

Scientific Documentation

Edetate Disodium, USP, EP, JP, bioCERTIFIED (TM)

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 Edetate Disodium, USP, EP, JP, bioCERTIFIED (TM) (E9600)

Item Number	E9600
Item	Edetate Disodium, USP, EP, JP, bioCERTIFIED (TM)
CAS Number	6381-92-6
Molecular Formula	C ₁₀ H ₁₄ N ₂ Na ₂ O ₈ •2H ₂ O
Molecular Weight	372.24
MDL Number	
Synonyms	Ethylenediaminetetraacetic Acid Disodium Salt ; EDTA, Disodium ; (Ethylenedinitrilo)tetraacetic Acid Disodium

Test	Specification	
	Min	Max
APPEARANCE		
ASSAY (DRIED BASIS, USP)	99.0	101.0 %
ASSAY (AS DIHYDRATE, EP)	98.5	101.0 %
ASSAY (AS DIHYDRATE, JP)	99.0 %	
APPEARANCE OF SOLUTION (EP)	CLEAR AND COLORLESS	
CLARITY AND COLOR OF SOLUTION (JP)	CLEAR AND COLORLESS	
pH OF A 5% SOLUTION @ 25°C (USP)	4.0	6.0
pH OF A 5% SOLUTION @ 20°C (EP)	4.0	5.5
pH OF A 1% SOLUTION @ 25°C (JP)	4.3	4.7
LOSS ON DRYING (USP)	8.7	11.4 %
RESIDUE ON IGNITION (JP)	37.0	39.0 %
CALCIUM (USP)	NO PRECIPITATE FORMS	
CYANIDE (JP)	NO MORE COLOR THAN CONTROL	
IRON (EP)		80 ppm
HEAVY METALS (JP)		10 ppm
ARSENIC (JP)		2 ppm
ELEMENTAL IMPURITIES	AS REPORTED	
NITRILOTRIACETIC ACID (USP)		0.1 %

Test	Specification	
	Min	Max
IMPURITY A (EP)		0.1 %
MICROBIAL LIMITS:		
BACTERIAL ENDOTOXIN (BET)		2.5 EU/mg
TAMC		1000 CFU/g
TYMC		100 CFU/g
IDENTIFICATION (A) FTIR	SPECTRUM MATCHES REFERENCE	
IDENTIFICATION (B)	RED COLOR IS DISCHARGED	
IDENTIFICATION (C)	POSITIVE FOR SODIUM	
IDENTIFICATION (B) EP	NO PRECIPITATE IS FORMED	
IDENTIFICATION (C) EP	NO PRECIPITATE IS FORMED	
IDENTIFICATION (1) JP	PURPLE COLOR DEVELOPS	
IDENTIFICATION (2) JP	240	244°C
EXPIRATION DATE		
DATE OF MANUFACTURE		
RESIDUAL SOLVENTS	AS REPORTED	
MONOGRAPH EDITION		
MONOGRAPH EDITION.		
MONOGRAPH EDITION		

Spectrum Chemical Mfg Corp

Corporate Headquarters:West Coast Facility:769 Jersey Ave.14422 S. San Pedro St.New Brunswick, NJ 08901Gardena, CA 90248732.214.1300310.516.8000



Certificate Of Analysis

Item Number	E9600	Lot Number	4LH0004
Item	Edetate Disodium, USP, EP, JP, bioCERTIFIED (TM)	CAS Number	6381-92-6
Molecular Formula	$C_{10}H_{14}N_2Na_2O_8$ •2 H_2O	Molecular Weight	372.24

