



Northstar Polymers (Div. of Tandem Products, Inc.)
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MGB-A90E

Room-Temp Mixable High Rebound, Hydrophobic Formula

Prepolymer (Part-A): MGE-046 Curative (Part-B): BAN-005POR10

MGB-A90E is a room-temperature-mixable, semi-high-performance polyether polyurethane system. The material is specifically designed so that the user can manually mix the component during the relatively long pot-life. The cured elastomer products exhibit high rebound and good stability in the outdoor environments. This combination of features makes MGB-A90E good raw material candidate to make **custom skateboard wheels, scooter wheels, inline skate wheels, liners/bumpers used outdoors and in wet conditions** as well as many specialty products. This formulation is designed to be used in smaller operations without dispensing equipment making a smaller quantity of products. For a larger production rate, please consider using MGB-A90A for a faster mold cycle and more enhanced physical properties.

Mechanical Properties	Typical Value
Durometer Hardness	90 A
Tensile Strength	1600 psi
Ultimate Elongation	508 %
Tear Resistance: Die C	430 pli
Tear Resistance: Split	129 pli
Bashore Rebound	53 %

Mixing Ratio

	Prepolymer (A)	Curative (B)
Product Code	MGE-046	BAN-005POR10
Weight Ratio	1.000	0.097
Volume Ratio	1.000	0.100
Gear Ratio	100	10
NCO Index	1.02	NA

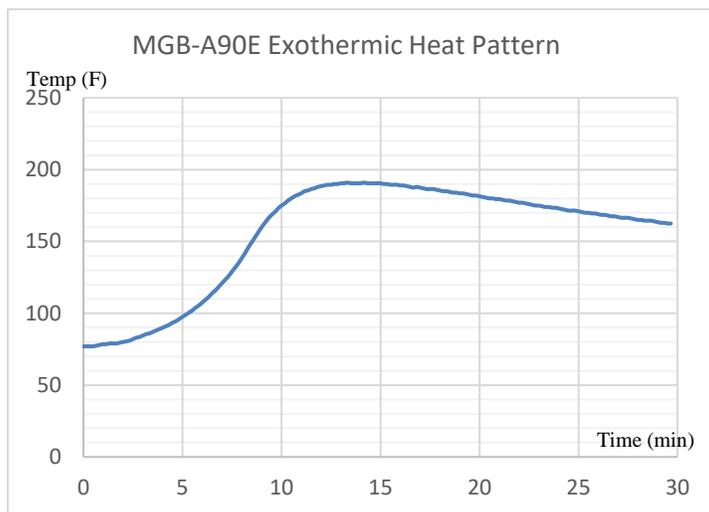
Processing Temperatures

Prepolymer Temperature	Ambient (72 °F)
Curative Temperature	Ambient (72 °F)
Mold Temperature	100 - 120 °F
Post Cure Temperature	180 – 200 °F



Cure Pattern

Pot-Life	8 minutes
De-molding Time	1 – 2 hours (In a mold at 180 °F)
Post Cure @180 °F	4 – 20 hours



Component Properties

Prepolymer	MGE-046
Specific Gravity	1.056
Viscosity at 72 °F	3500 cps
% NCO	9.10
Equivalent Weight	462
Appearance at 72 °F	Pale Yellow Viscous Liquid
Storage Temperature	77 °F – 86 °F

Curative	BAN-005POR10
Specific Gravity	0.979
Viscosity at 77 °F	70 cps
Equivalent Weight	46
Appearance at 72 °F	Green or amber color liquid
Storage Temperature	77 °F – 86 °F

NOTE* The part-A component, MGE-046, freezes just below the room temperature range. If it is suspected to be exposed to cold temperatures, please thaw the material to about 140 °F and store at room temperature in its liquid state. Storing MGE-046 at its frozen state causes the material to deteriorate much faster. Be sure to always purge the headspace in the container with dry nitrogen or argon gas to prevent the moisture contamination. Moisture contamination on MGE-046 is not reversible.

The constituents of the part-B component, BAN-005POR10, can separate into layers during storage. Please agitate the content before dispensing. The part-B component may freeze just below the room temperature range. If it is frozen, the material needs to be heated to about 77 – 110 °F to thaw. If you see flakes or crystals in the liquid, the material needs to be kept at the temperature between 77 and 110 °F for longer until all solid is dissolved into the liquid. Stir the material before use to ensure the homogeneous blend of the constituents. Be sure to always purge the headspace in the container with dry nitrogen or argon gas to prevent the moisture contamination.

