

Scientific Documentation

Hypromellose, Substitution Type 2208, 100 mPa.s, USP

Not appropriate for regulatory submission.

Please visit www.spectrumchemical.com or contact Tech Services for the most up-to-date information contained in this information package.

Spectrum Chemical Mfg Corp 769 Jersey Avenue New Brunswick, NJ 08901 Phone 732.214.1300





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Specification for Hypromellose, Substitution Type 2208, 100 mPa.s, USP (HY123)

Item Number	HY123
Item	Hypromellose, Substitution Type 2208, 100 mPa.s, USP
CAS Number	9004-65-3
Molecular Formula	
Molecular Weight	
MDL Number	
Synonyms	Hydroxypropyl Methylcellulose ; Propylene Glycol Ether of Methylcellulose ; Modified Cellulose ; HPMC

Test	Specificat	ion
	Min	Max
VISCOSITY OF A 2% AQUEOUS SOLUTION @ 20D °C	80	120 mPa∙s
ASSAY (METHOXY GROUPS)	19.0	24.0%
ASSAY (HYDROXYPROPOXY GROUPS)	4.0	12.0%
pH	5.0	8.0
LOSS ON DRYING		5.0%
RESIDUE ON IGNITION		1.5%
ELEMENTAL IMPURITIES:		
NICKEL (Ni)	AS REPORTED	
CHROMIUM (Cr)	AS REPORTED	
IDENTIFICATION	TO PASS TEST	
RETEST DATE		
DATE OF MANUFACTURE		
APPEARANCE		
RESIDUAL SOLVENTS	AS REPORTED	
MONOGRAPH EDITION		

Spectrum Chemical Mfg Corp

Corporate Headquarters:	West Coast Facility:
769 Jersey Ave.	14422 S. San Pedro St.

Spectrum Chemical Mfg Corp

 Corporate Headquarters:
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 732.214.1300
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Certificate Of Analysis

Item Number	HY123	Lot Number	2MF0237
Item	Hypromellose, Substitution Type 2208, 100 mPa.s, USP	CAS Number	9004-65-3

TECT	SPECIFICATION		DECULT
TEST	MIN	MAX	RESULT
VISCOSITY OF A 2% AQUEOUS SOLUTION @ 20D ^o C	80	120 mPa∙s	101 mPa∙s
ASSAY (METHOXY GROUPS)	19.0	24.0%	23.0%
ASSAY (HYDROXYPROPOXY GROUPS)	4.0	12.0%	10.3%
рН	5.0	8.0	7.5
LOSS ON DRYING		5.0%	2.1%
RESIDUE ON IGNITION		1.5%	0.9%
ELEMENTAL IMPURITIES:			COMPLIES WITH STANDARD
NICKEL (Ni)	AS REPORTED		NONE DETECTED
CHROMIUM (Cr)	AS REPORTED		NONE DETECTED
IDENTIFICATION	TO PASS TEST		PASSES TEST
RETEST DATE			29-AUG-2027
DATE OF MANUFACTURE			30-AUG-2022
APPEARANCE			WHITE FREE FLOWING POWDER
RESIDUAL SOLVENTS	AS REPORTED		NO RESIDUAL SOLVENT PRESENT
MONOGRAPH EDITION			USP 2023

Certificate of Analysis Results Entered By:

GHERRERA Genaro Herrera 26-JUN-23 14:14:20

Spectrum Chemical Mfg Corp 755 Jersey Avenue New Brunswick 08901 NJ



Certificate of Analysis Results Approved By:

AWILLIAMS Allison Williams 26-JUN-23 14:14:28

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.

The Elemental Impurities standards implemented by USP and other Pharmaceutical Compendia reflect a growing understanding of the toxicology of trace levels of elemental impurities that can remain in drug substances originating from either raw materials or manufacturing processes. Identifying and quantifying impurities can be critical to predicting the best possible patient outcomes. Elemental Impurities has been a requirement of all products meeting USP/NF, EP and BP monographs since January 1, 2018. More information can be found in USP sections <232> Elemental Impurities – Limits and <233> Elemental Impurities – Procedures. Data for drug substances furnished by Spectrum Chemical Mfg. Corp can be used to ensure that patient daily exposures by oral administration to the selected elements are not exceeded in the formulation of pharmaceutical products.

