TECHNICAL DATA SHEET

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

CLEAR TRANSFER MOLDING COMPOUND
NT-800

NT-800 is the transparent transfer molding compound with excellent heat and weather resistance. It is suitable for encapsulation of devices in blue LEDs and the like, for which high heat and weather resistance are particular requirements.

1. FEATURES

1) It has high glass transition temperature, superior resistance to heat induced color change.
2) It has superior ultra-violet light resistance and high weather resistance.
3) For encapsulation of opto-devices, it possesses superior moldability and reliability.

2. MOLDING CONDITIONS

The following table shows the recommended cure profile, that may be adjusted depending on the mold die design, package design, and the characteristics of the semiconductor device molded in the package.

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:	145 – 160 °C
In-mold cure time:	3.0 – 5.0 min
Transfer pressure:	3 – 8 MPa (30 – 82 kgf/cm^2)

Post mold curing condition

Temperature x time:	150 °C x 3 hrs

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Note:
Post cure time above is the required time after the temperature of molded package goes up to the indicated one.
Temperature rising rate of molded package changes depending on air flowing rate and heat capacity of package and its holder in the oven. Please confirm the time the packages heated up to the cure temperature and add it in the time packages kept in the oven.

3. PROPERTIES

3.1 GENERAL PROPERTIES

Inspected specimens were cured under following condition.

In-mold curing : 150 °C x 4 min

Post mold curing : 150 °C x 3 hrs

PROPERTY	TEST CONDITION	UNIT	VALUE	REMARKS
Specific Gravity	JIS K 6911	—	1.29	
Hardness	Shore D		80	
Mold shrinkage	100mmϕ 2mm^t	%	1.31	
Hardness at molding temperature vs.molding condition	Shore A		Fig. 1	
Water Absorption	JIS K 6911	wt%	0.26	25±5℃ 24hrs
Boiling Water Absorption			0.42	95 °C×1h
Flexural Strength		N/mm^2	120	
Flexural Modulus			3400	
CTE below Tg		1/°C	$6.3x10^{-5}$	
CTE above Tg			$17x10^{-5}$	
Tg - (TMA)		°C	155	
Tg - (DSC)			146	
Volume Resistivity (ρ_v)		Ω·cm	$15x10^{15}$	25℃
Dielectric Constant		-	3.3	1MHz
Dissipation Factor		%	2.5	1MHz
Transmittance (at 400nm)	Photospectrometer	%	55.7	
Refractive Index	Abbe method		1.52	at 589.3 nm

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

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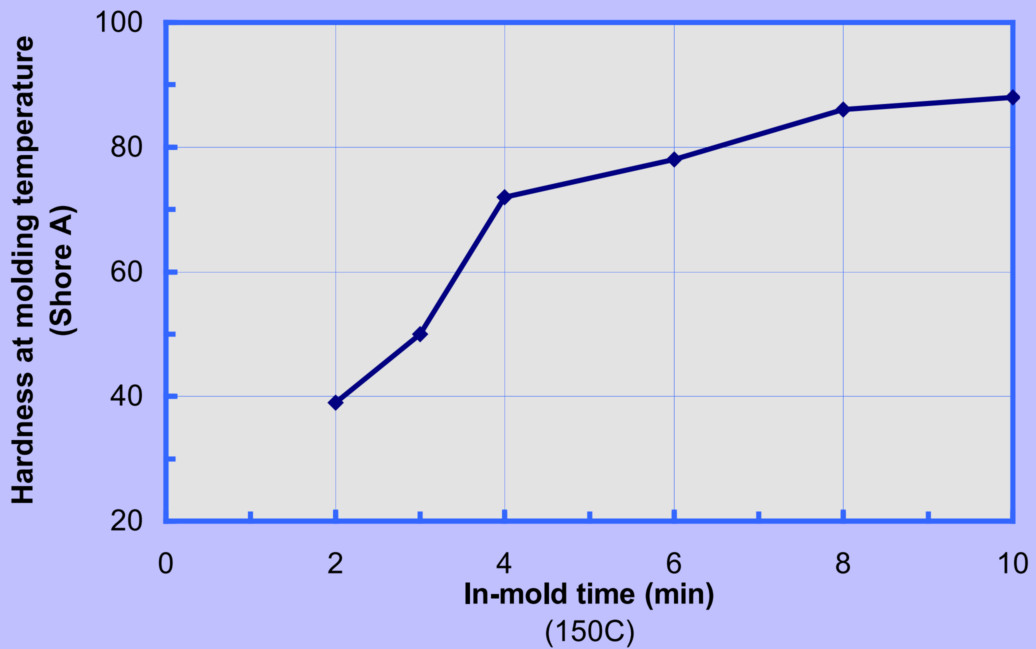

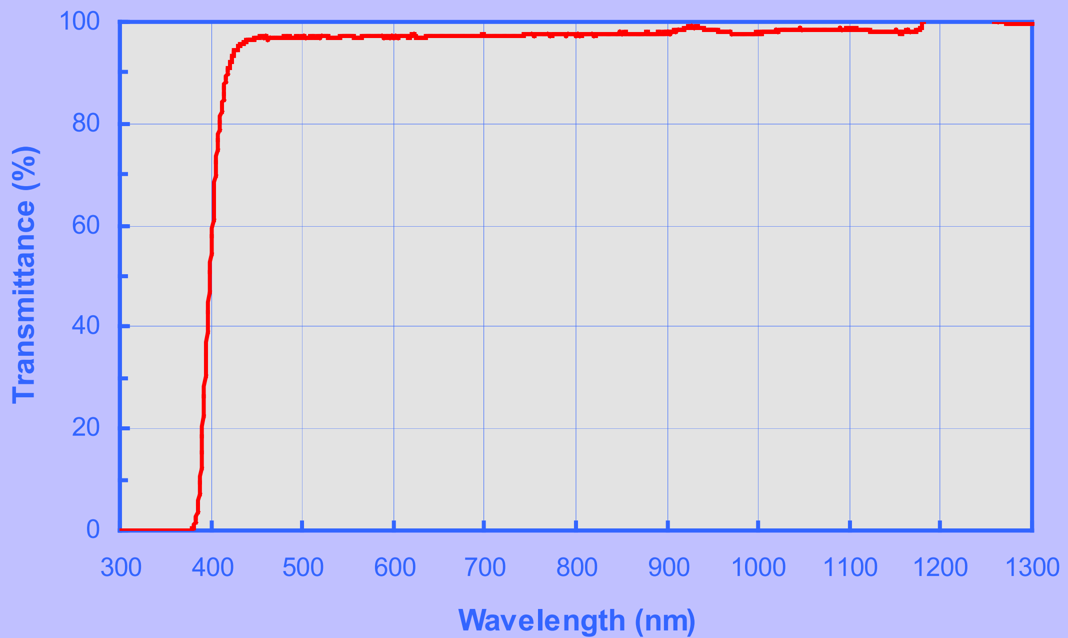

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3.2 IONIC IMPURITIES IN EXTRACTED WATER

Test Method

Preparation of specimen

Molding condition : 150 °C x 4 min

Post cure condition : 150 °C x 3 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	$\mu\Omega^{-1}\cdot cm$	680
pH	—	2.7
Na^{+}	ppm	1.5
Cl^{-}	ppm	180

* 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.

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