CELNY™

Hydroxypropyl Cellulose for Nutraceutical Tablets

HPC Products for Nutraceuticals

Hydroxypropyl cellulose (HPC) is a high performance tablet binder widely used in the pharmaceutical and nutraceutical industry. CELNY™ brand is a high quality grade of HPC for food and nutraceutical use, manufactured in Japan by Nippon Soda Co., Ltd. ("Nisso"). CELNY is available in a wide range of molecular weights and particle sizes for specific application needs.

What's New

Celny SSL is a unique combination of "Super Super Low" (SSL) molecular weight of 40,000 Daltons with optimized particles size averaging 85 microns, available in Food Grade (FCC, JF, E463). It works very well in direct compression (DC) or wet granulation (WG). Low usage rates and high performance enable customers to formulate quickly and improve manufacturing profitability.

Celny SSL combines high performance with moderate cost. High efficiency reduces cost in use and increases manufacturing profit through faster press speed, reducing rejects, longer tooling life, lower variability.

Recommended Grades for Nutraceutical Tablets

	NISSO-SSL Super Fine Powder	CELNY SSL	CELNY-L Fine Powder	CELNY-H Fine Powder
Application	**Best** performing DC binder	**Better** performing DC binder also for WG	**Good** performing DC binder	**Sustained Release** DC binder
Attributes	• Tablet Problem Solver • Highest efficiency and compressibility • Fast disintegration • Anti-capping • For the most difficult formulations with high dose, poorly compressible actives • Pharma grade (USP-NF)	• First choice for DC or WG binder • High efficiency • Fast disintegration • Economical cost in use • Food grade (FCC)	• Traditional high performance DC binder • Gives strong tablets with low friability and good disintegration times • Food grade (FCC)	• High viscosity DC binder for sustained release tablets • Gives superior tablet hardness and strong matrix gel strength for steady active release up to 24 hours • Food grade (FCC)
Key Points	• Solves problems in the most difficult formulations • Downsizes tablets • Increase production profitability • Improve tablet robustness	• Robust, works in many formulations • Good powder flow • Easy to use • Hardness improvement • Friability reduction	• Versatile binder used in many commercial products	• Sustained release for improved efficacy of active ingredients • Reduces stomach upset • Long history of use in Pharma, growing in Nutra
Viscosity (mPa•s @20°C/ 2% aq)	2.0 ~ 2.9	2.0 ~ 2.9	6.0 ~ 10.0	1,000 ~ 4,000
Molecular Weight (GPC Method)	40,000	40,000	140,000	910,000
Particle Size D_{50} (microns)	20	85	94	110

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Case Study (Long Island University)

	Wt (mg)
Glucosamine HCL	1000
Binder: • Celny SSL • Nisso SSL-SFP • Celny L-FP • MCC 101, 102, 105	2.5-30%

Tableting Condition:
V-blend 15 minutes at 20 rpm
Pre-compression 30lb
Compression: 6631 lbs
Tablet: .34 × .75 oval shape faced punches in single tablet press NR-RD10A

Binder Comparison

Binder	For 12kp hardness and friability <0.5%
Nisso SSL-SFP	6%
Celny SSL	8%
Celny L-FP	12%
MCC 105	19%
MCC 102	29%
MCC 101	27%

- All HPC grades showed higher efficiency versus MCC
- Disintegration (<30 min) and powder flow not significantly different between binders

Recommendations

Typical usage levels are 3-5% in tablet formulations which contain a compressible filler. Higher levels might be needed for high dose, poorly compressible active ingredients.

For Direct Compression, add HPC after premixing the other ingredients and just before lubricant.

For Wet Granulation, Celny SSL can be added to the dry ingredients. Granulation solution of water or alcohol can be used.

Ideal Binder Properties:

Efficient – Low usage rate

Robust – Reduces manufacturing variability. Broad compatibility

Compressible – Improves hardness and reduces friability

Disintegration – Fast to dissolve

Label Friendly – Cellulose origin, Non-GMO Project Verified

Flowability – Particle size optimized for direct compression

Additional Information:

Food use approved: 21CFR 172.870 (U.S. FDA), E463 (Europe), I902603 (Japan)
Food Chemical Codex (FCC) and Japan Food Ingredients (JF) compliant
Packaging is 10kg box, double PE liner
Expiration is 5 years from date of manufacture

Gluten Free · Dairy Free · Kosher · Halal

NON GMO Project VERIFIED nongmoproject.org

Manufactured by:

NISSO HPC

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