

Advanced Materials**TDT 177-62**

LOW DENSITY TOOLING PASTE

DESCRIPTION :

TDT 177-62 is a room temperature curing, low density, two-component syntactic epoxy paste. The resin and hardener are colored to insure a homogeneous mix. A mechanical mixer (such as a Hobart mixer or equivalent) is required for mixing together the resin and hardener. One of the major uses for TDT 177-62 is as a core material, sandwiched between two epoxy laminates for lightweight tooling.

MIXING INSTRUCTIONS :

Reaction Ration 100R to 25H by weight

Mixing: Stir each component thoroughly before use. Weigh each component accurately ($\pm 5\%$) into clean containers. Thoroughly mix resin and hardener together (minimum 3 minutes) scraping container sidewalls, bottom and mixing stick several times to assure a uniform mix.

TYPICAL MIXED PROPERTIES :

| Property | ASTM Test Method | Test Values ⁽¹⁾ |
|---------------------|------------------|----------------------------|
| Gel Time (4 fl oz.) | D-2471 | 60 – 70 mins. |
| Color | Visual | White |
| | | Yellow |
| | | Light Yellow |
| Viscosity | D-2393 | Paste |

⁽¹⁾ Tested @ 77 °F (25 °C)

TYPICAL CURED PROPERTIES :

| Property | ASTM Test Method | Test Values ⁽¹⁾ | |
|--|------------------|----------------------------|-----------------------------|
| | | Paste Only | 2-Ply Sandwich Construction |
| Cubic Inch per lb. | D-792 | 71.4 | |
| Hardness (Shore D) | D-2240 | 50 | |
| Ult. Compressive Strength (psi) | D-695 | 1,560 | 1,920 |
| Ult. Flexural Strength (psi) | D-790 | 1,560 | 7,010 |
| Ult. Tensile Strength (psi) | D-638 | 1,070 | -- |
| Deflection Temperature (264 psi) (°F) | D-648 | 138 | 151 |
| Coefficient of Thermal Expansion (in/in/°F) | D-3386 | 1.76 x 10 ⁻⁵ | -- |
| | | (in/in/°C) | 3.17 x 10 ⁻⁵ |
| Izod Impact (ft-lb/in on notch) | D-256 | 0.104 | -- |
| Shrinkage (in/in) Mold#1 | D-2566 | .0015 | -- |

⁽¹⁾ Cure Schedule – 7 days room temperature

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

CURING INSTRUCTIONS :

Although room temperature epoxies will normally set up to a rigid, demoldable state within 24 hours at room temperature (75 °F ± 5 °F), these systems reach their full cure after seven days at room temperature. A full cure can be accelerated by applying heat after the part has set rigid. We recommend a post cure of 150 °F for a minimum of six hours. (Add to this adequate time to bring the part to the post cure temperature). After cure, the part should be cooled at a slow rate so as not to shock the part thermally.

Uniform heat distribution is also required during post cure ; concentrated heat, such as that directed from a lamp, can cause warp. An elevated temperature cure will slightly increase the shrinkage compared to a room temperature cure.

STORAGE / HANDLING INFORMATION :**TDT 177-62 Resin and Hardener**

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

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.

TDT 177-62 Resin

This product may crystallize upon storage. If crystallized, vent container and heat to 125 – 145 °F until crystals dissolve. Stir well after product has liquefied.

SHELF LIFE :

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

PACKAGING :

This product is available in the following package size(s) :

- TDT 177-62 Resin, 6 bags, 12# total weight
- TDT 177-62 Hardener, 6 bags, 3# total weight

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.

TDT 177-62 Resin

WARNING. Causes skin and eye irritation. May cause allergic skin reaction.

Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeating contact with skin.
Wash thoroughly after handling.

TDT 177-62 Hardener

DANGER CORROSIVE. Causes eye burns and skin irritation.

Do not get in eyes, on skin, or on clothing
Avoid breathing vapor or mist.
Keep container closed.
Use with adequate ventilation.
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.

PRECAUTIONARY 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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Main Offices :

Huntsman Corporation

10003 Woodloch Forest Dr.

The Woodlands

Texas 77380

(281) 719-6000

**Huntsman Advanced Technology
Center**

8600 Gosling Rd.

The Woodlands

Texas 77381

(281) 719-7400

Website :

www.huntsman.com/advanced_materials