SAFETY DATA SHEET

Revision date 22-August-2022

HYPROMELLOSE, 2208, 100 MPA·S, USP
HY123
None
and restrictions on use
No information available
No information available
data sheet

Emergency Telephone

Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Powder or Fine granules

Physical state Solid

Odor No information available



Revision Number 2

Other information

May form combustible dust concentrations in air.

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	Trade secret
Hypromellose 2208, 100 cps	9004-65-3	100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.	
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.	
Skin contact	Wash skin with soap and water.	
Ingestion	Clean mouth with water and drink afterwards plenty of water.	
Most important symptoms and effects, both acute and delayed		
Symptoms	No information available.	
Indication of any immediate medical attention and aposial tractment peopled		

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Explosion data Sensitivity to mechanical impac	t none.
Sensitivity to static discharge	none.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Conditions for safe storage, including any incompatibilities	
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls/personal protection

Control parameters

Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.
Appropriate engineering controls	
Engineering controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, suc	th as personal protective equipment
Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and chemical properties		
Physical state	Solid	
Appearance	Powder or Fine granules	
Color	White to Off-White	

Odor Odor threshold	No information available No information available	
Property_	Values_	Remarks • Method
pH	no data available	None known
Melting point / freezing point	no data available	None known
Boiling point / boiling range	no data available	None known
Flash point	no data available	None known
Evaporation rate	no data available	None known
Flammability (solid, gas)	no data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	no data available	None known
Relative density	1.3	None known
Water solubility	Soluble in water	None known
Solubility(ies)	no data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	no data available	None known
Decomposition temperature		None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	No data available	None known
Other information_		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

No information available.

Acute toxicity

Numerical measures of toxicity

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization Germ cell mutagenicity	No information available. No information available. No information available. No information available.
Reproductive toxicity	No information available.
STOT - single exposure STOT - repeated exposure Aspiration hazard	No information available. No information available. No information available.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information		
Ecotoxicity	The environmental impact of this product has not been fully investigated.	
Persistence and degradability Bioaccumulation	No information available. Inherently biodegradable.	
Other adverse effects	No information available.	

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

DOT	not regulated
TDG	not regulated
MEX	not regulated
ICAO (air)	not regulated
IATA	not regulated
IMDG	not regulated

RID	not regulated
ADR	not regulated
ADN	not regulated

15. Regulatory information

International Inventories

TSCA

Complies

EINECS/ELINCSDoes not ComplyENCSThis product complies with ENCS:IECSCThis product complies with China:KECLCompliesPICCSCompliesAICSAll the constituents of this material are listed on the Australian Inventory of Chemic Substances (AICS).

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

<u>NFPA</u> Health hazards Flammability 0 Instability 0 Physical and che <u>HMIS</u> Health hazards Flammability 0 Physical hazards Personal protect	emical properties - 0 a 0		
	abbreviations and acronyms used in the sa 8: EXPOSURE CONTROLS/PERSONAL PR		<u>t</u>
TWA Ceiling	TWA (time-weighted average) Maximum limit value	STEL	STEL (Short Term Exposure Limit)
Agency for Toxic S U.S. Environmenta European Food Sa EPA (Environmenta Acute Exposure G U.S. Environmenta Food Research Jo Hazardous Substa International Unifo Japan GHS Class Australia National NIOSH (National I National Library of National Library of National Toxicolog New Zealand's Ch Organization for E	ance Database rm Chemical Information Database (IUCLID) ification Industrial Chemicals Notification and Assessen nstitute for Occupational Safety and Health) i Medicine's ChemID Plus (NLM CIP) i Medicine's PubMed database (NLM PUBMEI gy Program (NTP) nemical Classification and Information Database conomic Co-operation and Development Envi conomic Co-operation and Development High conomic Co-operation and Development Scre	gicide, and Rode Chemicals nent Scheme (NI D) se (CCID) ronment, Health, Production Volu	ICNAS) , and Safety Publications ume Chemicals Program
Revision date	22-August-2022 No information available		

