Northstar Polymers (Div. of Tandem Products, Inc.)
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MPP-A65C

Technical Data Sheet

MPP-A65C is a room-temperature curable polyurethane casting resin system designed for concrete mold making and a wide range of general casting applications. Engineered for ease of use, it features a **1:1 mix ratio by volume**, ensuring simple and precise metering. The **low viscosity** of its components allows for exceptional mold surface detail reproduction, capturing fine textures with accuracy.

With an **extended pot life and gradual curing profile**, MPP-A65C provides ample working time for manual mixing and casting, making it ideal for small-scale applications. Once cured, it offers a firm yet flexible consistency, enabling molds to support heavy concrete and other casting materials with minimal deformation. Its excellent tensile and tear strength contribute to outstanding durability, extending the lifespan of molds and enhancing cost efficiency. MPP-A65C is the go-to solution for professionals seeking a reliable, easy-to-use, and long-lasting polyurethane casting resin for mold making and beyond.

Designations

System Name:	MPP-A65C
Part-A Component:	MPC-022 (Prepolymer)
Part-B Component:	PPC-020 (Curative)

Mixing Ratio

100: 100 = Part-A: Part-B by Volume
(100: 90 by weight)

Processing Temperature

Part-A:	72 – 86 ˚F
Part-B:	Ambient (72 – 82 ˚F)
Mold:	Ambient (72 – 82 ˚F)

Curing Pattern:

Pot-Life:	12 - 13 minutes at room temperature
Demolding Time:	4 to 6 hours at Ambient Temp (72 – 82 ˚F)

(Tested with 200 grams batch at ½" thickness.)

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Note: The material continues to cure at room temperature for the next 3 to 5 days to reach the final physical properties.

The component materials are moisture sensitive. The headspace in the containers must be purged with dry nitrogen gas (or argon gas) and stored in an air tight container to store. The component materials should be stored in the temperature range 72 – 86 ˚F all time. The shelf life of these component materials is 6 months under the good storage conditions.

Physical Properties (Typical Values)

Hardness (Shore Durometer)	60 – 65 A*	
Tensile Strength	1293	psi
Elongation	474	%
Die-C Tear	253	pli
Split Tear	80	pli

Note*: Durometer reading 10 seconds after the prove is pressed against the sample.

Component Properties (Typical Values)

	Prepolymer (Part-A)	Curing Agent (Part-B)
Code Number:	MPC-022	PPC-020
Specific Gravity:	1.141	1.042
Equivalent Weight:	221	203
%NCO	19.0 %	n/a
Viscosity (@72F)	600 - 800 cps	900 - 1200 cps

When handling these component materials, always work in a well-ventilated area or a large space with good air circulation. Wear rubber gloves, long sleeves, and protective eyewear (such as safety goggles) to prevent skin and eye contact. For complete safety, handling, storage, and processing guidelines, please refer to the Safety Data Sheet for each component material.

During curing, the material temperature increases. At a certain point, the curing resin may become too hot to touch with bare hands. To prevent burns, always use thick protective gloves when handling freshly cured material. Refer to the temperature curve chart above for details on the heat progression. Larger batch sizes generate more heat, which can lead to increased resin shrinkage. Higher curing temperatures also result in a greater shrinkage rate.

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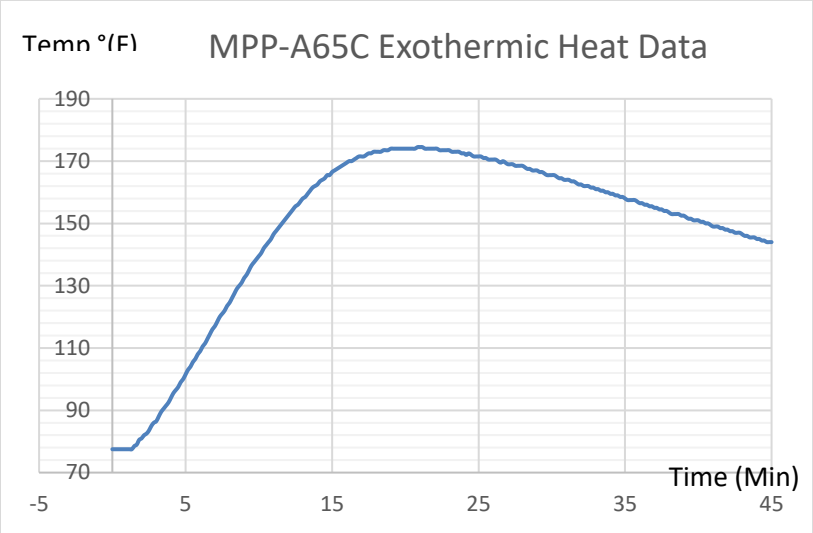

Packaging Sizes:

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

Other Handling Information

Storage/Handling Information for Polyurethane Component Materials

Our polyurethane component products are industrial-grade chemicals. For worker safety and optimal performance, proper handling and storage procedures must be followed. The following guidelines provide general storage and handling recommendations for Part-A (isocyanate prepolymer) and Part-B (curative) components. Supervisors and operators must be familiar with these practices to ensure safety and product quality.

