# keyprint®
by keystone industries

**Item# 4220201/ 4220200**

# KeyGuard™ Technical Data Sheet

**Indications for Use:** KeyPrint® KeyGuard™ is a biocompatible photopolymer resin for the fabrication of custom-made athletic mouth guards.

**Product Description:** KeyGuard™ is designed for additive manufacturing in vat polymerization 3D printers utilizing wavelengths between 385nm-405nm. KeyGuard™ is for the fabrication of custom-made athletic mouth guards. KeyGuard™ is intended to be used within a computer-aided design and manufacturing (CAD/CAM) system that includes a 3D scanner, design software, 3D printer, and post-cure unit.

## CHARACTERISTICS

| | |
|---|---|
| **Color** | Black, White |
| **Viscosity** | 900 cP |

| | TESTED PROPERTY | STANDARD/METHOD | RESULT |
|---|---|---|---|
| **ASTM** | Tear Strength | ASTM D624-00 | 30 kN/m |
| | Hardness | ASTM D2240-00, 25C @ 0 sec | 75-90 A |
| | Water Sorption | ASTM D570 @ 3hr | 5.7% |
| | Elongation at break (strain) | ASTM D638 | 130% |
| **ISO** | Biocompatibility | ISO 10993-5, Cytotoxicity | PASS |
| | | ISO 10993-10, Sensitization | PASS |
| | | ISO 10993-23, Irritation | PASS |
| | Impact Strength | ISO 179-1 | 27.5 kJ/m2 |
| | Impact Resistance | ISO 179-1 | 220 j/m |
| **INTERNAL** | Tensile Cyclic Hysteresis | Energy returned @ 25C | 27% |
| | | Energy lost @ 25C | 73% |

These data represent typical values and were determined through testing on Vat Polymerization printers that are validated for use with KeyPrint® products. Mechanical properties may vary depending on the machine, part orientation, machine type, machine power, post-curing of printed parts, and cleaning. Please refer to the product guide for post-processing procedures and best practices. Failure to follow the product guide may result in variations in color and mechanical properties. This product is suitable for manufacturing flexible athletic mouthguards. Keystone Industries reserves the right to modify material characteristics and formulation without prior notification.

**Composition:** methacrylate, photo-initiator, inhibitor, and pigments
**Validations:** See Keystone's website for validated printers and post cure units

This data was determined in accordance with ISO and ASTM standards and are pursuant to Keystone Industries quality system. This document is valid without signature.

# keystone®
Industries

keyprint.keystoneindustries.com

US: 480 South Democrat Road Gibbstown NJ, 08027 | 1.800.333.3131
Gmbh: Stockholzstr. 11, 78224 Singen - Germany | +497731912101

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