AMERALABS

GVA-26

Gingiva

PERFECT FOR

- Removable gingiva masks for implant and teeth dental models
- Aesthetic and functional evaluation of prosthesis with soft tissue replica.
- Perfect for training and presentation models.

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Gingiva
3D PRINTING RESIN

Professional-grade flexible resin for 3D printing removable implant and gingival masks. Designed to replicate soft-tissue texture with precise workability – cut, trim, or drill directly on the model for accurate case fitting.

MATERIAL PROPERTIES

- **Natural softness:** gum-pink color, Shore A 37 hardness
- **Elasticity & shape memory:** 176.5% elongation at break; 1% compression set after 72 hours means minimal permanent deformation after compression
- **Tear resistance:** 7.8 kN/m; supports repeated trimming and handling
- **Cuttable & drillable:** compatible with scalpels, carbide/diamond burs, and slow-speed handpieces (recommended below 10,000 RPM)
- **Dimensional stability:** < 0.5% shrinkage after post-cure
- **Low odor & stable pigment:** Minimal smell and consistent color
- **Reliable adhesion:** strong first-layer bonding for MSLA/DLP printers

TECHNICAL DATA

Mechanical Properties	Standard	Value
Modulus of Elasticity	ISO 37	7.7 MPa
Stress at Break	ISO 37	1.8 MPa
Elongation at Break	ISO 37	176.5 %
Other Properties	**Standard**	**Value**
Tear Resistance	ASTM D524	7.8 $kN \cdot m^{-1}$
Vertical Rebound	ASTM D2632	5 %
Compression set (25 °C) 72h	ASTM D395	1 %
Compression set (70 °C) 72h	ASTM D395	2.5 %
Viscosity (25 °C)	ISO 2555	419.8 MPa·s

Other Properties	Standard	Value
Density (liquid)	ISO 2811	1.06 $g \cdot cm^{-3}$
Density (solid)	ISO 1183	1.13 $g \cdot cm^{-3}$
Hardness	ASTM D2240	Shore 37 A
Water absorption (24 h)	ASTM D570	1.27 %
Tg, tan d (1 Hz)	ASTM 5418	9.7 °C
Tg, E' (1 Hz)	ASTM 5418	0.2 °C
Tg, E'' (1 Hz)	ASTM 5418	-0.2 °C
Critical Dose	WCM[1]	2.46 $mJ \cdot cm^{-2}$
Penetration Depth	WCM[1]	121 µm

Tensile Properties	Standard	Non post cured[2]	After 24 h of drying at 50 °C[3]	After 24 h in water[3]	4 weeks in darkness[3]	4 weeks in sunlight[3]
Modulus of Elasticity	ISO 37	5 MPa	7.3 MPa	18.2 MPa	11.3 MPa	9.6 MPa
Stress at Break	ISO 37	0.9 MPa	2.6 MPa	4.3 MPa	2.9 MPa	3.3 MPa
Elongation at Break	ISO 37	118.4 %	203.5 %	227.2 %	207.4 %	221.2 %

All specimens for various tests were printed using a DLP printer with 2.62 $mW \cdot cm^{-2}$ light intensity and a UV spectrum peak of 406.3 nm. A layer height of 50 µm was used to print the specimens, and the exposure was set at 2.8 s. After printing, the specimens were washed with isopropanol for 10 min in a wash and cure station. Specimens were dried in the air for 30 min and then post-cured for 1 h in a UV chamber with 3 light sources of 365 nm (27.5 W), 380 nm (27 W) and 395 nm (27.5 W).

[1]P. F. Jacobs, Rapid Prototyping and Manufacturing: Fundamentals of StereoLithography, McGraw-Hill, Inc., New York, NY, USA, 1993.

[2]These properties were measured right after printing, before post-curing.

[3]After post-curing, specimens were exposed to the specified conditions, and only then their properties were measured.