Storage of Part-A Component (Isocyanate Prepolymer)

Part-A (prepolymer) contains isocyanate, which is highly sensitive to moisture. Exposure to ambient air will cause an irreversible reaction with atmospheric moisture, rendering the material unusable.

After opening, immediately blanket the material with dry nitrogen or argon gas. Inject gas for 15–20 seconds for 5-gallon pails and 60–120 seconds for 55-gallon drums, depending on empty headspace.

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For gravity-fed dispensing from a 55-gallon drum, install a silica gel, zeolite, or calcium chloride desiccant filter on the vent hole, or use a nitrogen gas shut-off valve.

Store in a dry indoor area at **72–86°F all the time**, avoiding direct sunlight.

Safety Notes:

If a large volume of water mixes with isocyanate, an exothermic reaction can generate extreme heat, potentially causing fire. Keep storage areas dry. High-temperature decomposition or fire can produce toxic gases. Refer to the SDS for details.

Handling Frozen Material:

Many isocyanate prepolymers may freeze during cold-weather shipping, appearing opaque or creamy and taking on a solid, gel, or highly viscous form.

If freezing is suspected, thaw in an industrial oven at 160–180°F for plastic pails or use a drum heater at 160–200°F for steel drums.

Do not heat the material temperature to exceed 180°F, as excessive heat can degrade the material. Avoid prolonged heating after thawing, as it may promote the formation of crosslink, which increases viscosity and alter performance.

Plastic pails are rated for a maximum of 190°F. Keep away from the heat source when using an oven.

Store thawed material at a temperature **72–86°F all the time**

If you agitate content of a drum, maintain a small nitrogen gas flow into the drum to blanket the material surface with nitrogen gas.

Shelf Life: 6 months in unopened original containers under proper storage conditions.

Storage of Part-B Component (Curative/Polyol Blend)

Part-B components consist of polyol blends and additives. They are hygroscopic, meaning they rapidly absorb moisture from the air, which can introduce bubbles into cured products.

Prevent exposure to ambient air to avoid moisture contamination.
Purge headspace with nitrogen gas or -40° dew point dry air, especially when humidity exceeds **60% Relative Humidity** at room temperature range. Store in a dry indoor area at **72–86°F**, avoiding direct sunlight.

Agitation Requirements:

The constituents of some Part-B formulations may separate into layers in the container over time. (The rate of separation varies between different formulas and may increase at lower storage temperatures.) Agitate the content for the following durations before dispensing:

55-gallon drums: Use a drum mixer for **30 minutes.**
5-gallon pails: Use a handheld power mixer for **1-2 minutes.**

Minimize air entrapment during agitation. In high-humidity environments, maintain a slow nitrogen gas flow while agitating to prevent moisture contamination.

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Shelf Life: 6 months in unopened original containers under proper storage conditions.

Handling Guidelines

Keep all materials in a secure area, restricting access to unauthorized individuals. The personnel who handles these materials must review the SDS for detailed safety and handling instructions. Operate in a well-ventilated area or a wide-open workspace with good air movement.

Wear rubber gloves, long sleeves, and protective eyewear to avoid skin/eye contact of the materials. For heated or sprayed applications, use dynamic ventilation and/or appropriate respirators to prevent inhalation exposure.

Hygiene practices: Avoid direct skin/eye contact or ingestion. No eating or smoking in work areas. Wash hands thoroughly after handling materials.

Humidity Considerations: If excessive bubbles appear in cured urethane parts, moisture contamination may be the cause. Maintain workspace humidity **below 60% relative humidity** at room temperature range using a dehumidifier if necessary. Prevent condensation on materials, molds, and tools by keeping them at ambient workspace temperature.

Warranty and Disclaimer

Northstar Polymers warrants that its products meet specified chemical quality standards and are free from manufacturing defects. However, we do not guarantee fitness for specific end-use applications. Users are responsible for testing materials for suitability in their specific processes and ensuring compliance with health, environmental, and regulatory requirements.

For any questions, please contact Northstar Polymers.

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