extruding
- ◆ High Aspect Ratio (H/W)
- ◆ No toxic reaction to the addition-type potting glue

Technical Parameters

★ Shallow Potting Adhesive of Charging Module

| Product Name | Appearance | Viscosity mPa·s | Mix Ratio | Density g/cm ³ | Thermal Conductivity W/(m·K) | Hardness (Shore A) | Operating Time min | Curing Condition | Dielectric Strength kV/mm | |
|--------------|------------|-----------------|-------------|---------------------------|------------------------------|--------------------|--------------------|------------------|---------------------------|-----|
| 5280 | Part A | Gray | 2,000~3,500 | 1:1 | 1.80 | ≥0.6 | 20-40 | ≥60 | 80°C 30min | ≥14 |
| | Part B | White | 2,000~3,500 | | | | | | | |
| 5299 | Part A | Gray | 2,000~3,000 | 1:1 | 1.59 | ≥0.6 | 50-60 | ≥70 | 80°C 30min | ≥20 |
| | Part B | White | 1,800~3,000 | | | | | | | |
| 5290D | Part A | Gray | 4,500~7,500 | 1:1 | 2.75 | 2.0 | 30-45 | ≥60 | 80°C 30min | ≥13 |
| | Part B | White | 4,000~7,000 | | | | | | | |

★ Fixing / Dam Adhesive of Charging Module

| Product Name | Appearance | Density g/cm ³ | Thixotropy | Thermal Conductivity W/(m·K) | Hardness (Shore A) | Shear Strength MPa | Dielectric Strength kV/mm | Flame Retardant Rating (UL94) |
|--------------|-------------|---------------------------|------------|------------------------------|--------------------|--------------------|---------------------------|-------------------------------|
| 9765C | White paste | 1.70-1.85 | 3-5 | 0.8 | 75-85 | 2.0 | ≥18 | UL94 V-0 |

On-board Power Supply (DC-DC、OBC)



Shell Sealing FIPG: 9661 Series

- ◆ Universality for substrate
- ◆ High adhesion strength and elongation at break
- ◆ No corrosion to substrate

Magnetic Device Heat Conducting and Protection 529X Series

Huitian potting adhesive integrating the structural and thermal characteristics of magnetic devices can be tailored to match products with different modulus and heat-conducting property. It can provide good protection and thermal insulation for devices, such as inductors and transformers, effectively preventing problems such as core cracking and excessive temperature rise.

- ◆ 1.0~4.0W/(m·K) products are optional
- ◆ Low modulus and low CTE
- ◆ Self-adhesion
- ◆ Anti-poisoning

Technical Parameters

★ Shell Sealant FIPG

| Product Name | Color | Extruding g/s | Surface Dry min | Hardness (Shore A) | Tension Strength MPa | Elongation at Break % | Shear Strength MPa | Product Features |
|--------------|----------------------|---------------|-----------------|--------------------|----------------------|-----------------------|--------------------|------------------|
| 9661 | Black / white / grey | 14.9 | 15 | 35 | 2.5 | 413.5 | 2.53 | Anti-yellowing |

Power device heat conducting 2.0-6.0W/ (m.K) Thermal Gel Series

With the increasing power density of devices, the heat generated during operation also increases. Coating the interface between heating device and heat sink with thermal gel can effectively improve the heat conducting efficiency and prevent making damage to device caused by excessive temperature rise.

- ◆ High extruding and good workability
- ◆ Low oil extraction rate
- ◆ Excellent insulation performance
- ◆ High reliability

Technical Parameters

★ One-part Thermal Gel of Power Device On-board Power Supply

| Product Name | Appearance | Extruding g/min | Density g/cm ³ | Thermal Conductivity W/(m·K) | 40psi Interface Thickness mm | 40PSI Thermal Resistance °C·cm ² /W | Dielectric Strength kV/m | Volume Resistivity Ω·cm |
|----------------------------|------------|-----------------|---------------------------|------------------------------|------------------------------|--|--------------------------|-------------------------|
| 9503 | Blue | 40 | 2.1 | 2.0 | 0.120 | 0.701 | ≥5 | ≥1×10 ¹² |
| 9503L (Post-cured type) | Pink | 120 | 2.9 | 3.0 | 0.022 | 0.11 | ≥6 | ≥1×10 ¹³ |
| 9504 | Pink | 30 | 3.2 | 4.0 | 0.100 | 0.37 | ≥6 | ≥1×10 ¹³ |
| 9506 | Blue | 30 | 3.4 | 6.0 | 0.085 | 0.18 | ≥4 | ≥1×10 ¹² |

