

Heat resistant imide base material masking · tape for fixing semiconductor chip

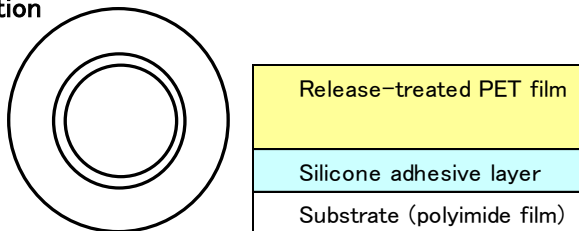
170 series

Feature

- ① Solder heat resistant heat resistant tape based on polyimide film
- ② Excellent adhesive residue to glass and semiconductor. (171)
- ③ Light peelability (171), strong adhesion (172, 174) grade available

Use	171	Glass for C-MOS camera module, Masking tape for C-MOS
	175	Glass for C-MOS camera module, Masking tape for C-MOS
	172	Lead frame (provisional) fixing tape (middle adhesive)
	174	Lead frame (provisional) fixing tape (strong adhesion)

Construction



Characteristic

General characteristics

product name	Thickness (mm)	Base material (mm)	Adhesive force (N/25mm)
171	0.065	0.050	0
175	0.04	0.025	0
172	0.04	0.025	3
174	0.065	0.050	5
KX174 (Development item)	0.05	0.025	8

Measurement condition Tensile rate 300mm/min
 (Conforming to JIS Z 0237) Tension angle 180 degree: After bonding, the measured value after 24 hours
 Measurement temperature 23°C Adherend Stainless steel plate

product name	Base material (mm)	Tensile strength (MPa)	Elongation (%)	Dielectric breakdown voltage (KV/mm)
171	0.050	310	80	18
175	0.025	340	60	9
172	0.025	340	60	9
174	0.050	310	80	18
Test conditions		C2318	C2318	C2318

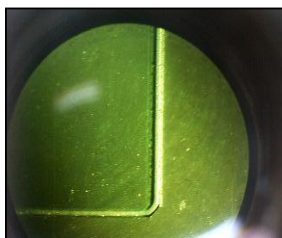
【Series 171 · 175】

Heat-resistant masking for glass, semiconductor and circuit etching

(1) Adhesive residue property-1

171

General imide tape



conditions

After sticking to glass, leave at 250 ° C for 1 minute

After taking out, air cooling at room temperature for 30 minutes.

→ Take the tape and observe the glass surface

(1) Adhesive residue property-2

90°CX1hr

150°CX1hr

200°CX1hr



conditions

After sticking to the stainless steel surface, leave the above condition

After taking out, air cooling at room temperature for 30 minutes.

→ Take the tape and observe the stainless steel surface

(2) Chemical resistance

Immerse in an acidic solution (pH 2) of H₂SO₄ for 1 minute.

