PRODUCT DATA

Nippon Steel

TECHNICAL BULLETIN

Structural Bonding Compound / Adhesive
NS 270 Clear and Black

Product Description

Nippon Steel NS 270 is a two-part, medium viscosity epoxy resin system designed primary for high strength, industrial grade bonding of metal, aluminum, plastic, rubber, ceramic, wood and etc,. It is available in clear or black.

Once mixed, the two component epoxy cures at room temperature to form a tough, amber-beige bond line with excellent resistance to peel and impact forces.

When fully cured, the epoxy offers superior thermal shock resistance, excellent mechanical and electrical properties and able to withstands wide variety of solvents and chemicals

NS 270 is non corrosive to copper and other metals, it offers good thermal shock resistance and excellent retention of electrical insulation properties under high humidity conditions.

NS 270 has a pot life of approximately 70 minutes, a tack-free time of about 2 hours and is fully cured after 48 hours at 25ºC.

The NS 270 system is ideal for the bonding and sealing of many heat sensitive or delicate components such as glass diodes, sensors as well as for transformers, coils, chokes, relay etc.

Handling / Curing Information

1. For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed.

2. Mix thoroughly by weight (ratio 1:1) to obtain a uniform color.

3. Apply product evenly to both surfaces to be joined for optimum bond strength.

4. Allow the curing temperature above 16ºC, heat up to 93ºC will speed up the curing.

5. Excess uncured can be cleaned up by xylene or ketone solvents.

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Typical Uncured Properties

Test	Part A	Part B
Colour	Clear or Black	Light Yellowish
Base	Epichlorohydrin and Bisphenol A	Modified Amine
Viscosity @ 25ºC	11,000 – 14,000 cps	40,000 – 60,000 cps
Density @ 25ºC	1.16 g/ml	1.19 g/ml
Mixing Ratio	1 : 1 by weight	
Worklife	60 – 70 minutes @ 25ºC	

Typical Cured Properties

Test	Typical Value
Colour	Clear or Black
Tack Free Time	2 – 3 hour
Shore D Hardness (ASTM D-2240)	85
Glass Transition Temperature by DSC	44ºC
Tensile Strength	6,500 psi
Operating Temperature	≤ 150°C
Intermittent Temperature	200°C
Flexural Strength	220,000 psi
Compressive Strength	7,500 psi
Thermal Coefficient of Epansion By TMA Below Tg Above Tg	 90×10^{-6} units/unit/ºC 190×10^{-6} units/unit/ºC
Thermal Shock Resistance Potted Washer Olyphant Test	 Pass 5 cycles without cracking
Dielectic Constant (ASTM D-150)	3.6 @ 1KHz @ 23ºC
Dielectic Strength (ASTM D-149)	830 volts/mil
Volume Resistivity	4.3×10^{14} ohm-cm

Note: The technical information should be considered typical or representative only and should not be used for specification purposes.

Storage and Shelf Life

Storage: Store product at 16ºC - 17ºC for optimum storage life.
Shelf Life: 2 years when kept in original, unopened container.