

Advanced Materials

RP 6426-1 Resin / Hardener System

DT 081 OR DT 082 FILLER
RAPID-CURING POLYURETHANE CASTING SYSTEM

DESCRIPTION :

RP 6426-1 system with either DT 081 or DT 082 is a rapid-curing polyurethane casting system with good dimensional stability, low shrinkage, and versatility. RP 6426-1 resin and hardener are now manufactured in the U.S.

APPLICATIONS :

For use in manufacturing foundry patterns, pattern plates, core boxes, cores, gating, risering, negative and ancillary molds of all types, trial casting, prototypes, copy milling patterns and styling models, machining supports, trimming and assembly jigs.

MIXING INTRUSCTIONS :

Reaction Ratio

Typical Formulation	1	2
	Parts by Weight	
Polyurethane RP 6426-1 Resin	100	100
Polyurethane RP 6426-1 Hardener	100	100
Filler DT 081 Low Density		100
Filler DT 082 High Density	300	

Polyurethane RP 6426-1 Hardener Should be shaken thoroughly before use to redisperse a desiccating agent which may have settled out.

The three components of the system can be added to one another in any sequence. They should be mixed thoroughly, **but not for longer than 60 to 90 seconds.**

The mix is then poured into a mold pretreated with Release Agent.

Theoretically, there is no limit to the thickness of the layer or the volume of mix which can be cast in a single operation because the system shows only low exothermic temperature rise. In practice, the short pot life of the mix does set definite limits.

Thick layers are best built up by casting a series of thin layers. To ensure durable adhesion between layers, each successive layer should be cast before the previous one has gelled. This entails casting successive layers at intervals of less than 7 minutes.

The pourability of the system can be improved by reducing the filler content.

The cured casting are impact resistant and easy to machine.

TYPICAL MIXED PROPERTIES :

Property	ASTM Test Method	Test Values ⁽¹⁾	Test Values ⁽²⁾
Formulations		1	2
Gel Time (4 oz.)	D-2471	10 – 12 min.	7 – 8 min.
Color	Visual	Pail beige	Gray
Viscosity (4 oz.) @ 2 min	D-2393	4400 cP	2000 – 3000 cP
Demold Time			
10 mm layer after minutes		90 -120	90 – 120
30 mm layer after minutes		60 – 90	60 – 90
Exothermic Temperature Rise			
40 mm layer (°C)		40 – 45	40 - 45

⁽¹⁾ and ⁽²⁾ Tested - @ 77 °F (25 °C)

TYPICAL CURED PROPERTIES :

Property	ASTM Test Method	Test Values ⁽¹⁾	Test Values ⁽²⁾
Formulations		1	2
Density (g/cc)	D-792	1.6 – 1.7	0.8
Hardness (Shore D)	D-2240	83	60 – 65
Compressive Strength (psi)	D-695	5500	5500
Flexural Strength (psi)	D-790	4500	3700
Flexural Modulus (psi)	D-790	.51 x 10 ⁶	.34 x 10 ⁶
Tensile Strength (psi)	D-638	2860	2400
Izod Impact (ft-lb/in)	D-256	.34	.24
Tg per DMA (°C)	D-4065	85	--
Shrinkage, Mold #1 in/in	D-2566	0.001	0.0028
Mold #2 in/in		0.003	0.0054
Coefficient of Thermal Expansion (in/in.°F)	D-3386	4.13 x 10 ⁻⁵	

⁽¹⁾ and ⁽²⁾ Cure Schedule – 7 days @ 77 °F (25 °C), tested - @ 77 °F.

NOTE : Typical Properties – These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Quality Control Department.

STORAGE/HANDLING INFORMATION :***RP 6426-1 Resin and Hardener***

Store at 70 - 90 °F. This product is moisture-sensitive and packaged under a blanket of dry nitrogen. Maintain factory seal, after use reblanket with dry nitrogen and tightly reseal.

Stir well before use. This material will separate.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ration. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65 °F (18 °C) when mixing.

DT 081 and DT 082 Fillers

Store at 60 – 100 °F in a dry place. After use tightly reseal.

In accord with good industrial practice, handle with due care. Avoid dusty conditions, use adequate ventilation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

SHELF LIFE :

Provided materials are stored under the recommended storage conditions in their original containers, they will remain in useable condition for six months from date of shipping.

PACKAGING :

This product is available in 18# kits containing resin and hardener.

- DT 081 is available in 50# packages.
- DT 082 is available in 15# packages.

Please call Customer Service (800-367-8793) for price and availability.

SAFETY/HANDLING PRECAUTIONS :

Do not use or handle this product until the Material Safety Data Sheet has been read and understood.

RP 6426-1 Resin

WARNING. Harmful if inhaled. Causes skin and eye irritations. Causes allergic skin and respiratory reactions. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

RP 6426-1 Hardener

WARNING COMBUSTIBLE Causes skin and eye irritation. Keep away from heat and flame. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

DT 081 Filler

CAUTION In accord with good industrial practice, handle with due care. Avoid dusty conditions. Use with adequate ventilation. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

NOTICE Contains free crystalline silica. Breathing dust may cause cancer and delayed lung injury.

DT 082 Filler

CAUTION In accord with good industrial practice, handle with due care. Avoid dusty conditions. Use with adequate ventilation. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

Nuisance dust may be generated when sanding or sawing cured material.

FIRST AID :

In case of contact with :

Skin : Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Eyes : Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion : If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

Inhalation : Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Other : Referral to physician is recommended if there is any question about the seriousness of any injury.

PRECAUTION NOTE :

Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released vary significantly between systems. Additionally, ambient or compound temperature, amount of material mixed, and construction and shape of the mold or container can also be factors in the temperature profile of a mixed system. In some cases, the thermosetting reaction can be vigorous, generation heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mix more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the Product Data Sheet, i.e., a laminating resin for casting.

Please feel welcome to call our Product Information Department or your local Ren[®] representative for instructions before you start your job.

Caution To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised.

Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

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