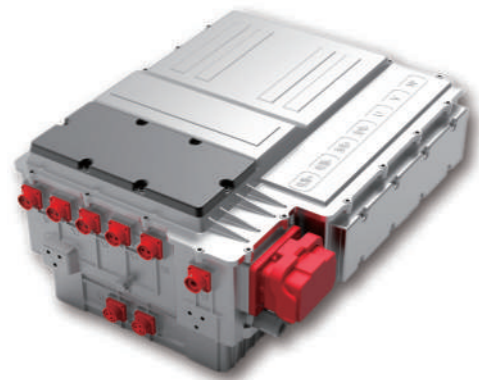
★ Dual-component Thermal Gel of Power Device On-board Power Supply

| Product Name | Appearance | Viscosity Pa·s | Curing Condition | Density g/cm ³ | Thermal Conductivity W/(m·K) | 40PSI Thermal Resistance °C·cm ² /W | Hardness (Shore 00) | Elongation at Break % | Dielectric Strength kV/m |
|--------------|------------|----------------|------------------|---------------------------|------------------------------|--|---------------------|-----------------------|--------------------------|
| 5272 | Part A | White paste | 80°C 30min | 2.8 | 2.5 | 0.60 | 50 | 0.40 | 10 |
| | Part B | Blue paste | | | | | | | |
| 5274 | Part A | Blue paste | 120°C 20min | 3.2 | 3.8 | 0.55 | 50 | 0.25 | 9 |
| | Part B | White paste | | | | | | | |
| 5276 | Part A | White paste | 60°C 30min | 3.3 | 6.0 | 0.41 | 60 | 0.35 | 9 |
| | Part B | Blue paste | | | | | | | |

★ Thermal Potting Adhesive of Magnetic Device

| Product Name | Appearance | Viscosity mPa·s | Density | Thermal Conductivity W/(m·K) | Hardness (Shore A) | Dielectric Strength kV/mm | Volume Resistivity Ω·cm |
|--------------|------------|-----------------|---------|------------------------------|--------------------|---------------------------|-------------------------|
| 5296 | Part A | 2,800-4,800 | 1.95 | 1.0 | 30-40 | ≥18 | ≥1.0×10 ¹⁴ |
| | Part B | | | | | | |
| 5297G | Part A | 2,000-4,000 | 2.52 | 1.5 | Shore 00 50-60 | ≥16 | ≥1.0×10 ¹³ |
| | Part B | | | | | | |
| 5297C | Part A | 5,500±2,000 | 2.65 | 1.7 | 10-20 | ≥16 | ≥1.0×10 ¹² |
| | Part B | | | | | | |
| 5290G | Part A | 4,500-7,500 | 2.75 | 2.0 | 5-15 | ≥16 | ≥1.0×10 ¹⁴ |
| | Part B | | | | | | |
| 5294G | Part A | 14,000-22,000 | 3.15 | 4.0 | Shore 00 40-70 | ≥10 | ≥1.0×10 ¹² |
| | Part B | | | | | | |

Motor controller



Shell Sealing CIPG: 9516

- ◆ It can be assembled and disassembled repeatedly
- ◆ Excellent resilience
- ◆ Resistant to multiple medium oils

Power Device Heat Conducting 9504LH

It is used for interface heat dissipation between IGBT module baseplate and liquid cooling plate. The operation process and BLT can be comparable to silicone thermal grease, and its reliability is improved greatly compared with silicone grease.