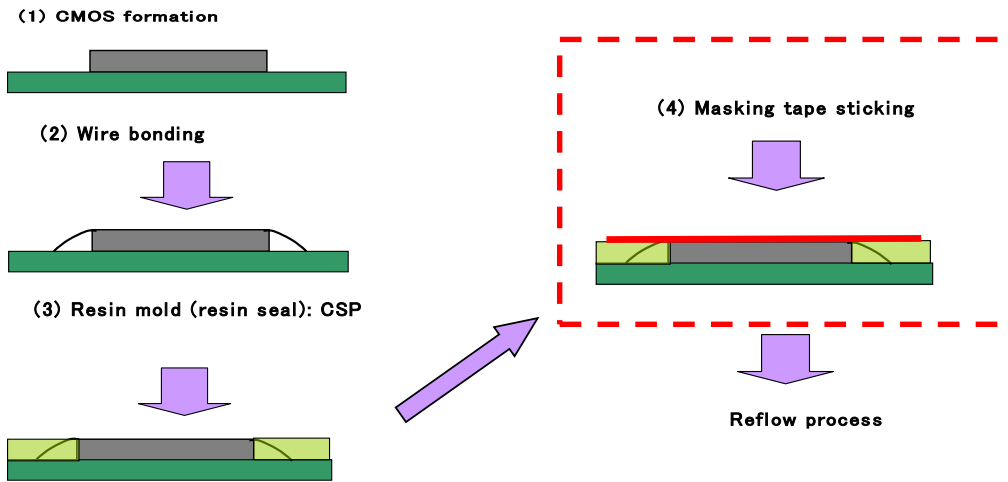
【Before the test】

【After Test】



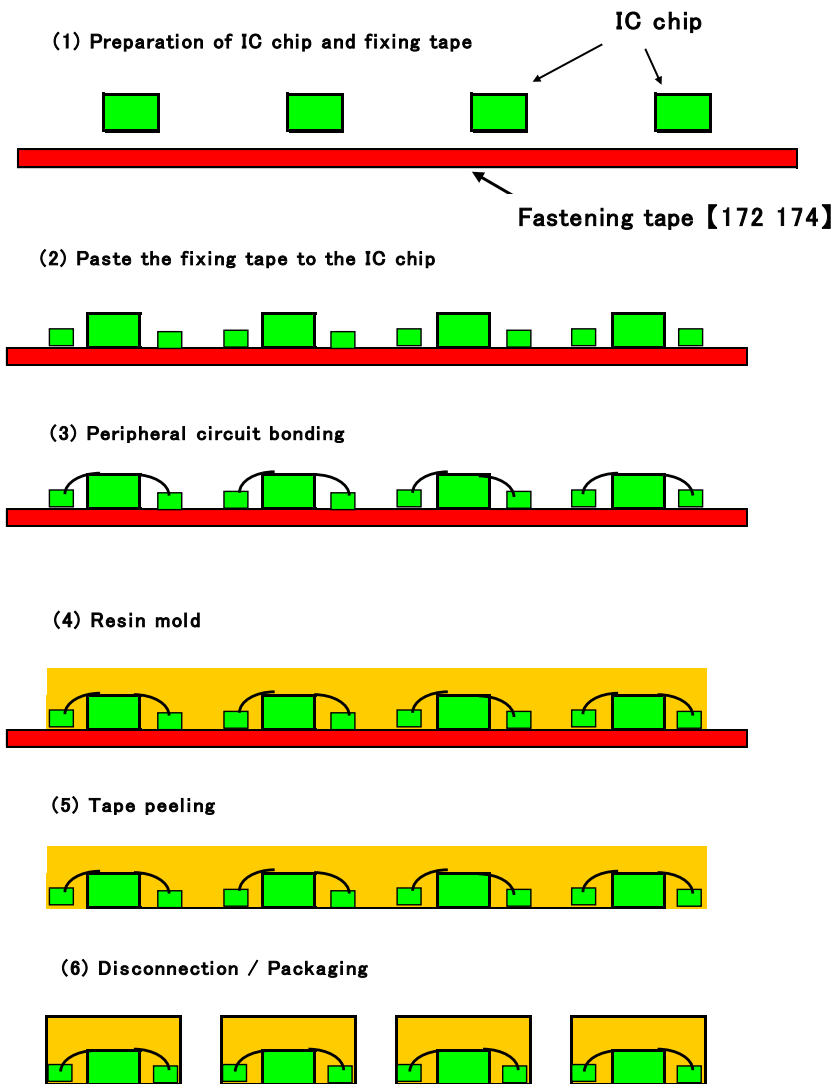
Good acid resistance.