Standard Packages:

- 5-gallon pails (40 pounds per pail)
- 55-gallon drums (450 pounds per drum)



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Storage:

Part-A Component

Part-A component (MGE-046) contains isocyanate material(s), which are very much sensitive to moisture. If it is left in air, part-A will react with atmospheric moisture and will be ruined. This reaction is non-reversible. Soon after opening a can and dispensing the content, nitrogen gas or negative-40-degree-dew-point dry air needs to be injected to the can to blanket the material. Store it in an air-tight container such as steel drums, sealed pails, or totes. Silica gel or calcium chloride desiccant filter should be installed to 55 gallon drum-vent for your drum feeding system.

The storage temperature should be at a room temperature between 72 °F and 86 °F. Do not store in heated storage above 104 °F (40 °C) as it induces adverse reaction within the material, which could degrade the material.

Note:

This isocyanate prepolymer (MGE-046) may freeze during the transportation and storage in the cold seasons. Frozen state of isocyanate prepolymer can be indicated by solid, gel, or high viscosity liquid state and cloudy color. This material may freeze just below room temperature. This product makes unwanted byproducts if it is kept frozen. It may ruin the material if it is store frozen for a long time. The frozen material must be thawed immediately. Please consult Northstar Polymers if isocyanate prepolymer is suspected to be frozen. Northstar Polymers will not refund or replace the material damaged from cold temperature and mishandling.

If a large amount of water mixes with a large amount of isocyanate base materials, the chemical reaction may produce a large amount of CO₂ gas and heat to create a hazardous condition. Keep the storage area free of water.

Under a certain combination of heat, catalyst (basic chemicals), amounts of reactive materials, and some other favorable conditions for the reaction, the water (or alcohol/glycol) to isocyanate reaction can reach a dangerous state of accelerated reaction. The accelerated reaction may create a very high temperature condition. The thermal decomposition of isocyanate based material by extremely high temperature or fire can produce toxic gasses and smokes. Please be sure that the containers are stored in dry indoor storage, away from source of large amount of water.

If a leak is found in a drum, please place the drum in such a position that the leaking part is at a higher part of drum so that the content no longer leaks out. Cover the leaking area with dry towel to prevent air from entering. If possible, transfer the material into new container(s) with nitrogen purge. If moisture enters into an isocyanate container from a small leakage, CO₂ gas may be produced to gradually pressurize the container. If pressure built up is suspected, open the bung (or cap) very slowly to release the pressure before you change the drum position.

Part-B (Curative) Component

The constituents of the part-B component, BAN-005POR10, can separate into layers during storage. Please agitate the content before dispensing. Part-B component is hygroscopic. If the material is exposed to ambient air, it absorbs moisture. Part-B component contaminated by moisture can become a source of excessive bubbles in the product after mixed with part-A. Avoid exposure of the material to moisture in air.





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Purging the empty space in the container with dry nitrogen gas, argon gas, or negative-40-degree-dew-point dry air is also recommended to prevent moisture contamination of part-B as well. (However, simply keeping the material in an airtight container may also be sufficient depending on the moisture level of the work place.)

Store it in a dry indoor storage at a room temperature between 65 and 90 °F. Avoid direct sunlight.

If this material is stored for a long time, the material may absorb air or gas inside the container, which may cause excess bubbles after while it is cast and/or molded. The material may need to be heated to 180 - 200 F range and degassed for 30 to 60 minutes above 29" Hg vacuum to eliminate infused air/gas from long term storage.

Safety:

The component materials are industrial-grade chemicals. Please keep them in a secure place and prevent access from any unauthorized individual. The personnel who handle these materials need to read the Safety Data Sheet (SDS) for detail information on safety and handling of the material. The SDS for each component is sent with the shipment of the material.

When using this material, be sure to operate in a wide-open area with good air movement, or in a well-ventilated area. Wear rubber gloves, long sleeves, and protective eyeglasses to prevent skin/eye contact of the material. When your operation involves heating or spraying of the material, and if you expect the isocyanate content level in the work place atmosphere may become above the threshold regulated by OSHA or by other appropriate working place safety standard, we recommend, in addition to the above, installation of a proper hooded dynamic ventilation system and/or using an appropriate type of respirator (such as a full-face respirator equipped with OSHA approved HEPA filters for particulate and organic vapor) to prevent inhalation of the fume.

Direct contact of polyurethane raw materials to skin/eye, as well as ingestion may lead to health problems. No eating or smoking should be permitted at the working area. The operator should wash hands well with soap and water after handling the materials and follow the other procedures of the Standard Industrial Hygiene Practices. Please refer to the MSDS for each component for the detailed health information.

For any questions, please contact Northstar Polymers.

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