

VoxelCel™ 3D Printing Grade CMC

Introduction

VoxelCel™ is an ultra-high-purity, performance-optimized sodium carboxymethyl cellulose (CMC) product developed specifically for the additive manufacturing (3D printing) industry. As an anionic polymer derived from natural cellulose, VoxelCel™ CMC plays a critical role in 3D printing inks, bioinks, and slurry systems, serving as an exceptional rheology modifier, binder, water retention agent, and structural support agent. Through precise control of degree of substitution and degree of polymerization, VoxelCel™ imparts outstanding shear-thinning properties and yield stress to printing materials, enabling unparalleled extrusion smoothness and post-printing shape retention.

Suggested Applications

- Biomedical Printing
- Food 3D Printing
- Ceramics & Composites Printing
- Cosmetics & Personal Care Printing

Function

- Thickening
- Binding
- Stabilizing
- Emulsifying
- Dispersing
- Deflocculating
- Water retention

Package

25kg per multi-layer kraft paper bag with PE inner bag. Package can be customized as required. Once open it, please use up ASAP.

Storage & Shelf Life

Store in a cool, dry, and ventilated place within a well-sealed container. Shelf life is 24 months. However, as a result of natural degradation process the viscosity of CMC may decrease in time. Therefore, after 12 months from date of manufacturing, the product can still be used safely up to the indicated expiry date, but may need a slight dosage correction in order to give optimum performance in the application.

Specs.

VoxelCel™ is available in a range of product grades to meet the demanding requirements of various 3D printing systems.

Technical Parameter	Specification	Test Method
Appearance	White to slightly yellowish, free-flowing powder with no visible impurities	By Visual
Purity	≥99.8%	Internal titration method
Degree of substitution	0.7 - 1.2	USP/EP
pH (1% solution)	6.5 - 8.0	Potentiometric method
Moisture	≤ 7.0%	105°C Loss on drying method
Endotoxin, EU/g)	<100	LAL Test

VoxelCel™ Product Series and Rheological Properties

Product Code	1% Viscosity (mPa.s)	Shear-thinning index (n)	Recommended Applications
VoxelCel™ 7H	4000 - 6000	<0.5	Ceramic/Metal Slurry Binder: Provides high yield stress, prevents particle settling, and ensures sufficient green strength for printed parts.
VoxelCel™ 9M	1500 - 2500	<0.4	Bioink/Hydrogel: Excellent shear-thinning behavior protects cell viability, enabling rapid gelation and shaping after printing.
VoxelCel™ 12L	200 - 500	<0.6	Sacrificial Support Material: Outstanding printability, with fast, residue-free dissolution in water post-printing.

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