Application example for masking process

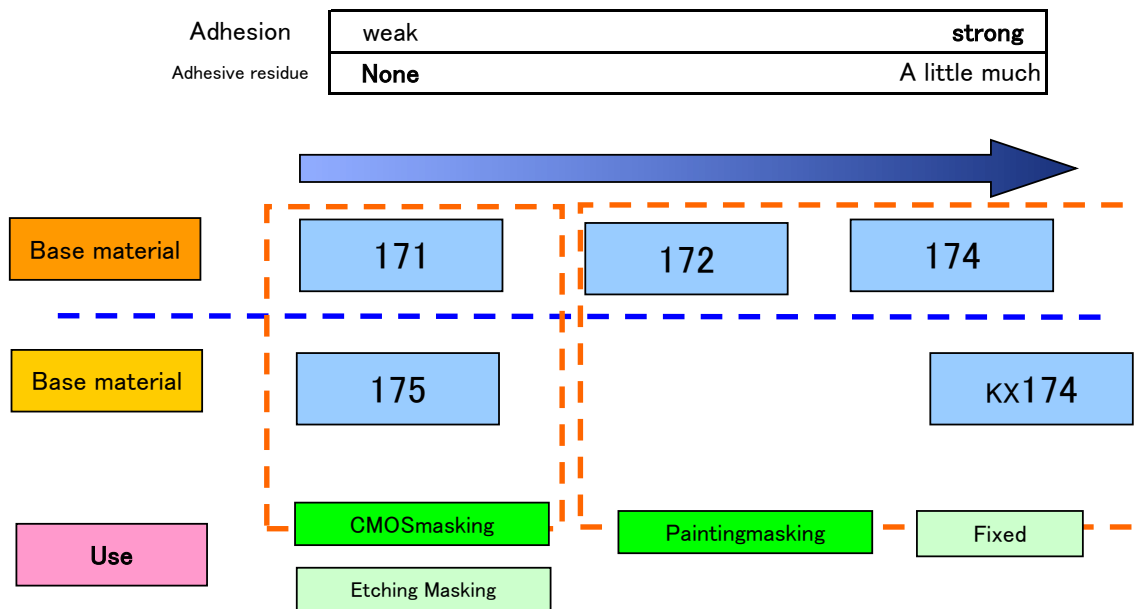


【Series 172 · 174】

Fixing tape for IC package molding

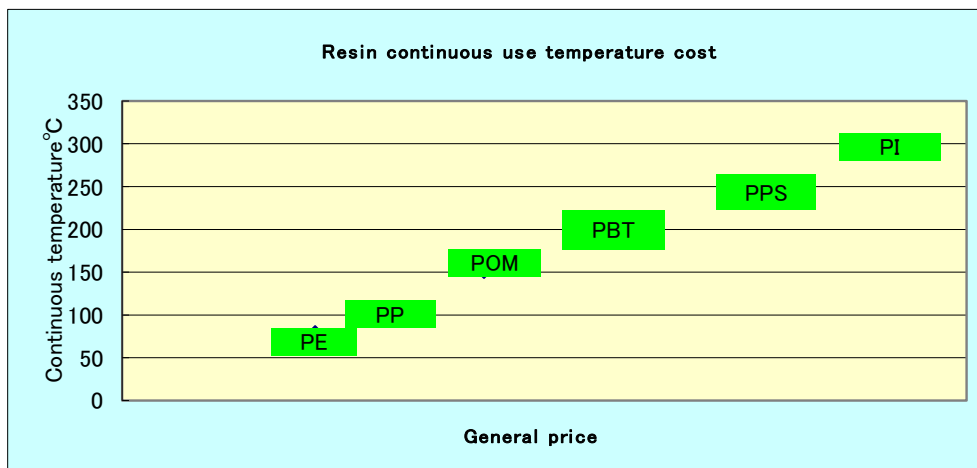


Selection of product number



[Reference material -1]

Heat resistance of general resin and general price



ISO 1043 notation

PI Polyimide

PPS Polyphenylene sulfide

PBT Polybutylene terephthalate

POM Polyoxymethylene

PP polypropylene

PE polyethylene

[Reference material 2] Thermal stability of polymer

Melting point (heat resistance) $T_m = \frac{\Delta H_m}{\Delta S_m}$

Enthalpy change of melting Intermolecular interaction

$$\Delta H_m = H_a - H_b$$

Enthalpy change of melting Molecular flexibility

$$\Delta S_m = S_a - S_b$$

The larger the intermolecular interaction, the larger ΔH_m .

The smaller the bendability of the molecule, the smaller ΔS_m .



Heat resistance (thermal)

For improving the thermal durability (thermal stability)

- ① Improvement of intermolecular force (intermolecular crystallinity) and improvement of molecular bonding

Intermolecular force	Crystalline polymer (Polyamide, etc.)
Molecular bond	Silicone resin, fluoro-resin
- ② Introduction of crosslinking structure

Rubber	Thermosetting resin (phenol, epoxy resin)
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- ③ Introduction of chain rigidity group

Heat resistant polymer	Polyimide, etc.
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Precautions on use

- All technical data are prepared based on tests and measured values conducted at the laboratory of Joint Giken Kagaku Co., Ltd. However, product characteristics may vary greatly depending on environment and adherend. Therefore, regarding these characteristic data, it is a reference value, not a guaranteed value. Before using it please make sure that this product is suitable for the intended use and environment.
- The above measurement is performed at room temperature (23 ° C).
In case of low temperature (5 °C or less), adhesion may decrease sharply.

Caution on storage

- Please be sure to put it in a box and keep it.
 - Please choose a cold and dark place not to be exposed to direct sunlight for the storage location.
- In particular, please do not expose to high temperature and high humidity (temperature 30 °C or more and humidity 50% or more forbidden).

Published in December 2018

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