Figure 4® JEWEL MASTER GRY

Jewelry Castable

A versatile, high HDT master pattern material for jewelry silicone molds and high visualization detailed prototypes of complex and fine designs.

Figure 4

STUNNING SURFACE FINISH AND HIGH DEFINITION FOR JEWELRY PIECES PROTOTYPING AND PRODUCTION WITH RTV/SILICONE MOLDING

Figure 4 JEWEL MASTER GRY is a versatile master pattern material for high volume jewelry RTV/silicone molds and for prototype/fit models. The material's high heat deflection temperature (300 °C) ensures compatibility with a range of silicones for creating molds used in jewelry casting production workflows.

This material also delivers exceptional precise surface quality for design and functional prototyping, as well as snap-fit and stone-in-place testing. Figure 4 JEWEL MASTER GRY meets biocompatibility standard ISO 10933-5 for cytotoxicity, making it safe for try-ons and fittings.

Liquid Material

MEASUREMENT	CONDITION	VALUE	
Viscosity	@ 25 °C (71 °F)	2100 cPs	5180 lb/ft·h
Color		Gray	
Solid Density	@ 25 °C (77 °F)	1.29 g/cm^3	0.043 lb/in^3
Liquid Density	@ 25 °C (77 °F)	1.19 g/cm^3	0.04 lb/in^3
Package Volume		1 kg bottle - Figure 4 Jewelry and Standalone	
Layer Thickness		30 µm	0.0012 in
Speed Master Pattern Mode Prototype Mode		 15 mm/hr 45 mm/hr	 0.6 in/hr 1.77 in/hr

APPLICATIONS

- High definition master patterns for making silicone or RTV molds especially for high volume, mass production of jewelry designs
- Jewelry design and functional prototyping
- Snap-fit and stone-in-place testing
- Client fit/try-on models

BENEFITS

- Compatible with a range of silicones
- No silicone inhibition
- High visualization
- Safe for extended try-on testing and user fittings
- Jewelry-specific build styles
- MicroPoint™ support tips minimizing support-to-part interaction and support scarring

FEATURES

- High heat deflection temperature
- Exceptional surface finish and fine details definition
- Fast speed:
  - Prototyping speed – 45 mm/hr at 50µm Z resolution
  - Master pattern speed – 15 mm/hr at 30µm Z resolution
- High contrast gray color
- Passes biocompatibility standard ISO 10933-5 for cytotoxicity

3D SYSTEMS®

Post-Cured Material

MECHANICAL PROPERTIES			
MEASUREMENT	**CONDITION**	**METRIC**	**U.S.**
Tensile Strength (MPa | PSI)	ASTM D638	67	9700
Tensile Modulus (MPa | KSI)	ASTM D638	3500	500
Elongation at Break	ASTM D638	2.5 %	
Flex Strength (MPa | PSI)	ASTM D790	130	18700
Flex Modulus (MPa | KSI)	ASTM D790	4000	580
Coefficient of Thermal Expansion (CTE) (ppm/°C | ppm/°F) 0-30 °C 45-130 °C	ASTM E831	 80 146	 81 44
Hardness, Shore	ASTM D2240	88D	
Heat Deflection Temperature @ 0.455 MPa/66PSI @ 1.82MPa/264 PSI	ASTM D648	 >300 °C 111 °C	 572 °F 232 °F

Material Processing Instructions

MIXING INSTRUCTIONS

1 kg bottle for Figure 4 Jewelry and Standalone

- Roll bottle for 1 hour on 3D Systems LC-3D Mixer for first use
- Roll for 10 minutes before subsequent uses

Use the Resin Mixer to stir material in the tray for 30 seconds between print jobs.

THREE OPTIONS FOR CLEANING

1. Sonication in IPA
   - Rinse in IPA ≤ 3 min.
2. Non-flammable Sonication
   - Wash in Propylene Carbonate ≤ 5 min.
   - Rinse in 5 wt% Elma Tec A4 solution ≤ 5 min.
3. Manual cleaning
   - Rinse in clean IPA ≤ 3 min.

DRYING INSTRUCTIONS

Ambient or air dry ≥ 1 hour or oven dry 50°C (122°F) 10 min.

UV CURE TIME

3D Systems LC-3DPrint Box UV Post-Curing Unit: 60 minutes

More details can be found in the User Guide available at http://infocenter.3dsystems.com/

3D SYSTEMS

www.3dsystems.com