



# Crestamould<sup>®</sup> T27

## Polyester-based sprayable and machinable tooling compound

### Product Overview

Crestamould<sup>®</sup> T27 is a sprayable modified polyester compound designed for milling of large plugs (10-25 m, 30-75 ft, ) or direct limited production moulds with Computer Numerical Control (CNC) multiple axis machines. This material combines unique qualities, can be sprayed with few passes up to a thickness of approx. 25mm (1"). Crestamould<sup>®</sup> T27 provides a homogenous substrate that prevents print from the underlying structure, and gives sufficient flexibility to prevent cracks. Crestamould<sup>®</sup> T27 retains its machinability over time - it is as easy to machine after 6 months as when freshly sprayed. Crestamould<sup>®</sup> T27 is available as a R (Regular) and S (Summer) version. Moulds using Crestamould<sup>®</sup> Tooling Resin RTR 4010PA are successfully produced with Crestamould<sup>®</sup> T27 plugs.

### Features and Benefits

- Fast application, build-up with few passes
- Tough and resilient, remains non-brittle
- Maintains dimensional tolerance over time
- Low shrinkage, low exother
- Easy to cut and machine with carbide tools
- Machines/ shaves like wood - no dust generation
- Low tool wear
- Remarkable profile of finished parts
- No settling in the equipment
- Easy to repair - bonds to itself
- Compatible with poly/ vinylester sanding primers
- Constant hardness over time, after 24 hours, or after 6 months

### General Properties

Colour	Pink
Density	1.04 - 1.10 g/cc; 8.6 - 9.2 lbs gallon
Viscosity, Brookfield HAF T-C, @ 5rpm, 24°C	196,000 - 216,000 cps
Thixotropic Index	5-7
Peak Exotherm, 100 gram mass	132°C (270°F)
Hardness after 24 Hours, 24°C (75°F)	Minimum 55 Shore D

## Process Temperature

The ideal shop temperature is 25°C (77°F). The useable range for Crestamould® T27 “R” (Regular) is from 21°C (70°F) to 29°C (85°F); for Crestamould® T27 “S” (Summer) it is from 24°C (75°F) to 35°C (95°F). Maintain catalyst levels between 1.25 and 1.8% by volume. Below 21°C (70°F) obtaining a spray pattern will be difficult.

## Catalyst Types

Catalyst used for internal ATC QC is Arkema Luperox DDM-9. An equivalent catalyst is Luperox K1. Catalysts in the same category are Syrgis Norox MEKP-9; Syrgis Superox 702; Norpol Peroxide 1; Syrgis Andonox KP-9; Akzo Cadox D-50a. Hi-Dimer type catalysts used for VE resins and gelcoats can be used but can slow down the reaction and can increase exotherm. High hydrogen peroxide content (Luperox DeltaX-9), low exotherm blends (Andonox KP-9LE) and CHP blends (MCP) catalysts are to be avoided.

## Catalysation

MEKP (Arkema Luperox® DDM-9, SG 1.004 g/cc)	1.8% by volume (minimum 1.25%, maximum 1.8%); set
Geltime* at 24°C (75°F) R - Regular version	pump slave arm at 1¼, 1½ and 1¾ % respectively
Geltime* at 29°C (85°F) S - Summer version	15 - 20 minutes (100 gram mass) @ 1.8% by volume
Exotherm, 3/8" (10mm) thickness	15 - 20 minutes (100 gram mass) @ 1.8% by volume
Coverage	Less than 54°C (130°F)

Catalyst levels are stated by volume. If used by weight, adjust catalyst levels taking specific gravity of the various catalysts into account.

Caution: Follow recommended catalyst types and ratios. Do not exceed a catalyst ratio of 1.8% by volume, nor catalyze below 1.25% in hot temperatures. For consistent results, maintain the recommended shop temperature and a constant catalyst ratio.

## Application

The first coat is critical. A layer of no more than 3mm (1/8") and no less than 1.5mm (1/16") should be uniformly applied and allowed to gel, exotherm and cool down. Duration approx. 1 - 1.5 hours. Once this first coat is down to room temperature, subsequent coats of 3mm (1/8") to 5mm (3/16") can be applied, waiting for a relative cool-down between the passes to approx. 43°-49°C (110°-120°F). This is repeated until the total desired thickness is achieved. Most applications aim for 20 - 25mm (3/4" - 1") total thickness prior to machining. The secondary bonding window is such that no sanding is required between coats if the job is stopped. The coverage is 1 litre/1mm/m<sup>2</sup> (0.6 gallons per inch per ft<sup>2</sup>). Tool marks are removed with 40 grit sandpaper. The surface needs no further preparation prior to sanding primer application.

## Equipment

Crestamould® T27 is dispensed through an internal mix catalyst pumping/ spraying system with a ram-type equipment such as the Magnum Venus Industries Putty Unit ([www.mvpind.com](http://www.mvpind.com)); the GS Manufacturing BWX Putty Dispensing System ([www.gsmfg.com](http://www.gsmfg.com)); or Glascraft, ([www.glascraft.com](http://www.glascraft.com)). The spray fan is obtained by selecting larger than normal spray fan angles for the nozzles (i.e. 70° nominal angle). Vertical hang is non-sagging up to 10mm (3/8") wet on wet. An alternative to spraying for large parts is to use a splatter head arrangement. This allows higher output with less overspray but induces surface texture. to 5mm (3/16") can be applied, waiting for a relative cool-down between the passes, to approx. 43°-49°C (110°-120°F). This is repeated until the desired thickness is achieved. The coverage is 1 litre/1mm/m<sup>2</sup>; or 0.624 gallons/board ft. (12"x12"x1").

## Machining

Use carbide tools. Use a positive rake; 2,3 or 4 flutes. End-mill tools are used for the majority of the work, ball-end tools for finishing. Calculate a chip load of 0.4 - 0.5mm (0.015" - 0.020") to set the feed rate versus rpm versus number of flutes. Adjust speeds to avoid overheating or overloading and material pull out. Do not leave the CNC unattended. Brush or blow off material as it accumulates on flat surfaces. If possible, blow air at tool-tip. A shop temperature of 24°C (75°F) and above will improve machining and reduce tool wear. Colder temperature will make the Crestamould® T27 harder. Remove shavings daily from part.

Caution: Accumulation of shavings that were produced from under- or overcatalyzed material can generate heat and smoke in extreme cases with charring of the material. To avoid this, maintain recommended catalyzation percentages (see page 1), remove shavings regularly and fill shavings in metal drums, pack it down, add water and store outside.

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## Additional Information

### Shelf life

Crestamould® T27 is a stable product, and adequate long-term storage conditions will result in a shelf life of 12 months. Do not store outside or in direct sunlight. After this time, the gel time may drift, and should be checked before use.

### Storage

The product should be kept in securely enclosed containers. Storage should be in a dry place and out of direct sunlight. The temperature should be between 18°-25°C (65°-77°F). Allow material to reach shop temperature before using. Keep containers closed to eliminate styrene evaporation and to avoid change in properties of the material. Rotate stock to use oldest batch numbers first.

### Mixing

Not required.



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