

# SILPAK RU-575

## Water Clear Polyurethane Plastic

Silpak RU-575 is an easy 1A:1B, by volume, system that cures quickly to a water clear, strong, plastic. It develops hardness and can be demolded rather quickly. It has a high heat deflection temperature which is useful in certain prototyping applications. This product has low viscosity and a long pot-life which facilitates easy mixing, excellent detail penetration, and easy degassing through vacuum or pressure casting techniques for bubble-free castings.

### Features

- Crystal clear
- Resistance to yellowing with UV exposure
- Can be machined, drilled, and sanded
- Long working time
- Low shrinkage upon cure
- Reproduces fine detail
- Tough and hard but not brittle

### Applications

- Prototypes
- Lenses
- Model Windows
- Clear injection plastic parts
- Decorative objects
- Encapsulation

### Physical and Handling Properties

Property	Value
Color	Water Clear
Mix Ratio, by weight	100A:90B
Mix ratio by volume	1A : 1B
Initial Mixed Viscosity, at 77°F, cP	600
Hardness, Shore D	75-80
Pot Life (1-lb mix)	15 min
Demold Time* @73°F, min	60 (0.25" thick)
Specific Gravity	1.06
Specific volume (in <sup>3</sup> /lb)	26.1
Linear Shrinkage (in/in)	0.0018
Tensile Strength, psi	6800
Elongation, %	6
Max Exotherm (°F)	228
Heat Deflection Temp (°F)	138
Elastic Modulus (psi)	133,956
Flexural Modulus (psi)	150,992
Flexural Strength, 5% Strain (psi)	8478

\*Demold time varies with thickness of casting and the amount of accelerator used.

*Values listed above are typical and not intended for use in specifications.*

## Mold Preparation

RU-575 reproduces minute detail from a mold or pattern but may stick or foam when poured on improperly prepared surfaces; ensure that the surface is moisture-free. Perform a trial casting on a surface similar to the final mold to avoid damaging a valuable mold. Polyethylene and silicone rubber molds do not require a release agent. Condensation-cure silicones are not recommended for casting RU-575 since residual alcohol can inhibit cure or produce hazy castings. Latex, polyurethane or metal molds must be dry and require a coat of a suitable release agent. For optically clear castings, use highly polished masters to create molds with excellent surface quality.

## Mixing

Before mixing resins, be sure that both Parts A and B are at room temperature and that all tools and molds are ready to go! Use metal or plastic mixing vessels (i.e., polyethylene pail) and spatulas to avoid introducing moisture. Shake or stir Part B before use, if required. Carefully weigh or measure proper ratios of A and B into a mixing container. Mix immediately, thoroughly scraping sides and bottom. Vacuum degas mix and pour into the mold as quickly as possible. Using pre-heated molds (i.e., 150°F) reduces shrinkage and improves the surface quality of parts. Pressure casting helps produce clear castings. A light spray of Poly ER2300 or quickly passing the flame of a torch over the back of the casting helps to break bubbles on the back of the pour. To produce bubble-free castings, vacuum degassing and pressure casting is necessary.

Once Part A and B containers are opened, use the product completely or reseal tightly since atmospheric moisture may cause foaming of the plastic. To lengthen shelf life, spray a heavier-than-air dry gas into the open containers before resealing. If containers collapse slightly over time, reopen containers and spray additional heavier-than-air dry gas to keep containers from further collapse.

## Curing

Allow castings to remain in the mold until thoroughly cured. Parts demolded too soon may be subject to deformation. Use pre-warmed molds to hasten curing and reduce shrinkage and improve overall quality of the casting. Low temperatures slow the cure and extend demold time. Wash mold release from surfaces prior to painting or bonding.

## Proper Use and Safety

Read all instructions and safety data sheets prior to use. Consult safety data sheets for all recommended safety precautions.

## Finishing

Although RU-575 is a non-yellowing formula, it is not recommended for long-term exterior use. To improve durability for exterior applications, add 1% UV Additive to the total mix weight of RU-575 to reduce the onset of chalking and pitting of the outside surface for ~2 years. Add 3% UV Additive to achieve good exterior stability beyond 5 years.

## Storage & Shelf Life

Part A and B must be stored in their original, tightly closed containers to protect from moisture and foreign materials at room temperature. Shelf life of materials when kept in unopened, sealed containers, at the recommended storage conditions, is six months. If crystallization occurs warm the container to 100-120°F until crystals dissipate. Cool to room temperature before use.

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