BLUE GOOSE BIOREFINERIES INC.™
Unlocking Biomass Potential

Grade Profile: BGB Ultra™ Cellulose Nanocrystals Suspension (Technical Grade)

Blue Goose Biorefineries Inc. BGB Ultra™ CNC is an aqueous suspension of type I cellulose nanocrystals that forms a gel at 8.0% w/w. It is produced with a transition metal catalyzed oxidative process. Features of BGB Ultra™ include:

- Uniform crystal size
- Non-Newtonian fluid behaviour (thixotropic)
- Chiral nematic network formation in water
- Dried films are birefringent
- No sulfate half ester moiety

This is a technical grade, suitable for research purposes. This material is not suitable for human consumption.

Typical Values (Not Specifications)

Biomass Source: Viscose grade dissolving pulp (Wood source Aspen and Maple)
Appearance: Translucent gel

Parameter	***Value***	***units***	***Test Method***
Crystallinity index	80%		Segal method
Crystal length	100-150	nm	TEM
Crystal diameter	9-14	nm	TEM
Hydrodynamic diameter	150	nm	DLS*
Zeta Potential	-35	mV	DLS*
Carboxyl Content	0.15	mmol/g	Conductivity titration + FTIR

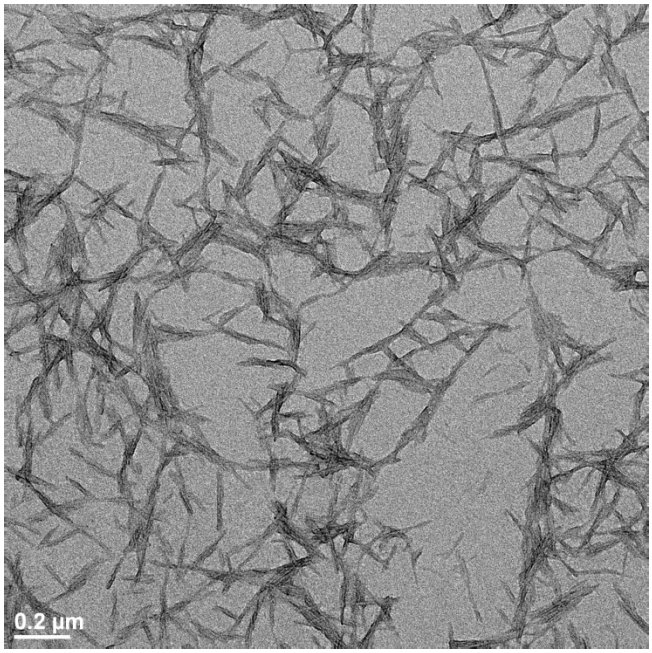

Image obtained using FEI Tecnai 12 BioTwin microscope at 120 kV. Uranyl acetate stain on copper TEM grid coated with amorphous silica.

*Using Malvern Zetasizer model Nano-ZS