



Technical Data Sheet

NM Infusion 693

Utg: 2006-02-13

Ers: 2006-09-22

Rev: 2011-05-02

General Description

NM Infusion 693 is an extremely low viscosity two pack epoxy system, suitable for infusion processes with demands on high T_G .

NM Infusion 693 has a very low vapor pressure and can be considered as odorless. Vacuum causes no gas bubbles.

Storage stability of **NM Infusion 693** is about 6 months at room temperature. Storage at low temperature is recommended.

Processing Instructions

The mixture of components is very important, poor mixing may result in soft spots.

Mix thoroughly in a container, transfer the mixture into a clean container and mix further. Dosage should always be made on a scale with sufficient accuracy or a well calibrated dosage system.

NM Infusion 639 has a low reactivity and the viscosity increases very slowly during the infusion process. Large and complex structures can be infused without problems.

NM Infusion 693 is not suitable for open mould processes, due to the low viscosity. For such applications, **NM Laminering 625**, **NM Laminering 650** or **NM Laminering 3070** are recommendable.

Surface Preparation

Film forming release agent is recommended, for example Marbocote 220. Wax-based release agents are normally not recommended and test should be performed before use of these types.

Curing

Curing can take place at room temperature or as a post-curing at elevated temperature.

The low reactivity involves a long demoulding time at room temperature curing. T_G should as a minimum reach room temperature before demoulding.

T_G development at +23°C/73°F curing temperature can be seen in the table below typical properties.

An increase or decrease of the curing temperature with 10°C gives a halved resp. doubled demoulding time.

NM Infusion 664 should first cure at room-temperature (20 – 23°C / 68 – 73°F) for 24 - 30 hours before post-curing.

It is important that the temperature is ramped up slowly to the final curing temperature. Normal increases are between 0.1 - 0.3 K per minute. It is often a combination of thickness and laminate structure, which determines the speed. The optimum cure cycle must be determined for each case.

NM Infusion 664 can be stored for a longer period at room-temperature and be post-cured later.

Completion Work

A dry surface must be sanded to ensure adhesion to the next layer.

NILS MALMGREN AB

P.O Box 2039
S-442 02 YTTERBY, SWEDEN

Phone: +46 303-936 10
Fax: +46 303-928 55

Quality certified since 1990

E-mail: info@nilsmalmgren.se
Home site: www.nilsmalmgren.se

Typical Properties

Resin NM Infusion 693
Hardener NM Härdare 650 B

Mixing ratio:

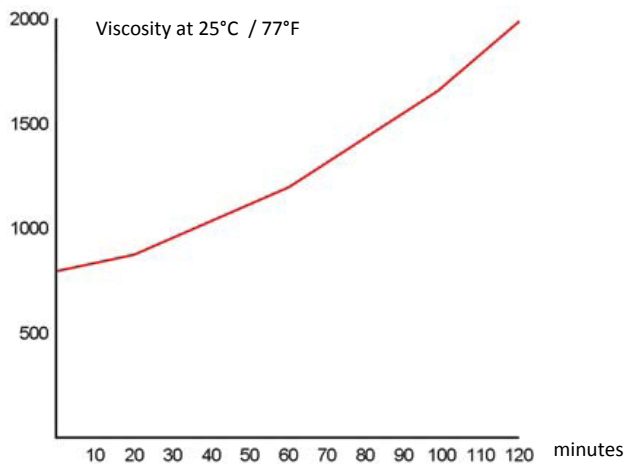
Resin – Hardener 100 – 45 by weight
100 – 54 by volume

Density: 1079 kg/m³
Viscosity: 0.8 Pa·s
Dry content: 100%
Potlife 100g 20°C: >180 minutes

T_g development at different temperatures

23 hours, 23°C / 73°F
+ 6 hours, 30°C / 86°F: 30°C / 86°F
2 dygn, 23°C / 73°F: 38°C / 100°F
3 dygn, 23°C / 73°F: 48°C / 118°F
4 dygn, 23°C / 73°F: 52°C / 126°F
7 dygn, 23°C / 73°F: 54°C / 129°F
2 veckor, 23°C / 73°F: 56°C / 133°F
3 veckor, 23°C / 73°F: 60°C / 140°F
29 h, 23°C / 73°F +
4h, 150°C / 302°F,
ramp 0.3°K / min: 168°C / 334°F
29 h, 23°C / 73°F +
4h, 150°C / 302°F,
ramp 0.3°K / min +
1 h 180°C / 356°F: 171°C / 340°F

Viscosity development at 25°C/77°F



Flexural strength
4h, 150°C / 302°F +
1 h, 180°C / 356°F: 91.5 MPa

E-modulus
4h, 150°C / 302°F +
1 h, 180°C / 356°F: 3.0 GPa

Colour: Transparent

Normal packing:: On request

Cleaning solvent: Acetone

*Flexural strength and E-modulus according to ISO 178.
T_g measured according to DSC 20K/min*

Disclaimer

This product's technical specifications are developed by experience in field and laboratory by us.

We reserve the right to change products as well as data. Current data sheets are available at our website and with us. We cannot assume responsibility for use in areas that we do not know. The user shall always evaluate products for their intended use and we guarantee only the material properties. For every product we offer reference objects separately.

NILS MALMGREN AB

P.O Box 2039
S-442 02 YTTERBY, SWEDEN

Phone: +46 303-936 10
Fax: +46 303-928 55

Quality certified since 1990

E-mail: info@nilsmalmgren.se
Home site: www.nilsmalmgren.se