



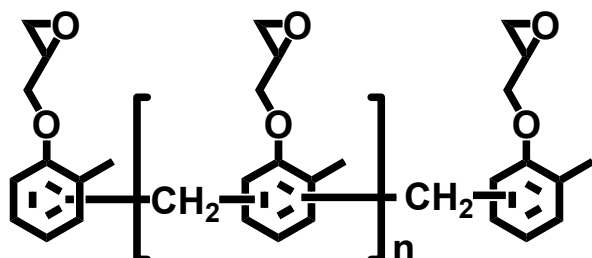
## EPICLON<sup>®</sup> N-600 series

### o-Cresol novolac type epoxy resin

#### General description

EPICLON<sup>®</sup> N-600 series are multi-functional epoxy resins derived from o-cresol-formaldehyde novolac, N-600 series provide tightly cross-linked cured systems with more excellent heat resistance compared with the conventional bisphenol-A based resin. N-600 series are applied for many usages which are “Semiconductor encapsulating materials (EMC)”, “Electric laminate materials for printed circuit board (PCB)”, “Insulation power coating materials”, “High heat resistant adhesive materials”, and so on. Especially, N-600-EXP and N-600-EXP-S series are suitable for “Semiconductor encapsulating materials (EMC)” due to its high purity.

#### Chemical structure



#### Typical properties (General grade)

	N-660	N-665	N-670	N-673
Appearance	Marble lock	Marble lock	Marble lock	Marble lock
Epoxy equivalent, g/eq	206	207	209	209
Softening point, °C	66	69	73	77
ICI viscosity, mPa.s	2.3	3.2	4.4	6.2
Hydrolyzable Cl content, wt ppm	<600	<600	<600	<600
Na ion, wt ppm	<1	<1	<1	<1
Cl ion, wt ppm	<1	<1	<1	<1

	N-680	N-690	N-695
Appearance	Marble lock	Marble lock	Marble lock
Epoxy equivalent, g/eq	211	213	213
Softening point, °C	87	93	94
ICI viscosity, mPa.s	13	25	29
Hydrolyzable Cl content, wt ppm	<650	<800	<800
Na ion, wt ppm	<1	<1	<1
Cl ion, wt ppm	<1	<1	<1

Read The Material Safety Data Sheet Before Handling, Storing or Using This product. Rev.2007.2

Some of the product specifications in this brochure may be slightly different from those in previous publications. The change reflects most recent manufacturing experience and/or changes in test procedures. Due to market needs and other reasons, product specifications may change or a product may be discontinued.

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their applications. We warrant that our products will meet our written specifications. Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness for a particular purpose, nor is any protection from any law or patent to be inferred. All patent rights are reserved.



## Typical properties (High purity grade)

	N-655-EXP-S	N-665-EXP	N-665-EXP-S	N-670-EXP
Appearance	Marble lock	Marble lock	Marble lock	Marble lock
Epoxy equivalent, g/eq	201	203	202	203
Softening point, °C	58	69	72	74
ICI viscosity, mPa.s	1.3	3.1	3.9	4.7
Hydrolyzable Cl content, wt ppm	<400	<400	<400	<400
Na ion, wt ppm	<1	<1	<1	<1
Cl ion, wt ppm	<1	<1	<1	<1

	N-670-EXP-S	N-672-EXP	N-674-EXP-S	N-685-EXP-S
Appearance	Marble lock	Marble lock	Marble lock	Marble lock
Epoxy equivalent, g/eq	203	204	203	203
Softening point, °C	75	75	77	85
ICI viscosity, mPa.s	5.3	5.2	6.4	12
Hydrolyzable Cl content, wt ppm	<400	<400	<400	<400
Na ion, wt ppm	<1	<1	<1	<1
Cl ion, wt ppm	<1	<1	<1	<1

## Evaluation formulation

	Parts by weight
<b>EPICLON® N-600 series</b>	
Hardener: PHENOLITE® TD-2131 (Novolac type phenolic resin)	Stoichiometric rate
Accelerator: Triphenylphosphine	1.0phr

Curing schedule : 175°C x 5hrs.

## Curability and Cured resin properties

	N-655-EXP-S	N-665-EXP	N-670-EXP-S
Gelation time 150°C, sec	80	73	63
T <sub>g</sub> by DMA, °C	179	187	196
Moisture Absorption, 85°C/85%RH 300hours, %	1.58	1.60	1.62
Coefficient of Thermal Expansion, ppm	55	55	55

## Storage

EPICLON® N-600 series has a shelf-life of at least 6 month if it is stored in a cool, dry area.

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