

Forsch Polymer Corporation
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*Application and mixing instructions for Forsch's: **40A, 60A, 80A & 94A** liquid urethanes and **60A & 85A** high performance putties.

DESCRIPTION:

Forsch's **40A, 60A, 80A & 94A** Liquids are two component polyether based urethane casting systems designed for low moisture sensitivity. The unique handling characteristics of these products allow for castings to be made on typically difficult moisture absorbing surfaces, wood-plaster-ceramics and conventional mold surfaces, without interacted exchange. Forsch **40A, 60A, 80A, & 94A** liquids set and cure at room temperature, ideal for proto mold making, vibration damping parts, bumper pads, stripers, hoppers, etc.

FEATURES:

Low Shrinkage	Low Moisture Sensitivity
Room Temperature Processing	Excellent Physical Properties
No MOCA, TDI, or MDA	High Impact Strength
Excellent Flexibility	Outstanding Abrasion Resistance

Forsch High Performance 60A & 85A Urethane Putties are room temperature curing, two component urethanes designed for easy mixing and application. Apply 150 mils thicknesses in one application without sagging or slumping. Cures to a **60A** or **85A** high performance polyurethane. Excellent resistance to abrasion and corrosion in varied environments. Excellent for conveyor belt repair, lining and protecting hoppers chutes, fans, pumps, vibrating and pneumatic conveying equipment.

FEATURES:

Low Shrinkage	Low Moisture Sensitivity
Room Temperature Processing	Excellent Physical Properties
No MOCA, TDI or MDA	High Impact Strength
Outstanding Flexibility	Good Resiliency

40A, 60A, 80A & 94A Liquid Mixing: Exact mix ratio is critical! Therefore the **40A, 60A, 80A, 94A** liquid kits have been premeasured. Shake the entire contents of the "b" component and add to the "A" component container, then mix thoroughly. Mix completely along the bottom and sides of the container. Be sure to wipe and scrape mixing stick at least once and mix overall for a minimum of 2 minutes.

Partial mixing is not recommended, but may be done by the following ratios:

Mix ratios by weight only:

40A Liquid Urethane (Activator)	100 parts a (Base)	65.00 parts B
60A Liquid Urethane (Activator)	100 parts A (Base)	10.00 parts B
80A Liquid Urethane (Activator)	100 parts A (Base)	50.00 parts B
94A Liquid Urethane	100 parts A (Base)	11.00 parts B

60A, 85A High Performance Urethane Putty Mixing: Exact mix ratio is critical! Therefore the High Performance Putty kits have been premeasured. Shake the entire contents of the “B” component and add to the “A” component container, then mix thoroughly. Mix completely along the bottom and sides of the container. Be sure to wipe and scrape mixing stick at least once and mix overall for a minimum of 2 minutes. The putty gel structure may take up to 4 minutes to fully form.

PHYSICAL PROPERTIES:

40a Liquid Urethane

Working Time @ 77 Deg F 15-25 min.
80% to 90% Physical Properties @ 77 Deg F 2 days
100% Physical Properties @ 77 Deg F 7 Days as follows:

Hardness, Shore A	38-42
Tensile Strength, Ultimate, psi	950
Elongation, %	390
Tear Strength, Ultimate, PLI	120
Linear Shrinkage D-2566(1.125” Deep)	.005 in/in

60A Liquid Urethane

Working Time @77 Deg 15-25min
80% to90% Physical Properties @77 Deg F 2 days
100% Physical Properties @77 Deg F 7 Days as follows:

Hardness, Shore A	58-62
Tensile Strength, Ultimate, psi	1250
Elongation, %	475
Tear Strength PLI	165
Linear Shrinkage D-2566(1.125” Deep)	.0005 in/in

80A Liquid Urethane

Working Time @77 Deg 15-25 min
80% to 90% Physical Properties @77 Deg F 2 days

100% Physical Properties @ 77 Deg F 7 Days as follows:

Hardness, Shore A	80-84
Tensile Strength, Ultimate, psi	1725
Elongation, %	450
Tear Strength PLI	240
Linear Shrinkage D-2566 (1.125" Deep)	.0005 in/in

94A Liquid Urethane

Working Time @77 Deg	15-25 min
80% to 90% Physical Properties @77 Deg F	2 days
100% Physical Properties @ 77 Deg F 7 Days as follows:	

Hardness, Shore A	92-96
Tensile Strength, Ultimate, psi	3120
Elongation, %	250
Tear Strength PLI	270
Linear Shrinkage D-2566 (1.125" Deep)	.001 in/in

60A High Performance Urethane Putty

Working Time @ 77 Deg	15-20
80% to 90% Physical Properties @ 77 Deg F	2 days
100% Physical Properties @ 77 Deg F 7 Days as follows:	

Hardness, Shore A	58-62
Tensile Strength, Ultimate, psi	1250
Elongation, %	475
Tear Strength PLI, Split Tear	165
Resilience, %	30