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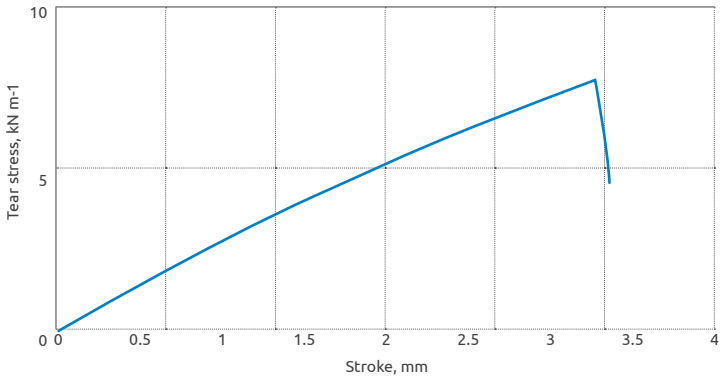
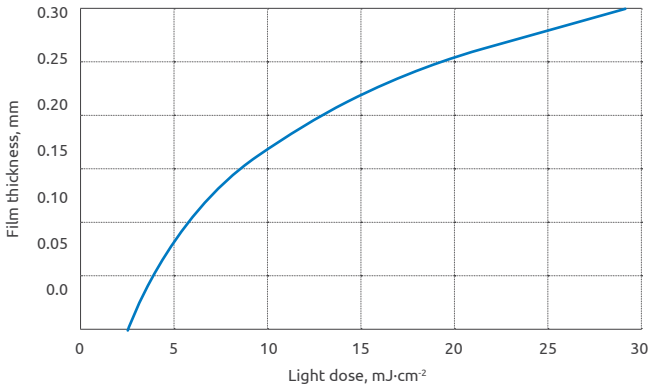
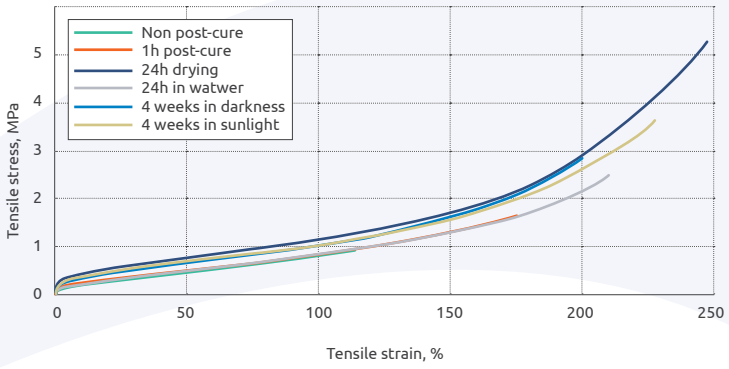
Tear strength diagram of GVA-26



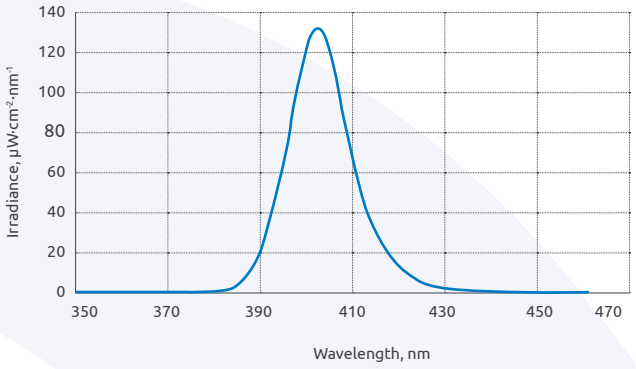
Working curve measurement of GVA-26 resin



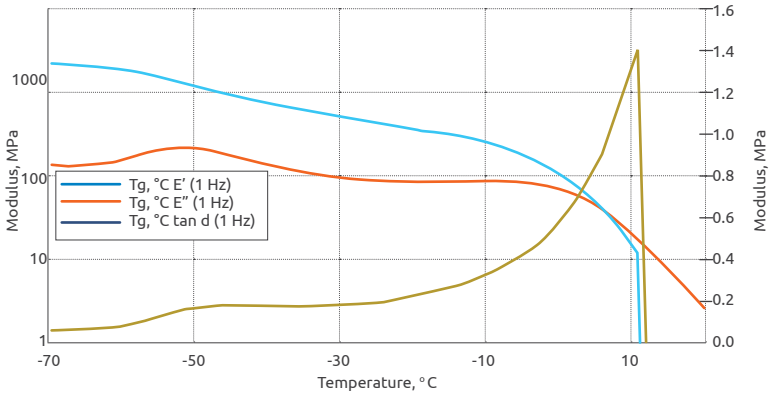
Tensile stress strain diagram of GVA-26



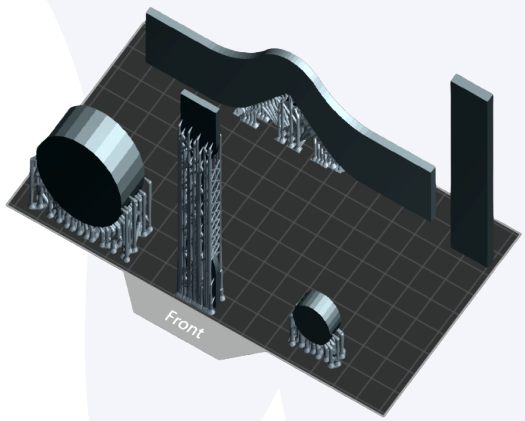
The spectrum of the DLP printer used for specimen preparation