Revision Note Disclaimer

No information available.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

spectrum

Certification of Compliance with current Good Manufacturing Practices

Dear Valued Customer:

Spectrum Chemical Mfg Corp certifies that the following product(s) is produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Catalog Number	Product Name
HY123	Hypromellose, Substitution Type 2208, 100 mPa.s, USP

Spectrum is an FDA registered and inspected Drug Establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum-Gardena, CA:2020632Spectrum-New Brunswick, NJ:2246824

Thank you for your interest in Spectrum products. If we may be of further assistance, please feel free to contact the Quality Assurance department at 310-516-8000 or via email at <u>qualityassurance@spectrumchemical.com</u>

Sincerely,

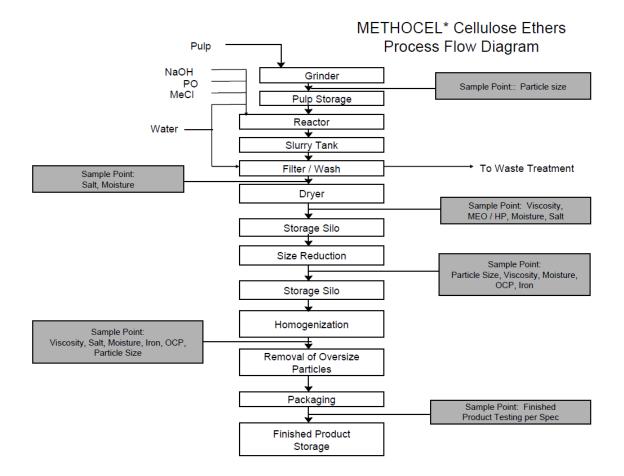
Oulu Clamy

Oralia Chavez Quality Assurance Specialist



Manufacturing Process Flowchart

Hypromellose, Substitution Type 2208, 100 mPa.s, USP (Cat# HY123)



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WEST COAST FACILITY

14422 South San Pedro Street Gardena, California 90248 PHONE 310.516.8000 FAX 310.516.9843



HY123, Hypromellose, Substitution Type 2208, 100 mPa.s, USP

Source Statement

The above mentioned catalog item is derived from pine and spruce tree trunks. No animal derived products are used in the manufacturing process.

BSE/TSE Statement

The above mentioned catalog item does not contain nor is manufactured using any animal derived products and is therefore, BSE/TSE free.

Allergen Statement

The above mentioned catalog item does not contain any of the following:

- Milk
- Egg
- Fish
- Shellfish
- Tree Nuts
- Wheat
- Peanuts
- Soy

- Cereals containing Gluten
- Celery
- Mustard
- Sesame Seed
- Corn
- Latex
- Sulfites > 10 ppm

EU Fragrance Allergen Statement

The above mentioned catalog item does not contain any of the 26 EU fragrance allergens listed in Annex III lines 67-92. These substances are not intentionally added to the following chemical and therefore are not expected to be present.

GMO Statement

The above mentioned catalog item is manufactured without the use of genetically modified organisms and is therefore GMO free.



Melamine Statement

The above mentioned catalog does not use or add melamine to the manufacturing process and is considered melamine-free.

Nitrosamine Statement

Based on knowledge of the manufacturing process, nitrosamine impurities are not known or suspected to be present in this material.

Animal Testing Statement

The above mentioned catalog item has been tested on animals.

Organic Compliance Statement

The above mentioned catalog item has not been produced using GMOs, irradiation, ethylene oxide (EtO) or sewage sludge.

Shelf Life Statement

The above mentioned catalog item is typically assigned a shelf life of 60 months from the date of manufacture. The actual assigned shelf life for any specific lot should be referenced on the Certificate of Analysis.