Abrasion Resistance, (Taber index 115 mg/Loss H-18 Wheel 1,000 cycles)

Partial mixing is not recommended, but may be done by the following ratios:

Mix ratios by weight only:

60A Liquid Urethane (Activator)	100 parts A (Base)	11.0 parts B
85A Liquid Urethane (Activator)	100 parts A (Base)	19.8 parts B

85A High Performance Urethane Putty

Working Time @ 77 Deg	15-20 min
80% to 90% Physical Properties @ 77 Deg F	2 days

100% Physical Properties @ 77 Deg F 7 Days as follows:

Hardness, Shore A	85-90A
Tensile Strength, Ultimate, psi	3850
Elongation, %	550
Tear Strength, Die C	395
Tear Strength, Split Tear	72
Resilience, %	40
Abrasion Resistance, (Taper index 95 mg/Loss H-18 Wheel 1,000 cycles)	

PRIMER SELECTION:

Forsch Rubber Primer

Rubber
Wood
Concrete

Forsch Metal Primer

Most common metals
Urethane
Ceramics

Primer and Surface Preparation:

Completely clean and dry all surfaces to be coated. Fiberglass, rubber, wood, galvanized aluminum, stainless steel, brick and concrete are acceptable surfaces. All substrates should be prepared with proper adhesives. Metal surface should be sandblasted per SSPC-SP5-63 "White Metal Blasting Cleaning"

*Concrete surfaces should be acid etched for immersion applications

*For rubber, urethane and other polymeric surfaces, roughen with a wire wheel or sander, then clean and apply primer.

Urethane to Metal Bonding:

To ensure consistent bonding results, metal surfaces must be thoroughly cleaned prior to application of the adhesive. Protective oils, cutting oils, greases, etc. Are removed by solvent degreasing or alkaline cleaning. Rust, scale or tightly adherent oxide coatings are removed by suitable mechanical or chemical cleaning methods.

Grit blasting is the most widely used method of mechanical cleaning, but machining, grinding or wire brushing may be used. Steel grit is used for blast cleaning of steel, cast iron, or other ferrous metals. Aluminum oxide, sand or other non-ferrous grit is used for blast cleaning of stainless steel, aluminum, brass, zinc, or other non-ferrous metals.

Chemical cleaning or pretreatment of the metal will remove rust, scale or tightly adherent oxide coating. Chemical treatments are readily adapted to automated metal treatment and adhesive application lines. Chemical treatments are also used on metal parts that would be distorted by blast cleaning or in cases where tight size tolerances must be maintained. Phosphatizing is a commonly used chemical treatment for steel, while chromate conversion coating is commonly used for aluminum.

Forsch Metal Primer may separate and should be thoroughly shaken before use. Forsch Metal Primer is applied to the cleaned substrate by brushing, dipping, spraying, roller

coating, or any other method that gives uniform coating and avoids excessive runs or tears. Forsch Metal Primer adhesive dries to a clear, soft, non-tacky film in a short time but at least 60 minutes drying @77°F should be allowed for complete solvent evaporation prior to the bonding operation. The adhesive film may be force dried at higher temperatures for shorter periods of time. Drying for 15 minutes @ 200°F has no harmful effect on adhesion.

Urethane to Rubber Bonding:

To ensure consistent bonding results, rough rubber surface with sandpaper or a wire wheel. Wash with MEK or Trichloroethane prior to applying primer.

Forsch Rubber Primer is a single-coat primer for bonding urethane elastomers to rubber. Since it is a solution, no agitation is required prior to use. Forsch Rubber Primer bonds are resistant to water, salt spray, many solvents and other environmental conditions. Forsch Rubber Primer adhesive dries to a non-tacky film in a short time but at least 5 minutes drying @ 77°F. Should be allowed for complete solvent evaporation prior to the bonding operation

MOLD RELEASE:

Forsch's Liquid Release is a special blend of organo-silicones formulated for use with urethane elastomers of foams. This product is an excellent release agent for use in injection molding, casting and pour molding. It provides a clean, highly cosmetic release with reduced build-up on the mold allowing more cycles between applications. Forsch's Liquid Release is a high quality paintable release which is stable @ 600°F. For additional product information and availability call: (303)322-9611.

STORAGE:

Systems should be stored unopened in air tight containers @ 60-90°F. Partially emptied containers should be swept free of atmospheric moisture with dry nitrogen before sealing.

HANDLING PRECAUTIONS:

For complete and updated health and safety information, read the MATERIAL SAFETY DATA SHEET. Do not handle or use until the MATERIAL SAFETY DATA SHEET has been read and understood.

DISCLAIMER:

Forsch products are warranted to be of uniform quality within manufacturing tolerances. Since no control is exercised over its use, no warranty, expressed or implied, is made as to the effects of such use. The obligation herein shall be limited to refunding the purchased price of that portion of the material proven to be defective.