TECHNICAL
DATA SHEET

NITTO DENKO
NITTO DENKO CORPORATION
Electronic Materials Business Sector
Semiconductor Related Products Division

CLEAR TRANSFER MOLDING COMPOUND
NT-8590

NT-8590 is a highly transparent resin whose main component is epoxy resin. It is a rapid-curing product which enables high productivity.

1. FEATURES

1) Rapid-curing brings short molding time.
2) For encapsulation of opto-devices, it possesses superior moldability and reliability.

2. MOLDING CONDITIONS

Different curing condition will be applied with different mold design, package type, device type etc. General recommendation is as follows.

Outer releasing agent (silicones or fluorinated compounds) must be applied onto the mold surface prior to use of this product to ease its release from the mold dies.

Molding condition:

Mold Temperature:	150 – 160 °C
In-mold cure time:	1.5 – 2.5 min
Transfer pressure:	3 – 8 MPa (30 – 82 kgf/cm^2)

Post mold curing condition

Temperature x time:	150 °C x 2 hrs, or 120°C x 16 hrs

Note:
Post cure time above is the required time after molded packages reach to the indicated temperature. Temperature rising rate of molded package changes depending on air flowing condition and heat capacity of packages and their holders in the oven. Please confirm the time needed to reach the cure temperature and add that time to recommended one above.

3. PROPERTIES

3.1 GENERAL PROPERTIES

Inspected specimens were cured under following condition.

In-mold curing : 150 °C x 4 min

Post mold curing : 120°C x 16 hrs

PROPERTY	TEST CONDITION	UNIT	VALUE	REMARKS
Specific Gravity	JIS K 6911	—	1.24	
Hardness	Shore D		85	
Molding shrinkage	JIS K 6911	%	1.35	
Water Absorption		wt%	0.16	25±5℃ 24hrs
Boiling Water Absorption			0.46	95℃×1h
Flexural Strength		N/mm^2	135	
Flexural Modulus			3200	
CTE below Tg		K^{-1}	$6.2x10^{-5}$	
CTE above Tg			$19x10^{-5}$	
Tg - (TMA)		°C	128	
Tg - (DSC Tmg)			126	
Volume Resistivity		Ω·cm	$61x10^{15}$	25℃
Dielectric Constant		—	3.7	100kHz
Dissipation Factor		%	1.4	100kHz
Transmittance at 400 nm	Spectrophotometer	%	>90	$1.0mm^t$
Refractive Index	Abbe method	-	1.55	at 589.3 nm

* The above values are not specifications and cannot be guaranteed.

3.2 IONIC IMPURITIES IN EXTRACTED WATER

Test Method

Preparation of specimen

Molding condition : 150 °C x 4 min

Post cure condition : 150 °C x 2 hrs

Extracting Condition

Specimen : 60 mesh pass granulated product

Extraction : 121 °C x 0.2 MPa (2 atm) x 20 hrs

PROPERTY	UNIT	VALUE
Electric Conductivity	$\mu\Omega^{-1}$·cm	450
pH	—	2.9
Na^+	ppm	1.0
Cl^-	ppm	90

* Measured by : Na^+ = Atomic absorption spectrometry, Cl^- = Ionic chromatography

* Above figures are typical ones and not for specification purposes.

4. ATTENTION

Before use, see Material Safety Data Sheet (MSDS) of this product.