

**CERTIFICATE OF ANALYSIS**

This is to certify that under-mentioned commodity has been duly inspected by us and meets our standard in all respects.

Commodity : Hydroxypropyl Cellulose
 CAS No. : 9004-64-2
 Grade : HPC-M
 Lot No. :
 Manufacturing Date : January, 2022
 Manufacturing Place : Nihongi Plant, 950, Fujisawa, Nakago-ku, Joetsu-shi, Niigata, 949-2392, Japan
 Expiry Date : December, 2026
 Retest Date* : December, 2026

ANALYSIS RESULTS

Characteristics	Test Methods	Specifications	Results
Identification(A,B)	USP-NF	Conforms	Conforms
Assay for Hydroxypropoxy groups	USP-NF	53.4-80.5 %	73.7 %
Residue on ignition	USP-NF	Not more than 0.8 %	0.1 %
Lead	ICP-MS	Not more than 10 ppm	≦ 10 ppm
pH	USP-NF	5.0-8.0	6.5
Loss on drying	USP-NF	Not more than 5.0 %	1.2 %
Viscosity (2% aqueous solution at 20°C)	USP-NF	150-400 mPa · s	280 mPa · s

※ We do not perform retest for HPC, therefore we assure only expiry date.

This analysis is according to USP-NF 2021.

Class2 solvent, toluene listed in USP <467> is used for the manufacturing of Nisso HPC.

The amount of toluene is monthly checked, using USP <467>. The obtained results are not more than 20ppm (LOQ) for the specification of 890ppm. There is no use of the organic solvents (chloroform; 1,4-dioxane; methylene chloride; tri-chloroethylene) during the manufacturing process of Nisso HPC, and no contaminant of during shipping or storage.

Nisso HPC is free from Silica.

The amount of Silica is monthly checked, using USP-NF 2021. The obtained results are not more than 0.06% (LOQ) for the specification of 0.6%. There is no use of anti-caking agent (Silica) during the manufacturing process of Nisso HPC.

Issued By:

Q.C.Manager
Nihongi Plant
Nippon Soda Co.,Ltd.

January 17, 2022

Date

Reviewed By:

Q.A.Sec.
Nihongi Plant
Nippon Soda Co.,Ltd.

January 17, 2022

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ANALYSIS RESULTS

Characteristics	Test Methods	Specifications	Results
Identification(A-C)	EP	Conforms	Conforms
Assay for Hydroxypropoxy groups	EP	53.4-80.5 %	73.7 %
Sulphated ash	EP	Not more than 0.8 %	0.1 %
pH	EP	5.0-8.0	6.5
Loss on drying	EP	Not more than 5.0 %	1.2 %
Apparent viscosity (2% aqueous solution at 20°C)	JP	150-400 mPa · s	280 mPa · s

※ We do not perform retest for HPC, therefore we assure only expiry date.

This analysis is according to EP10.0.

Class2 solvent, toluene listed in USP <467> is used for the manufacturing of Nisso HPC.

The amount of toluene is monthly checked, using USP <467>. The obtained results are not more than 20ppm (LOQ) for the specification of 890ppm. There is no use of the organic solvents (chloroform; 1,4-dioxane; methylene chloride; tri-chloroethylene) during the manufacturing process of Nisso HPC, and no contaminant of during shipping or storage.

Nisso HPC is free from Silica.

The amount of Silica is monthly checked, using EP10.0. The obtained results are not more than 0.06% (LOQ) for the specification of 0.6%. There is no use of anti-caking agent (Silica) during the manufacturing process of Nisso HPC.

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