Specification Sheet

CELLINK Nanofibrillated Cellulose

Product description	Nanofibrillated cellulose (NFC) is a natural material consisting of 5 – 20 nm wide and several microns long fibrils. NFC demonstrates shear thinning behavior as a hydrogel, which makes it a perfect fit as a thickener for improvement of bioinks printability. For description on how to dilute NFC, mix with other biomaterials and cells and bioprint, follow the Preparation Protocol.
Intended use	Thickener of hydrogels and bioinks to be used in cell culture. *Research Grade*. For research use ONLY. Not intended for *in vitro* diagnostics and *in vivo* uses. Not intended for administration in humans or animals. Produced under sterile and aseptic conditions.
Product number	IKT20000
Shelf life	6 months, expiration date stated on package.
Storage and handling	Store at 4-8°C. DO NOT FREEZE. Avoid temperature fluctuations.
Safety	Handle in accordance with good hygiene and laboratory safety practices. Read Safety Data Sheet for more information regarding potential hazardous compounds.
Related documents	Preparation Protocol as well as Safety Data Sheet can be downloaded from our website *https://www.cellink.com/product/nanofibrillated-cellulose/.* Scan the QR code below to reach the product webpage.

Property of final bioink	Specification	Method
Appearance	White semi-translucent gel	Visual inspection.
Sterility	Sterile	Tested for the presence of bacteria, fungi and yeast. Tested on raw materials.
Endotoxin level	<5 EU/mL	Limulus Amoebocyte Lysate assay, Pharmacopoeia 2.6.14 "Bacterial endotoxins": Method D, accredited by SWEDAC. Accreditation Certification 1240: ISO 15189, 2010-11-22. Tested on raw material components.
Viscosity	≥5 kPa·s at 0.01 s^{-1}; ≤3 Pa·s at 200 s^{-1}	Tested using rotational 20 mm plate-plate HR-2 TA Instruments Rheometer for 2% NFC product. Flow sweep parameters: 25°C, shear rate from 0.001 s^{-1} to 500 s^{-1}.
pH	6.0-7.4	Assessed with pH paper for a 2% dispersion in water.