- ◆ High heat conductivity: 4.0W/(m.K)
- ◆ Low thermal resistance: 0.07°C·cm²/W
- ◆ It can significantly improve pump-out problem

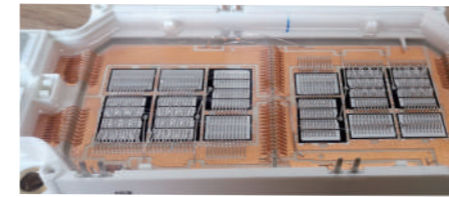
Technical Parameters

★ Shell Sealant (CIPG)

| Products | Curing Condition | Appearance | Density g/cm ³ | Hardness (Shore A) | Shear Strength AI 6061 MPa | Shear Strength PBT+30GF MPa | Tension Strength MPa | Elongation at Break % |
|----------|----------------------------|------------|---------------------------|--------------------|----------------------------|-----------------------------|----------------------|-----------------------|
| 9516 | 150°C/30Min 130°C/60Min | Grey paste | 1.1 | 49 | 3.4 | 2.2 | 4.7 | 400 |

★ Power Device Thermal Gel

| Product Name | Appearance | Extruding g/min | Density g/cm ³ | Curing Condition | Thermal Conductivity W/(m·K) | 40psi Interface Thickness mm | 40PSI Thermal Resistance °C·cm ² /W | Dielectric Strength kV/m | Volume Resistivity Ω·cm |
|--------------|-------------|-----------------|---------------------------|---------------------------------|------------------------------|------------------------------|--|--------------------------|-------------------------|
| 9504LH | Light green | 50 | 3.2 | 125°C heating platform 10min | 4.0 | 0.012 | 0.07 | ≥6 | ≥1×10 ¹³ |



Encapsulation Gel 5298 Series

IGBT modules, as the core part of motor controllers in new energy automobiles, play a crucial role in power control. The sealing adhesive is used and can enable chip with anti-vibration and insulation effects, enhancing the overall waterproof and anti-condensation performance of module.

Shell Adhesion 9516FW

- ◆ Heating and fast curing
- ◆ High adhesion strength
- ◆ Friendly matching with potting adhesive

- ◆ Extremely low modulus
- ◆ Self-adhesion
- ◆ High insulating
- ◆ Excellent heat resistance
Excellent heat resistance

Technical Parameters

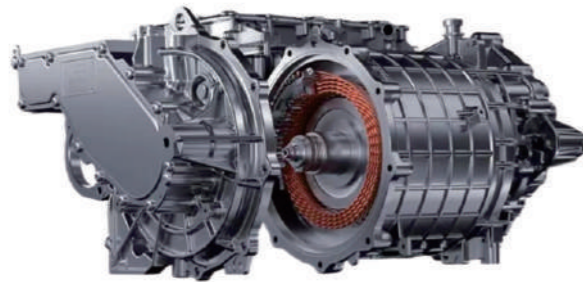
★ IGBT Shell Sealing Adhesive

| Product Name | Appearance | Viscosity Pa·s | Density g/cm ³ | Curing Time | Hardness (Shore A) | Tension Strength MPa | Elongation at Break % | Shear Strength MPa |
|--------------|-------------|----------------|---------------------------|-------------|--------------------|----------------------|-----------------------|--------------------|
| 9516FW | White paste | 120~250 | 1.1 | 120°C/1h | 35 | 4.5 | 350 | 4.0 |

★ IGBT Potting Adhesive

| Product Name | Appearance | Viscosity mPa·s | Density g/cm ³ | Curing Condition | Cone Penetration 1/10 mm | Dielectric Constant 1.2MHz | Dielectric Strength kV/mm | Volume Resistivity Ω·cm | Long-term Working Temperature °C |
|--------------|------------|-----------------|---------------------------|------------------|--------------------------|----------------------------|---------------------------|-------------------------|----------------------------------|
| 5298C | Part A | Transparent | 500-1,500 | 80°C 30-60min | Whole cone 250-350 | 2.6 | ≥20 | ≥1×10 ¹⁵ | -50~150 |
| | Part B | Transparent | 500-1,500 | | | | | | |
| 5298D | Part A | Transparent | 300-600 | 80°C 30-60min | 1/2 cone 130-230 | 2.5 | ≥20 | ≥1×10 ¹⁵ | -50~175 |
| | Part B | Transparent | 300-600 | | | | | | |
| 5298E | Part A | Transparent | 300-600 | 80°C 30-60min | 1/2 cone 130-230 | 2.6 | ≥20 | ≥1×10 ¹⁵ | -50~200 |
| | Part B | Light brown | 300-600 | | | | | | |

Drive motor



Stator / Rotor Potting 6312T

- ◆ Good mobility
- ◆ The product has excellent heat resistance
- ◆ Good solvent resistance

Magnetic Steel Bonding Adhesive 6065 Series

- ◆ One-part heating and curing
- ◆ High adhesion strength
- ◆ Excellent heat resistance