TECT	SPECIFICATION		DECLUT	
TEST	MIN	MAX	RESULT	
APPEARANCE			WHITE POWDER	
ASSAY (DRIED BASIS, USP)	99.0	101.0 %	100.0 %	
ASSAY (AS DIHYDRATE, EP)	98.5	101.0 %	99.0 %	
ASSAY (AS DIHYDRATE, JP)	99.0 %		99.1 %	
APPEARANCE OF SOLUTION (EP)	CLEAR AND COLORLESS		CLEAR AND COLORLESS	
CLARITY AND COLOR OF SOLUTION (JP)	CLEAR AND COLORLESS		CLEAR AND COLORLESS	
pH OF A 5% SOLUTION @ 25°C (USP)	4.0	6.0	4.53	
pH OF A 5% SOLUTION @ 20°C (EP)	4.0	5.5	4.53	
pH OF A 1% SOLUTION @ 25°C (JP)	4.3	4.7	4.596	
LOSS ON DRYING (USP)	8.7	11.4 %	9.3 %	
RESIDUE ON IGNITION (JP)	37.0	39.0 %	38.18 %	
CALCIUM (USP)	NO PRECIPITATE FORMS		NO PRECIPITATE FORMS	
CYANIDE (JP)	NO MORE COLOR THAN CONTROL		NO MORE COLOR THAN CONTROL	
IRON (EP)		80 ppm	<80 ppm	
HEAVY METALS (JP)		10 ppm	<10 ppm	
ARSENIC (JP)		2 ppm	<0.05 ppm	
ELEMENTAL IMPURITIES	AS REPORTED		COMPLIES WITH STANDARD	
NITRILOTRIACETIC ACID (USP)		0.1 %	0.0 %	
IMPURITY A (EP)		0.1 %	0.0 %	
MICROBIAL LIMITS:				

TECT	SPECIFICATION		DECLUT	
TEST	MIN	MAX	RESULT	
BACTERIAL ENDOTOXIN (BET)		2.5 EU/mg	<2.5 EU/mg	
TAMC		1000 CFU/g	<1000 CFU/g	
ТҮМС		100 CFU/g	<100 CFU/g	
IDENTIFICATION (A) FTIR	SPECTRUM MATCHES REFERENCE		SPECTRUM MATCHES REFERENCE	
IDENTIFICATION (B)	RED COLOR IS DISCHARGED		RED COLOR IS DISCHARGED	
IDENTIFICATION (C)	POSITIVE FOR SODIUM		POSITIVE FOR SODIUM	
IDENTIFICATION (B) EP	NO PRECIPITATE IS FORMED		NO PRECIPITATE FORMED	
IDENTIFICATION (C) EP	NO PRECIPITATE IS FORMED		NO PRECIPITATE FORMED	
IDENTIFICATION (1) JP	PURPLE COLOR DEVELOPS		PURPLE COLOR DEVELOPS	
IDENTIFICATION (2) JP	240	244°C	240.9°C	
EXPIRATION DATE			16-APR-2025	
DATE OF MANUFACTURE			17-APR-2022	
RESIDUAL SOLVENTS	AS REPORTED		NO RESIDUAL SOLVENTS USED	
MONOGRAPH EDITION			USP 2022	
MONOGRAPH EDITION.			EP 10	
MONOGRAPH EDITION			JP 18	

Certificate of Analysis Results Entered By:

SVANGOOR Swetha Vangoor 27-SEP-22 12:23:09

Spectrum Chemical Mfg Corp 777 Jersey Avenue New Brunswick 08901 NJ



Certificate of Analysis Results Approved By:

BPATEL Bhargavi Patel 28-SEP-22 05:43:24

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.





Revision date 17-December-2021 Revision Number 2

1. Identification

Product identifier

Product Name EDETATE DISODIUM, DIHYDRATE, USP, EP. IP

Other means of identification

Product Code(s) E9600

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

Emergency telephone number

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 Crystalline powder Physical state Solid Odor No information available

Other information

No information available.

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	Trade secret
Edetate Disodium, Dihydrate	6381-92-6	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 special treatment needed

5. Fire-fighting measures

surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing mediaDo not scatter spilled material with high pressure water streams.

Specific hazards arising from the

chemical

No information available.

Hazardous combustion products Carbon Monoxide, Carbon Dioxide. Nitrogen oxides (NOx). Sodium oxides.

Explosion data

Sensitivity to mechanical impact none.

Sensitivity to static discharge none.