Other Chemicals Statement

Spectrum does not have any reason to suspect the above mentioned catalog item contains any of the following chemicals. This product does not come into contact with these chemicals during packaging or storage:

- Antibiotics
- Bisphenol A (BPA)
- Parabens
- Pesticides
- Phthalates
- Preservatives

spectrum

RE: Elemental Impurities - Hypromellose, Substitution Type 2208, 100 mPa.s, USP (Cat# HY123)

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

The above material complies with the USP<232>, <233> Elemental Impurities and the ICH Q3D Elemental Impurities Guideline. The following elemental impurities are likely to be present:

Elemental Impurity		Class	Expected Concentration
Cadmium	Cd	1	< 1.0 ppm
Lead	Pb	1	< 10 ppm
Arsenic	As	1	< 3.0 ppm
Mercury	Hg	1	< 1.0 ppm

Other elemental impurities considered by USP <232>, <233> and ICH Q3D which are not addressed in the above mentioned table are not likely to be present. These substances are not used in the production process, are not intentionally added or known to be present in the above mentioned material.

This information is subject to change and is intended for risk assessment only. It is responsibility of the end user to evaluate suitability of any chemical for the intended use as well as to assess compound-specific limits of daily intake of metal impurities. For lot-specific information, please refer to the respective Certificate of Analysis.

If you have any further questions, please contact us by telephone at 1(800)772-8786 Option 2, or by email at <u>TechServices@spectrumchemical.com</u>.

Sincerely,

Technical Services Spectrum Chemical Mfg. Corp.

This document has been produced electronically and is valid without a signature.

CORPORATE HEADQUARTERS

769 Jersey Avenue New Brunswick, NJ 08901 PHONE 732.214.1300 FAX 732.246.7132

WEST COAST FACILITY

14422 South San Pedro Street Gardena, California 90248 PHONE 310.516.8000 FAX 310.516.9843

AN ISO 9001:2015 REGISTERED COMPANY



RE: Residual Solvents - Hypromellose, Substitution Type 2208, 100 mPa.s, USP (Cat# HY123)

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

The above mentioned catalog item complies with the requirements of the USP <467> Residual Solvents and the ICH Q3C Residual Solvents Guideline. No Class 1, Class 2, Class 3 or other solvents are used or produced in the manufacture of this product.

For lot-specific information, please refer to the respective Certificate of Analysis.

If you have any further questions, please contact us by telephone at 1(800)772-8786 Option 2, or by email at <u>TechServices@spectrumchemical.com</u>.

Sincerely,

Technical Services Spectrum Chemical Mfg. Corp.

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AN ISO 9001:2015 REGISTERED COMPANY

spectrum®

Label Information

The Spectrum label presents technical and safety information in an easily understood format. Our technical specialists stay abreast of the latest requirements of the Globally Harmonized System for Classification and Labelling of Chemicals (GHS), as well as the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA) and other government regulatory agencies in order to ensure compliance, accuracy and concise hazard communication. Below you will find a typical label example for this catalog item.

WARNING • May form combustible dust concentrations in air. • Keep away from all igniti including heat, sparks and fix container closed and grounded • • accumulations to minimize exploit This material has been evaluat criteria and is not classified at under GHS. All chemicals may pro- hazards and must be used w • Use personal protection and si • methods consistent with proper • afety practices. Consult SDS of properties and precautions. reaction occurs seek medical at KEEP FROM CHILDI	on sources ame • Keep Prevent dust usion hazard. ed per GHS is hazardous se unknown ith caution. afe handling fr adverse tention. REN	SIZ SY Assay: Assay: Methylcellulose; ropylene Glycol Ether Icellulose) n Type 2208 mPa-s SP 04-65-3 WAR	Athoxy Groups	24.0% -12.0% 5.0-8.0 5.0% 1.5% eported ass test e Harm-
	REN Chemical Emergen	, ,	GHS ? Lot No. XQ	###

Spectrum Chemical Mfg Corp

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