



TECHNICAL LEAFLET

SUNSTAR ENGINEERING INC.

Non-Solvent type Mastic Adhesive for Pre-coated Steel **PENGUIN CEMENT # 1551A**

Penguin Cement # 1551A is a synthetic rubber based non-solvent mastic adhesive, which is designed especially for hood and trunk lid of automobiles. It provides excellent elasticity and bonding performance as an anti-fluttering adhesive.

a). Characteristics

1. Excellent adhesion and stability to oily steel and zinc-coated steel
2. Excellent rust prevention.
3. No threading and excellent workability.
4. Excellent shower resistance.

b). Applications

1. Anti-fluttering adhesive to bond outer panel and inner panel of hood, trunk lid, door etc of automobiles.
2. An adhesive/sealant to seal jointed parts.

c). Physical Properties

| | |
|---------------------------------------|---------------------------|
| Appearance | : White Paste |
| Viscosity (20°C) | : 350x10 ⁴ cps |
| Specific Gravity | : 1.40 |
| Non-Volatile Content (%) | : 99 % |
| Sagging | : 0 mm |
| Slipping on Oily Surface | : No Slip |
| Hardness (160°C, 15 min's) | : 20 |
| Elongation | : 250 % |
| Rust Prevention | : No Rust Observed |
| Shear Strength (kgf/cm ²) | |

| | Oily Steel | Zinc-coated |
|------------------|------------|-------------|
| Initial | 8 CF | 8 CF |
| Heat-Aging | 11 CF | 11 CF |
| Water Resistance | 9 CF | 9 CF |

CF = Cohesive Failure

1
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d). Test Method

| | |
|-----------------------------|---|
| Viscosity | : BS Type No. 7 rotor x 2 rpm |
| Non-Volatile Content | : 105°C x 3 hrs |
| Sagging | : MIL Method 20°C x 30 min |
| Slipping on Oily Surface | : After applying approx. 3g of Penguin Cement # 1551A to oily steel panel (quantity of oil: approx 2g/m ²), set the steel panel vertically and check slipping of # 1551A. |
| Hardness | : JIS-A Hardness |
| Curing Condition | : 170°C x 20 min |
| Shear Strength | |
| Thickness of adhesive layer | : 3mm |
| Lap | : 25 x 25 mm ² |
| Cross-head speed | : 50 mm/min |
| Curing Condition | : 170°C x 20 min |
| Aging Condition | |
| Heat Aging | : 100°C x 1 week |
| Water Resistance | : 50°C/95%RH x 1 week |
| Elongation | : #2 dumb bell |
| Cross-head speed | : 50mm/min |
| Curing Condition | : 170°C x 20 min |
| Rust Prevention | : Salt water spray test for 480 hrs |

e). Usage

Use high pressure pump and extrude with flow gun.

f). Precautions

1. Keep at cool and dark place
2. In case of skin contact, wash thoroughly with soap and water
3. In case of eye contact, wash out with water for more than 15 mins and immediately get medical care
4. If swallowed, immediately call a doctor

g). Packaging

| | |
|----------|-------|
| Drum | 250kg |
| Pail can | 25kg |