

# DIMENGEL 20-FR

Dimengel 20-FR (DIM 20-FR) is the world's first flame-retardant, photo polymeric gel for 3D printing. The polymer complies with the highest standard for flame-retardant materials, the UL94-V0 that contains a dedicated section (Blue Card) for additive manufacturing and is certified by Underwriters Laboratories (UL).

DIM 20-FR enables production of large parts for a range of industries that require flame retardancy such as Automotive, Marine, Rail, Scenic Fabrication, and Visual Communication. The material is suitable for producing a variety of applications from railway FRP spare parts through automotive aftermarket parts, military parts, to amusement park displays.

As with Massivit 3D's range of advanced, proprietary materials, DIM 20-FR enables ultra-fast production of large custom parts that cure on-the-fly during printing, enabling ready-made solid objects straight off the printer with little-to-no need for internal support structures.

## Properties of DIMENGEL 20-FR Base Material\*

	Method	Metric Units		Imperial Units	
Tensile strength*	ISO 527	MPa	14.5 – 16.4	psi	2,030 – 2,320
Elongation at break*	ISO 527	%	4.0 – 7.0	%	4.0 – 7.0
Modulus of elasticity*	ISO 527	MPa	1500 - 1950	psi	218,000 – 282,830
Flexural strength*	ASTM D 790	MPa	50-70	psi	7,250 – 10,150
Flexural modulus*	ASTM D 790	MPa	3,200 – 4,200	psi	464,120 – 609,160
HDT* @0.45 MPa	ISO 75/ASTM D 648	°C	54 - 56	°F	129-133
Izod Notched Impact*	ISO 180	KJ/m <sup>2</sup>	2.0 - 2.2	Ft lb. /in <sup>2</sup>	0.95-1.05
Shore Hardness (D)	ASTM D2240	Scale D	80	Scale D	80-85
Flammability Test	UL 94		V0		V0

### Coating and Finishing

Whatever your application, you can use a wide variety of coatings and finishes:

- SAV – self-adhesive vinyl
- Car / body filler
- Polyester
- Epoxy
- Polyurethane
- Fiberglass

### Regulation Compliancy

- Compliant with 1907/2006/EEC regulation 2006 ("REACH")
- Compliant with Regulation (EC) No 1272/2008 ("CLP")
- Compliant with US the Toxic Substances Control Act (TSCA) regulations
- Does not contain any chemicals listed on California Prop.65

### Fire Resistance

Dim 20 –FR prints are compliant with the following standards:

- UL94-V0 \*\*

\* Measurements were done on lab specimens of cured material

\*\* Certified to UL94-V0, as tested within the official UL test labs.

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