MMAXXUS LO NRG

Technical Data Sheet

MMAXXUS LO NRG is a 2-part structural bonding adhesive based on a blend of methacrylates. LO NRG is designed for high strength structural bonding of low surface energy plastics without the need for primers or pre-treatments. LO NRG benefits from a 1:1 mix ratio which means it is easy and economic to dispense. LO NRG has a lower odor than is typically found with acrylic products and is non-flammable.

Suitable Substrates

It can be used with a very wide range of substrate materials including [1]:

- *Polypropylene (PP)*
- *Polyethylene (PE)*
- *Polycarbonate (PC)*
- *Polystyrene (PS)*
- *PET*
- *PMMA*
- *ABS*
- *Acrylics*
- *Styrenics*
- *TPO*

Availability

LO NRG can be supplied in the following formats:

- *50 ml cartridges*
- *400 ml cartridges*
- *19 lt plastic containers*
- *190 lt steel drums*

Physical Properties (@25°C)

	Part A	Part B
Viscosity (cP) [2]	80,000 - 135,000	25,000 - 45,000
Density (g/cm³)	0.97	0.97
Mix Ratio	1	1

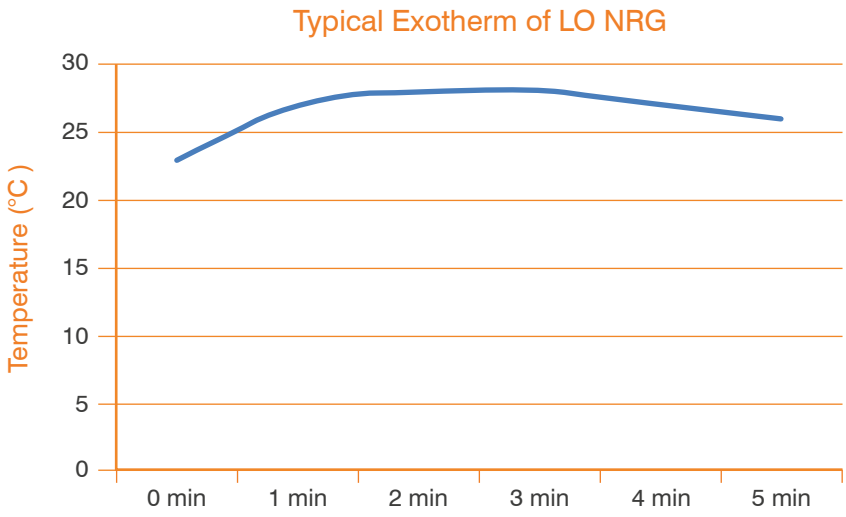
Characteristics

Working Time [3]	2 - 3 minutes
Fixture Time [4]	7 - 10 minutes
Operating Temperature	–50°C - +120 °C
Gap Filling Capability [5]	0.5 mm - 2.0 mm
Flash Point	40°C
Mixed Density (g/cm³)	0.97

Bonding Performance (@25°C)

Tensile Strength, Polypropylene (MPa)	5 - 7
Tensile Modulus (MPa)	700 - 900
Tensile Elongation (%)	1 - 3
Lap Shear Strength, Polypropylene (MPa)	6 - 8

Typical Cure Profile



Handling and Application

MMAXXUS LO NRG products are hazardous. Keep containers closed after use. Gloves and safety glasses should be in use when applying the products in order to avoid skin and eye contact. In the case of skin contact, wash with soap and water. In the case of eye contact, flush with water for 15 minutes and seek medical attention. Harmful if swallowed. Keep out of reach of children. Avoid heat, sparks and open flames. See MMAXXUS MSDS for detailed safety information.

N.B. Large amounts of heat can be generated when large masses of this product are combined at one time; the resultant heat generation can result in the release of trapped air, steam and volatile gasses. To avoid this, use only enough material as is required for the application and confirm gap thickness to no more than 4mm. Further application advice is available upon request.

Dispensing Adhesive

MMAXXUS LO NRG may be applied manually or with automated equipment. Static mixer selection is critical to the correct functioning of this adhesive. To assure maximum bond strength, surfaces must be mated within the specified working time. Use sufficient adhesive to ensure that the jointed area is filled when the parts are pressed together. All adhesive application, part positioning and fixturing should be completed within the working time of the adhesive. All automated equipment should be constructed of stainless steel or aluminium,. Avoid contact with copper in all fittings and pumps etc. Seals and gaskets should be PTFE, ethylene/propylene or polyethelene. Avoid Viton, neoprene or nitrile/BUNA-N elastomers for gaskets and seals. To clean up solidified adhesive, carefully scrape away excess and clean with solvent.

Effect of Temperature

Ideal conditions for adhesive use are between 18°C and 25°C. Temperatures below 18°C will slow cure speed; above 26°C will increase cure speed. The viscosities of the adhesive are also affected by temperature therefore any automated filling or dispensing systems should maintain constant temperatures throughout the year.

Storage and Shelf Life

Shelf life of MMAXXUS LO NRG series adhesive (Part A) is 6 months, shelf life of Part B is 6 months. These storage times are based on continuous storage between 12°C and 23°C. Long term storage above 23°C will reduce the shelf life. Avoid temperatures above 35°C at all times. These products should never be frozen. Air conditioned or refrigerated storage between 10°C and 15°C will prolong shelf life.

Notes

(1) Xtraloc recommend that all substrates be tested with the selected adhesive in the anticipated service conditions in order to determine the adhesives suitability for use.

(2) Tested on Brookfield RV at 25°C, Spindle TC93 at 2.5RPM.

(3) Working time is defined as the time between the correct and thorough combination of both adhesive parts and the point at which the adhesives are no longer useable i.e. it has started to gel. The times presented were tested at 24°C.

(4) Fixture time is defined as the time in which the bonded static joint will support a 1kg dead weight on a 12.7mm x 25.4mm lap joint at 23°C.

(5) Figures quoted are for gap-filling capability. It should be noted that optimum bond thickness is 0.6 to 0.80mm in order to achieve maximum strength development.

(6) All data presented in this sheet are correct at the time of issue and have been determined by Xtraloc in its own laboratories. The data presented are typical properties obtained by Xtraloc over multiple test phases. The data are presented as a guide and a selection tool, these data should not be used in place of thorough evaluation and application testing under anticipated conditions. Specific use, materials and product handling are beyond the control of Xtraloc, therefore our warranty is limited to the replacement of defective Xtraloc product.

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