

Scientific Documentation

Meclofenamate Sodium, 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 Meclofenamate Sodium, USP (M1102)

Item Number	M1102
Item	Meclofenamate Sodium, USP
CAS Number	67254-91-5
Molecular Formula	C ₁₄ H ₁₀ Cl ₂ NNaO ₂ •H ₂ O
Molecular Weight	336.14
MDL Number	
Synonyms	

Test	Specification	
	Min	Max
ASSAY (C ₁₄ H ₁₀ Cl ₂ NNaO ₂ ; ANHYDROUS BASIS)	97.0	103.0 %
WATER DETERMINATION	4.8	5.8 %
COPPER		0.003 %
CHROMATOGRAPHIC PURITY	TO PASS TEST	
ELEMENTAL IMPURITIES	AS REPORTED	
IDENTIFICATION	TO PASS TEST	
EXPIRATION DATE		
DATE OF MANUFACTURE		
APPEARANCE		
RESIDUAL SOLVENTS	TO PASS TEST	

Spectrum Chemical Mfg Corp

Corporate Headquarters: West Coast Facility:
769 Jersey Ave. 14422 S. San Pedro St.
New Brunswick, NJ 08901 Gardena, CA 90248
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Certificate Of Analysis

Item Number	M1102	Lot Number	4KL0002
Item	Meclofenamate Sodium, USP	Manufacturer Lot	MEFNP01
CAS Number	67254-91-5	Manufacturer Code	13524
Molecular Formula	C ₁₄ H ₁₀ Cl ₂ NNaO ₂ •H ₂ O	Molecular Weight	336.14

TEST	SPECIFICATION		DECLUT
IESI	MIN	MAX	RESULT
$\begin{array}{ll} \operatorname{ASSAY} (\operatorname{C}_{14}\operatorname{H}_{10}\operatorname{Cl}_{2}\operatorname{NNaO}_{2}; \operatorname{ANHYDROUS} \\ \operatorname{BASIS}) \end{array}$	97.0	103.0 %	98.9%
WATER DETERMINATION	4.8	5.8 %	4.9%
COPPER		0.003 %	<0.003%
CHROMATOGRAPHIC PURITY	TO PASS TEST		PASSES TEST
ELEMENTAL IMPURITIES	AS REPORTED		COMPLIES WITH STANDARD
IDENTIFICATION	TO PASS TEST		PASSES TEST
EXPIRATION DATE			30-MAR-2026
DATE OF MANUFACTURE			01-APR-2021
APPEARANCE			OFF WHITE CRYSTALLINE POWDER
RESIDUAL SOLVENTS	TO PASS TEST		PASSES TEST
CLASS 2 (SOLVENT) / METHANOL			<3000 PPM
CLASS 2 (solvent) / TOLUENE			<890 PPM
CLASS 3 (solvent) / ACETONE			<3000 PPM
CLASS 3 (solvent) / 1-BUTANOL			<5000 PPM

Certificate of Analysis Results Entered By:

BPATEL Bhargavi Patel 17-FEB-22 13:03:38

Spectrum Chemical Mfg Corp 777 Jersey Avenue New Brunswick 08901 NJ



Certificate of Analysis Results Approved By:

BPATEL Bhargavi Patel 17-FEB-22 13:03:55

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.

Spectrum Chemical Mfg. Corp. repackages Active Pharmaceutical Ingredient chemicals provided by other manufacturers and suppliers. For traceability purposes, Spectrum's Certificate of Analysis contains an identifier code unique to each manufacturer or supplier, as well as the chemical's lot number provided on the original manufacturer Certificate of Analysis. This material is manufactured by Yung Shin Pharm. Ind. Co., Ltd. at 1191, Chung Shan Rd., Sec. 1, Tachia, Taichung City, 43744, Taiwan. Copies of the original Certificate of Analysis are available upon request from your Spectrum Sales Representative or by calling Spectrum's Quality Department at 1-800-772-8786.

SAFETY DATA SHEET SPECTIUM®



Revision date 19-October-2022

Revision Number 2

1. Identification

Product identifier

Product Name MECLOFENAMATE SODIUM, USP

Other means of identification

Product Code(s) M1102

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use No information available

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

Spectrum Chemical Mfg. Corp. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000

(813) 818 888

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2B
Skin sensitization	Category 1A
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Hazard statements

Harmful if swallowed Causes eye irritation May cause an allergic skin reaction May cause respiratory irritation



Appearance Crystalline powder Physical state Solid Odor No information available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing must not be allowed out of the workplace

Wear protective gloves

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

Specific treatment (see .? on this label)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention IF ON SKIN: Wash with plenty of water and soap

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

No information available.

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%
Meclofenamate Sodium	6385-02-0	100

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Get medical attention if irritation develops and persists.

Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation

or allergic reactions see a physician.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically.

5. Fire-fighting measures

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

Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO2). Sodium oxides. Nitrogen oxides (NOx). hydrogen

chloride gas.