Dynamic Mechanical Analysis Graph of GVA-26



Tensile, Flex and Compression specimen orientation



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COMPATIBILITY

Designed to work with MSLA and DLP 3D printers with both color and monochrome LCD screens: Anycubic, Phrozen, Elegoo, Epax, Longer, Prusa, Asiga and similar 3D printers. List of initial 3D printing settings can be found here: https://ameralabs.com/3d-printing-settings/

GVA-26 should not be used with PDMS based resin trays, because it is too reactive and can damage your PDMS silicon layer. We strongly recommend using it with FEP, NFEP, PFA, ACF, HDF or similar film based resin trays only.

3D PRINTING

For a successful first print, we recommend:

- Heat the resin to ~25 °C before printing and shake gently to ensure consistent homogeneity.
- Level your build plate.
- If it's your first print with this resin, print something small first. We recommend the AmeraLabs Town calibration model.
- Find initial printing settings here: https://ameralabs.com/3d-printing-settings/
- Use moderate lift speeds (75 mm/min) and minimize suction zones in model design – hollow designs help reduce suction forces.
- Use long wait times of 1–3 s before curing.

Let us know if you have any trouble. We are here to help: support@ameralabs.com

CLEANING

GVA-26 Gingiva Resin has moderate viscosity and is designed for clean, reliable washing with standard IPA. Supports can be removed before or after washing. Important: DO NOT leave GVA-26 submerged in IPA for more than 15 minutes at a time. Overwashing can soften the material and reduce final flexibility.

If you use a Wash and Cure station, submerge the printed mask in IPA for 10–15 minutes maximum, then remove and air-dry thoroughly. For complex geometries, repeat short washes as needed to clear uncured resin from undercuts or contact areas.

Soaking in IPA without agitation is acceptable for short durations, but gentle agitation improves results.

If using an ultrasonic cleaner, place the part in a sealed container with IPA, then into a water-filled ultrasonic unit for 5 minutes only. Avoid heating.

After washing, dry completely using compressed air or ambient drying for at least 30 minutes before UV curing. Any residual IPA will affect softness and surface finish.

POST CURING

Post-cure under 365–405 nm light for 20 minutes at most. Long curing times can reduces flexibility - do not exceed recommended time.

It is easier to remove supports before post-curing. However, you can also post-cure a print with supports and remove them later. Depending on the model, this can help maintain precise gingival contours during curing. Post-curing time is 15–20 minutes under 365–405 nm UV light (until the surface is smooth and non-tacky). Do not exceed 20 minutes - overcuring reduces flexibility and shape memory. For optimal

results, post-cure immediately after thorough drying. After proper post-curing, the surface of GVA-26 printed gingival masks should be non-tacky, smooth, and retain full gum-like softness and compressibility.

CUTTING AND DRILLING

GVA-26 is suitable for dental applications where printed masks need to be trimmed or adjusted post-printing. The material will not significantly tear or deform during cutting, trimming, or drilling with standard tools. The material has been tested for compatibility with scalpels, carbide/diamond burs, and slow-speed handpieces (below 10,000 RPM). Avoid high feed rates that can cause tearing; test with your specific tools if advanced machining is expected.

SAFETY, STORAGE, AND DISPOSAL

Consult the relevant Safety Data Sheet (https://ameralabs.com/msds/) for appropriate handling procedures and protective equipment before using this or any other material referred to in this bulletin. Refer to Safety Data Sheet for emergency and first aid procedures.

Use protective equipment for manipulation.

Store resin at room temperature away from direct sunlight.

This resin is not intended for contact with food, drinks, or for use on or in the human body for medical purposes. Always read the Material Safety Data Sheet (MSDS) thoroughly.

Resins are classified as dangerous chemicals, and it is necessary to dispose of them properly in designated containers. Resin bottles (empty or full) must never be disposed of or poured into the general waste.

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