Technical Parameters

★ Stator / Rotor Potting Adhesive

| Product Name | Appearance | Viscosity mPa·s | Density | Ratio | Mixed Viscosity mPa·s | Curing Condition | Dielectric Strength kV/mm | Volume Resistivity Ω·cm | Thermal Conductivity W/(m·K) | Working Temperature °C |
|--------------|---------------------|-----------------|---------|--------|-----------------------|------------------|---------------------------|-------------------------|------------------------------|------------------------|
| 6312T | Part A black | 12,000-20,000 | 1.70 | 100:13 | 1,000-3,000 | 60°C/3h | ≥20 | ≥1.0×10 ¹⁴ | ≥0.6 | -40~155 |
| | Part B light yellow | 30-90 | 0.98 | | | | | | | |

★ Magnetic Steel Bonding Adhesive

| Product Name | Appearance | Viscosity mPa·s | Density g/cm ³ | Curing Condition | Hardness (Shore D) | Shear Strength MPa | Working Temperature °C |
|--------------|------------|-----------------|---------------------------|---|--------------------|--------------------|------------------------|
| 6065 | Grey paste | 550,000 | 1.55 | 120°C/30min 150°C/15min | ≥75 | ≥18 | -40~150 |
| 6065H | Grey paste | 120,000 | 1.73 | 120°C/40min 150°C/15min 180°C/10min | ≥75 | ≥10 | -40~200 |

Universal Adhesive

Technical Parameters

★ Conformal Coating (UV+ Moisture)

| Product Name | Appearance | Viscosity mPa·s | Solid Content % | Curing Energy J/cm ² | Dielectric Strength kV/mm | Volume Resistivity Ω·cm | Working Temperature °C | Reworkability |
|--------------|-----------------------|-----------------|-----------------|---------------------------------|---------------------------|-------------------------|------------------------|---|
| 361216 | Amber and transparent | 100 | >99.5% | 1-3 | ≥25 | ≥10 ¹⁴ | -65~150 | During the process of using three proofing glue, the cleaning agent 1050 can be used for cleaning |
| 3610H3 | Amber and transparent | 300 | >99.5% | 1-3 | ≥25 | ≥10 ¹⁴ | -65~150 | |
| 3612H6 | Amber and transparent | 600 | >99.5% | 1-3 | ≥25 | ≥10 ¹⁴ | -65~150 | After curing, the paint film can be removed with the highly effective repairing agent 1060 |

★ Heat conducting and fixing adhesive solution

| Product Name | Appearance | Viscosity mPa·s | Thixotropic Index | Thermal Conductivity W/(m·K) | Density g/cm ³ | Surface Dry Time min | Hardness (Shore D) | Shear Strength MPa | Working Temperature °C |
|--------------|----------------------|-----------------|-------------------|------------------------------|---------------------------|----------------------|--------------------|--------------------|------------------------|
| 9661E | Grey / white paste | 30,000-50,000 | 3.0-4.0 | 0.6 | 1.75 | 5~15 | 65-76 | ≥2.0 | -40~150 |
| 9765 | White slumping fluid | 4,500-55,000 | 2.5-3.5 | 1.0 | 1.85 | 5~10 | 65-85 | ≥2.0 | -40~150 |
| 9665ET | White microflow | 60,000-120,000 | 3.0-4.0 | 2.0 | 2.7 | 1~5 | 75-95 | ≥2.0 | -40~150 |

★ Silicone thermal grease

| Product Name | Appearance | Viscosity mPa·s | Density g/cm ³ | Thermal Conductivity W/(m·K) | Thermal Resistance 0.1mm | Cone Penetration 1/10cm | Working Temperature °C | Product Characteristics |
|--------------|------------|-----------------|---------------------------|------------------------------|--------------------------|-------------------------|------------------------|--|
| 0112 | White | 200,000 | 2.6 | 1.5 | 0.3 | 340 | -40~150 | Easy for paint coating, and low oil leakage |
| 0116Y | Blue | 140,000 | 3.1 | 3.2 | 0.11 | 290 | -40~150 | High heat conductivity, and easy for paint coating |
| 0117 | White | 120,000 | 3.3 | 4.0 | 0.07 | 290 | -40~150 | High heat conductivity, and good insulativity |