Special protective equipment for 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, such as personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protectionNo 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 Crystalline powder

White Color

No information available Odor **Odor threshold** No information available

Property Values Remarks • Method

no data available None known pН Melting point / freezing point 252 °C / 485.6 °F 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 no data available Flammability (solid, gas) None known Flammability Limit in Air

None known

Upper flammability or explosive No data available

limits

Lower flammability or explosive No data available

limits

Vapor pressure No data available None known Vapor density no data available None known Relative density 1.77 None known Soluble in water None known Water solubility Solubility(ies) no data available None known None known No data available Partition coefficient None known no data available **Autoignition temperature 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 No information available Softening point

Molecular weight 372.24

VOC Content (%) No information available **Liquid Density** No information available **Bulk density** No information available

10. Stability and reactivity

Reactivity No information available.

Stable under normal conditions. Chemical stability

Possibility of hazardous reactions None under normal processing.

None known based on information supplied. Conditions to avoid

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

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Edetate Disodium, Dihydrate 6381-92-6	> 2000 mg/kg (Rat)	-	-

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 toxicityNo 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

_ =					
	Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
ı				microorganisms	
Γ	Edetate Disodium,	67 mg/l EC50	-	-	> 100 mg/L 24h
1	Dihydrate	Chlorococcales (Grean			
1	6381-92-6	algae order) 24 h			

Persistence and degradability

Bioaccumulation

No information available. Inherently biodegradable.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

products

Waste from residues/unused

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 Complies
EINECS/ELINCS Does not Comply

ENCS This product complies with ENCS: IECSC This product complies with China:

KECL Does not Comply

PICCS Complies

AICS All the constituents of this material are listed on the Australian Inventory of Chemical

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

NFPA

Health hazards 0 Flammability 0 Instability 0

Physical and chemical properties -

HMIS

Health hazards 0 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 17-December-2021 Revision Note 17-December-2021 No information available.

<u>Disclaimer</u>
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	
E9600	Edetate Disodium, USP, EP, JP, bioCERTIFIED ™	

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,

Oralia Chavez

Quality Assurance Specialist

Order Clony



E9600, Edetate Disodium, USP, EP, JP, bioCERTIFIED ™

Source Statement

The above mentioned catalog item is manufactured by chemical synthesis. No animal or plant 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 before 2014.

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 36 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:

- Aflatoxins
- Antibiotics
- Bisphenol A (BPA)
- CMR Substances

- Parabens
- Pesticides
- Phthalates
- Preservatives



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.



USE CARE: This material has been evaluated per GHS/OSHA criteria and is not classified as hazardous. All chemicals may pose unknown hazards and must be used with caution. Use personal protection and safe handling methods consistent with proper workplace safety practices. Consult SDS for additional properties and precautions. If adverse reaction occurs seek medical attention.

KEEP FROM CHILDREN WARNING:

Cancer and Reproductive Harmwww.P65Warnings.ca.gov

SIZ SY E9600 **Edetate Disodium**

(EDTA, Disodium; Ethylenediaminetetraacetic Acid Disodium Salt)

> USP, EP, JP, bioCERTIFIED™ CAS 6381-92-6

CAUTION: For manufacturing, processing or repacking. Not for use in parenteral applications. Read and understand the label and Safety Data Sheet (SDS) prior to use.

Chemical Emergency: (800)424-9300

www.SpectrumChemical.com

C₁₀H₁₄N₂Na₂O₈•2H₂O F.W. 372.24

Not Sterile.

Assay (Dried Basis, USP)	99.0-101.0%
Assay (as Dihydrate, EP)	
Assay (as Dihydrate, JP)	
Appearance of Solution (EP)	
Clarity and Color of Solution (JP)	
pH of a 5% Solution @ 25°C (USP)	4.0-6.0
pH of a 5% Solution @ 20°C (EP)	
pH of a 1% Solution @ 25°C (JP)	
Loss on Drying (USP)	8.7-11.4%
Residue on Ignition (JP)	
MAXIMUM LIMITS	
Calcium (USP)	To pass test
Cyanide (JP)	
Iron (EP)	80 ppm
Heavy Metals (JP)	
Arsenic (JP)	
Elemental Impurities	
Nitrilotriacetic Acid (USP)	0.1%
Impurity A (EP)	0.1%
Residual Solvents	To pass test

Lot No. XQ#### G 3/K12GHS

Spectrum Chemical Mfg Corp

Corporate Headquarters: 769 Jersey Ave.

New Brunswick, NJ 08901

310.516.8000

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