

PAL TIYA PREMIUM – TECHNICAL DATA SHEET



ABOUT:

Pal Tiya Premium is an "all weather sculpting material". It comes in powdered form containing proprietary fiber-reinforcements, and mixes with water to form a sculptable self-reinforcing "dough". The "working feel" is close to that of a fine clay. It cures to stone-hardness without firing, is very strong, and is designed for extreme outdoor conditions.

FEATURES:

Add water, mix, knead, shape, detail. Self-cures and reinforces. Does not need firing. High impact-strength. Long term weather resistance. No epoxies, resins, VOC's. Cures to fine Stone-like finish.

USES:

Outdoor/Indoor Sculptures - Permanent
Film Props - Outdoor Museum Pieces -
Craft items - Durable Garden Art

Technical Data

Mixing Ratio

By Volume	4:1 Powder to Water, *approx'
By Weight	5:1 Powder to Water, *approx'

**Depending on desired working consistency.*

Mixing time

Hand mixing/Kneading	2 minutes
Domestic mixer (Planetary)	5 Minutes
Commercial mixer (Planetary)	5 Minutes

Working times

Soft state	0 to 15 minutes
"Plastic" state	15 minutes to 2 hours
Firm "Carve-able" state	2 hours to 1 ½ days
"Softwood" to "hardwood" state	1 ½ days to 3 days

Curing Times – at 70° F(21° C)

Firm to the touch	1 day
75-80% Strength	5 days
Full Strength	28 days

Physical Properties

Fully Cured material Density	Specific gravity: 2.05 to 2.10
Fully Cured Compressive Strength	5,900 PSI / 41 MPa
Fully Cured Freeze/Thaw Resistance	**Tested to ASTM C666

***Tested by the CSIRO Division of Concrete Science, Melbourne, Australia.*

PROCESSING RECOMMENDATIONS

MIXING

BATCH SIZE	METHOD
0 to 1 pound (450 grams)	By Hand - Fingertips then hand-knead
1 pound (450 grams) to 4¼ pounds (2 Kilos)	Domestic Planetary Mixer
5 pounds (2¼ Kilos) to 22 pounds (10 Kilos)	Commercial Planetary (Bakery etc.) Mixer

PRECAUTIONS

Also refer to Safety Data Sheet

Gloves: You must wear gloves. Pal Tiya Premium contains Portland Cement. It becomes highly alkaline when wet. Contact will dry out skin. Prolonged contact increases damage.

Dust: Avoid breathing in dust. Inhaled dust will become alkaline and irritate. Vigorous mixing/dispensing can be dusty. Cover work bowl with old dry towel until mix is fully 'wetted'.

On larger jobs, wear a dust mask to avoid breathing in dust, or work outdoors.

PAL TIYA PREMIUM – TECHNICAL DATA SHEET

Pal Tiya™

PRECAUTIONS (Cont.)

Temperature Considerations: Optimum working temperature is between 61°-70°F (16°-21°C). Hotter ambient temperatures will accelerate cure. Cooler will slow down cure. Do not allow to freeze until full cure is achieved – see above for times.

HOW TO USE PAL TIYA PREMIUM

Mixing: Mixing by Volume: Mix approximately 4 parts Pal Tiya powder to 1 part water. First mix together in a bowl, then knead by hand. Add either more water or Pal Tiya Premium till it becomes a pliable dough like consistency. Continue to knead for 2 minutes till the fibers are completely blended in. For large batches, an electric dough mixer is helpful and knead time should increase to 5 minutes

Application: Pal Tiya is most effective as a strong self-supporting hollow-shell coating over various core materials: Crushed-and-hand-shaped Tinfoil, hand-shaped or CNC-milled Polystyrene Foam, etc. Build a core first. The core only provides shaping and support until all of the applied Pal Tiya Premium has cured enough to support itself. The final total thickness of a Pal Tiya Premium sculpture is dependent on its size. Final total thickness for:

Really small sculptures that will likely be completed in one day - **1/8 inch (~3mm)**

Small sculptures less than 12 inches tall (approx 30cm) - **3/16 inch (~5mm)**

Medium sculptures - between 1-3 ft tall - **1/2 inch (~12mm)** - *This includes a 1/4 inch (~6mm) scratch coat which is required for sculptures of this size*

Larger sculptures - over 3ft - **3/4 inch (~19mm)** - *This includes a 1/2 inch (~12 mm) scratch coat which is required for sculptures of this size.*

Working time: 15 minutes of soft pliable sculpting time (for basic shapes) followed by 2 hours of gradual stiffening (for adding detail)

Adding more over several days: While still soft, rake unfinished areas to create an aggressive texture as a key. Let cure. Next day(s), lightly pre-wet this raked area, and then add more Pal Tiya.

Curing: Pal Tiya Premium cures its strongest in the presence of moisture.

First day: Wrap textured work gently in light plastic (shopping bags / light drop-sheet).

Second day: Place damp towels on work, re-cover with plastic.

Achieves 70-75% ultimate strength when kept damp during first 5-7 days of cure.

Achieves 97.5% ultimate strength, when kept damp for full 28 days.

Rinse tools with water & stiff brush. Leave rinse water in bucket to settle overnight. Do not pour down drain. Sediment can be disposed of or buried in Garden.

Limited Product Warranty: The manufacturer warrants that this product shall be of merchantable quality when used or applied in accordance with the manufacturer's instructions. This product is not warranted as suitable for any purpose other than the general purpose for which it is intended. This warranty runs for one (1) year from the dates the product is purchased. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED TO THE DURATION OF THIS WARRANTY. Liability under this warranty is limited to replacement or defective products or, at the manufacturer's option, refund of the purchase price. CONSEQUENTIAL AND INCIDENTAL DAMAGES ARE NOT RECOVERABLE UNDER THIS WARRANTY.