Shelf-life Validation Report

DLP SG Clear (DSP-SG001CR) / Lot: 2308301

Summary

Effective Shelf-life through **July 12, 2027**.

DLP SG Clear maintains its performances set forth by ApplyLabWork (ASTM D638, D790) and 3rd party biocompatible test (ISO 10993-1).

Methodology:

Step 1: 1 kg of product DSP-SG001CR (Lot: 2308301) placed in an 80 °C oven (February 4, 2025) designated as D524, indicating that the product had been stored under ambient conditions for 524 days prior to the test.

Step 2. Removed from the 80 °C oven after 21 days (D21). Test specimens printed according to the printing tips. Printed test specimens were evaluated for biocompatibility, printability, and mechanical properties.

Applying Van't Hoff equation. An accelerated aging factor (AAF) estimate is calculated by the following equation:

$$\text{AAF} \equiv Q_{10}^{\left[\frac{T_{AA}-TT_{RT}}{10}\right]}$$

For aging temperature as T_{AA} = 80°C and AAT = 21 days

➔ Expected (RT) ~ 887 days

Specimen Performances:

Properties	Criteria	D524	D524+EW3	Method
Tensile (MPa)	67 - 70	Pass	Pass	ASTM D638
Elongation (%)	4 - 9	Pass	Pass	ASTM D638
Flexure Strength (MPa)	88 - 90	Pass	Pass	ASTM D790
Flexure Modulus (MPa)	> 2,000	Pass	Pass	ASTM D790
Biocompatibility	Pass	Pass	Pass	ISO 10993-1

D524 + EW3 signifies a combination of 524 storage days and 21 days of accelerated shelf-life at 80 °C oven temperature. The data presented demonstrates that accelerated aging had no discernible impact on the resin's intended mechanical properties, printability, or biocompatibility. These outcomes support the product's shelf-life stability for a total of 1,411 days (524 + 887) under ambient storage conditions.