Explosion data

Sensitivity to mechanical impact 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 Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required. Evacuate personnel to safe areas. Keep people away

from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

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. Avoid contact with

skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take

off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach

of children. Store locked up.

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, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). None required for consumer use.

Hand protection Wear suitable gloves.

Skin and body protectionWear suitable protective clothing.

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 Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid

AppearanceCrystalline powderColorWhite to Off-WhiteOdorNo information availableOdor thresholdNo information available

Property Values Remarks • Method

no data available None known 290 °C / 554 °F Melting point / freezing point None known **Boiling point / boiling range** no data available None known None known Flash point no data available None known no data available **Evaporation rate** Flammability (solid, gas) no data available None known Flammability Limit in Air None known

No data available

Upper flammability or explosive

limits

Lower flammability or explosive No data available

limits

Vapor pressureNo data availableNone knownVapor densityno data availableNone knownRelative densityno data availableNone knownWater solubilitySoluble in waterNone known

Soluble in Ethanol Solubility(ies) None known

soluble in dimethylformamide

Soluble in Dimethyl Sulfoxide

Partition coefficient No data available None known no data available None known **Autoignition temperature** None known **Decomposition temperature**

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 No information available Softening point Molecular weight No information available **VOC Content (%)** No information available No information available **Liquid Density** No information available **Bulk density**

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

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Specific test data for the substance or mixture is not available. Causes eye irritation. May Eve contact

cause redness, itching, and pain.

Skin contact May cause sensitization by skin contact. Specific test data for the substance or mixture is

not available. Repeated or prolonged skin contact may cause allergic reactions with

susceptible persons. (based on components).

Ingestion Specific test data for the substance or mixture is not available. Harmful if swallowed. (based

on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives. May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity

Skin corrosion/irritation

Serious eye damage/eye irritation Respiratory or skin sensitization

Germ cell mutagenicity

May cause skin irritation.

Classification based on data available for ingredients. Irritating to eyes.

May cause sensitization by skin contact.

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.

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 Not listed

Note *Contact supplier for details. One or more substances in this product are either not listed

on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise

exempted from inventory listing requirements

DSL/NDSL Does not Comply

EINECS/ELINCS Complies

ENCS This product complies with ENCS: IECSC This product does not comply with china:

KECL Complies PICCS Does not Comply

AICS This product does not comply with 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

NFPA

Health hazards 2 Flammability 0 Instability 0

Physical and chemical properties -

HMIS

Health hazards 2 Flammability 0 Physical hazards 0 Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA) EPA (Environmental Protection Agency) Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

Revision date 19-October-2022
Revision Note 19-October 2022
No information available.

Disclaimer

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



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
M1102	Meclofenamate Sodium, 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: 2020632 Spectrum-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 qualityassurance@spectrumchemical.com

Sincerely,
Quality Assurance
Spectrum Chemical Mfg. Corp.

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



Residual Solvents - Meclofenamate Sodium, USP (Catalog No. M1102)

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 USP <467> Residual Solvents and ICH Q3C Residual Solvents Guideline. The following solvents are likely to be present:

Residual Solvent	Class	Expected Concentration
Methanol	2	< 3000 ppm
Toluene	2	< 890 ppm
Acetone	3	< 3000 ppm
1-Butanol	3	< 5000 ppm

No Class 1 or other solvents are used or produced in the manufacturing process of this material.

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 TechServices@spectrumchemical.com.

Sincerely, Technical Services Spectrum Chemical Mfg. Corp.

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



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

0000-00-00

Date:

• Harmful if swallowed • Causes eye irritation • May cause respiratory irritation . May cause an allergic skin reaction.

- Do not eat, drink or smoke when using this product Wear protective gloves • Avoid breathing dust • Use
 only outdoors or in a well-ventilated area • Wash face, hands and any exposed skin thoroughly after handling
- • Contaminated work clothing must not be allowed out of the workplace.

FIRST AID: Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. IF ON SKIN: Wash with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Rinse

KEEP FROM CHILDREN

SIZ SY M1102 Meclofenamate Sodium

USP

CAS 67254-91-5

CAUTION: For manufacturing, processing or repacking. Rx only. Read and understand the label and Safety Data

Chemical Emergency: (800)424-9300

Sheet (SDS) prior to use.

www.SpectrumChemical.com

C₁₄H₁₀Cl₂NNaO₂•H₂O F.W. 336.14

Manufacturer Lot Number	
Assay (C ₁₄ H ₁₀ Cl ₂ NNaO ₂ ; Anhydrous Basis)	
97.0	
Water Determination	4.8-5.8%
MAXIMUM LIMITS	
Copper	. 0.003%
Chromatographic Purity To	pass test
Elemental Impurities As	reported
Residual Solvents To	
LIGHT OFNOITIVE IV. III II I	

LIGHT SENSITIVE: Keep tightly closed in light-resistant containers

Repackaged by Spectrum as:

Lot No. XQ#### G 7/J1GHS-A

Spectrum Chemical Mfg Corp

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