

Material Safety Data Sheet

Versa EDTA Mn 6%

Manufactured for:
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SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Product Name: Versa EDTA Mn 6%
Chemical Name: Ethylenediaminetetraacetic acid, manganese dipotassium complex
Synonyms/Other: Manganese dipotassium EDTA
Chemical Formula: $C_{10}H_{12}N_2O_8Mn \cdot 2K$
MSDS CODE: 11027
Product Use: Plant micronutrient
Preparation/Revision Date: 01/18/2013

Date of First Issue:	January 18, 2013	Revision No.:	1.0
Revision Date:	NA	Changes:	NA

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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

No significant immediate hazards for emergency response are known.
Iron deficiency and liver dysfunction are risk factors associated with the excessive accumulation of Manganese (see Section 11).

Appearance and odor: Odorless clear light pink liquid.

POTENTIAL HEALTH EFFECTS (see section 11 for additional information)

Primary Route(s) of Exposure: Eye contact, skin contact and inhalation.

Acute Exposure

- **Eye Contact:** Eye contact may cause mild irritation.
- **Skin Contact:** Skin contact may cause slight irritation.
- **Inhalation:** Exposure to an excessive concentration of vapor, mist or aerosol may cause respiratory tract discomfort and/or irritation.
- **Ingestion:** This product has a low order of acute toxicity.

Chronic Exposure: EDTA and its sodium salts have been reported to cause birth defects in some animal studies in the presence of maternal toxicity.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by IARC, NTP, ACGIH or OSHA.

Medical conditions Aggravated:

No data available.

POTENTIAL ENVIRONMENTAL EFFECTS:

(See Section 12 for additional information) This product is not considered to be harmful to aquatic life, based on available data.

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SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS [See Section 8 for exposure limits]	% (w/w)	CAS Number
Manganese dipotassium EDTA complex	44 – 48	68015-77-0
Dipotassium EDTA	0.2 – 2.0	2001-94-7
Water	balance (50-56)	7732-18-5

SECTION 4 FIRST AID MEASURES

Although this product is not considered a hazardous material, the following measures are generally recommended following human exposure to chemical products.

Eye Contact:	Check for and remove contact lenses. Flush immediately with copious amounts of water or normal saline (minimum of 15 minutes), holding eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.
Skin Contact:	Remove contaminated clothing, shoes and equipment. Wash exposed area with plenty of soap and water. Repeat washing. If redness or irritation occurs, seek medical attention. Wash contaminated clothing before reuse.
Inhalation:	No adverse effects anticipated. If necessary, remove victim to fresh air and loosen clothing. Get medical attention.
Ingestion:	ONLY induce vomiting at the instructions of a physician. If victim is conscious, rinse mouth and give water to drink. Never give anything by mouth to an unconscious person. Seek medical advice.
Note to Physician:	Attending physician should treat exposed patients symptomatically.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point:	Not applicable.					
Flammable Limits:	Not applicable.					
Autoignition Temperature:	Not determined					
Extinguishing Media:	Use any means suitable for extinguishing surrounding fire. Use water spray to cool fire-exposed containers, to dilute liquid, and control vapor.					
Firefighting Procedures:	General guidelines as this material won't burn without driving off water: Not considered to be a fire hazard. Evacuate area and fight fire from a safe distance. Fire fighters must wear MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.					
Unusual Fire & Explosion Hazards:	This solution is not considered to be an explosion hazard.					
Byproducts of Combustion:	Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides, carbon oxides and metal oxide fumes.					
Explosion Data:	Not determined. This solution is not considered to be an explosion hazard.					
NFPA 704 Hazard Rating -	<table><tr><td>Health: 1 [0-Minimal</td><td>Fire: 0 1-Slight</td><td>Instability: 0 2-Moderate</td><td>Other: None 3-High</td><td>Other: None 4-Extreme]</td></tr></table>	Health: 1 [0-Minimal	Fire: 0 1-Slight	Instability: 0 2-Moderate	Other: None 3-High	Other: None 4-Extreme]
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SECTION 6 ACCIDENTAL RELEASE MEASURES

