MGG-A70DQ

Prepolymer (Part-A): MGA-018 Curative (Part-B): GBA-054

MGG-A70DQ high-performance quasi-polyether system is one of a family of polymer systems developed by Northstar Polymers for demanding work environments. Urethane elastomers molded with this system exhibit an excellent slide-abrasion resistance, high rebound, and excellent water resistance. This combination of features makes elastomers molded from MGG-A70DQ perfect for many applications including many other custom applications.

Physical/Mechanical Properties	ASTM#	Typical Value
Durometer Hardness	D 2240	70 A
Tensile Strength	D 412	3800 psi
Ultimate Elongation	D 412	900 %
Tear Resistance: Die C	D 624	350 pli
Tear Resistance: Split	D 624	200 pli
Taber Abrasion	D 4060	3.0 mg loss
Bashore Rebound	D 2632	65 %

Prepolymer	MGA-018
Specific Gravity	1.139
Viscosity at 77 ºF	900 -1200 cps
% NCO	23.00
Amine Equivalents	182.7
Appearance at 77 ºF	Pale Yellow Liquid

Curative	GBA-054
Specific Gravity	0.977
Viscosity at 180 ºF	250 – 300 cps
Equivalent Weight	536.9
OH Value	104.5
Appearance at 77 ºF	White waxy solid

Processing Conditions

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

Cure Pattern at the Above Conditions

Pot-Life	2-1/2 to 3 minutes
Gel Time	4 - 9 minutes
De-molding Time	30 – 40 minutes
Post Cure @180 °F	16 – 20 hours

Recommended Release Agent

100% solid silicone mold release (non water base)

Ratio Calculation

	Prepolymer (A)	Curative (B)
Product Code	MGA-018	GBA-054
Stoichiometry	1.000	1.000
NCO/OH Index	100	100
Weight Ratio	**1.000**	**2.939**
Volume Ratio	**1.000**	**3.519**

Storage/Handling Information

Part-A Component

Part-A component (MGA-018/ prepolymer) contains isocyanate component, which is 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-due-point dry air needs to be injected to the can to blanket the material. 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 and 100 ºF. The ideal storage temperature is 90 ºF

Disclaimer on Cold Temperature Damage: Part-A component (MGA-018) freezes just below room temperature. During the cold seasons, MGA-018 may freeze during shipping. Part-A component must be thawed immediately after receipt. If the material is left frozen for an extended period of time, a side reaction undergoes and the material will be ruined. It must be thawed immediately following the instructions provided by Northstar Polymers. Since we do not have control over the environment during the shipping, Northstar Polymers will not be able to guarantee the material arriving without freezing. We will not be replacing or refunding for the material(s) damaged from cold temperature or mishandling by the customer. This disclaimer must be accepted at the time of order.

Part-B Component

Part-B component (GBA-054) is waxy solid at room temperature. It needs to be heated to 160 – 180 °F (71 – 82 °C) to thaw to the liquid state. The constituent may be separated into layers in the container. The content must be agitated before dispensed out of container to ensure homogeneous mixture.

Part-B component is hygroscopic. If the material is exposed to ambient air, it may absorb moisture. Moisture contaminated part-B material may become source of degradation or excessive bubbles in the product. Store in an air-tight container such as steel drums, sealed pails, or totes. Purging the empty space above the material in the container with nitrogen gas or negative-40-degree-due-point dry air is also recommended to prevent moisture contamination of part-B as well.

The storage temperature should be at a room temperature between 65 and 100 ºF. Keeping this material at an elevated temperature to store may degrade the reactivity.

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 and thoroughly understand the contents of the Safety Data Sheet (SDS) for the detail information on safety and handling of the material. The current SDS for each component will be sent with the shipment of the material.

When using these materials, 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 applicable working place safety standard and regulations, 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.

If a large amount of water mixes with a large amount of isocyanate base materials such as MGA-018, 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.

For any questions, please contact Northstar Polymers.

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