- Spill/Leak:** Wear appropriate personal protective equipment. Safely stop source of spill. Initially minimize area affected by the spill or leak. Block any potential routes to water systems (e.g., sewers, streams, lakes, etc.). Restrict non-essential personnel from area. Spill or leak residuals may have to be collected and disposed of. Clay, soil or commercially available absorbents may be used to recover any material that can not readily be recovered as pure product.
- Cleanup:** Determine if waste containing this product can be handled by available industrial effluent system or other on-site waste management unit. If off-site management is required, contact a company experienced in industrial waste management. This product is not specifically listed in 40 CFR 261 as a Resource Conservation and Recovery Act (RCRA) waste. However, spill or leak residuals may meet the criteria of a characteristic hazardous waste under RCRA. Check the characteristic of used, spill or leak material to be disposed of to verify RCRA exempt.

SECTION 7 HANDLING AND STORAGE

- Handling Procedures:** Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return totes to reclamation centers for proper cleaning and reuse. Wash thoroughly after handling.
- Storage Procedures:** This material is suitable for any general chemical storage areas. Isolate from incompatible materials such as strong oxidizing agents. Store in PVC, PE, stainless steel or bitumized tanks. Avoid contact with aluminum, copper, copper alloys and nickel.
- Additional Information:** Containers should not be opened until ready for use. It is recommended that products be retested if stored more than 2 years. Under ideal storage conditions, the shelf-life is almost indefinite.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Applicable Exposure Limits:

- In addition to any exposure limits which may be displayed below, exposures to this product should be controlled below the limits established for "**Manganese, Fume (as Mn)**":
- OSHA PEL = 5 mg/m^3 (ceiling)
 - ACGIH TLV = 0.2 mg/m^3 (TWA)
 - NIOSH REL = 1 mg/m^3 (TWA) / 3 mg/m^3 (STEL)
 - IDLH = 500 mg/m^3

Chemical Name	OSHA – PELs (mg / m ³)		ACGIH – TLVs (mg / m ³)		NIOSH – RELs (mg / m ³)		AIHA – WEELs (mg / m ³)	
	TWA	STEL/ CEIL(c)	TWA	STEL/ CEIL(c)	TWA	STEL/ CEIL(c)	TWA	STEL/ CEIL(c)
Manganese dipotassium EDTA	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Water	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Dipotassium EDTA	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D

Legend:

CEIL: Ceiling Exposure Limit PEL: Permissible Exposure Limit REL: Recommended Exposure Limit
 STEL: Short Term Exposure Limit TLV: Threshold Limit Value TWA: Time-Weighted Average
 N/D: Not Determined WEEL: Workplace Environmental Exposure Level

ACGIH: American Conference of Governmental Industrial Hygienists
 NIOSH: National Institute for Occupational Safety and Health
 OSHA: Occupational Safety and Health Administration

Material Safety Data Sheet**Versa EDTA Mn 6%****SECTION 8****EXPOSURE CONTROLS / PERSONAL PROTECTION (cont.)**

Eye Protection:	Eye protection is strongly recommended. If material is handled such that it could be splashed into the eyes, wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).
Skin Protection:	Wear impervious gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.
Respiratory Protection:	Use of respiratory protection is generally not required. However, if use conditions generate vapor, mist or aerosol and adequate ventilation (e.g., outdoor or well-ventilated area) is not available, use a NIOSH-approved organic vapor respirator with mist and fume filters to reduce potential for inhalation exposure.
Ventilation System:	Special ventilation is usually not required under normal use conditions. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.
Other:	Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9**PHYSICAL AND CHEMICAL PROPERTIES**

Physical State / Appearance / Odor:	clear light pink liquid, odorless
Boiling Point:	107°C (224°F).
Bulk Density:	not applicable
Cloud Point:	not determined
Crystallization Point:	<14 °F (<-10°C) - do not store below this temperature
Melting Point:	not applicable
Evaporation Rate (Butyl Acetate=1):	not determined
Odor Threshold:	not determined
pH:	6 – 7 (1% solution)
Pour Point:	not determined
Solubility in water:	completely miscible
Specific Gravity (H₂O=1):	~1.30 g/ml
Vapor Density (Air=1):	same as water
Vapor Pressure:	same as water
Viscosity:	not determined
Volatiles (% by weight):	not determined
Other – Decomposition temperature:	>392°F / >200°C (solid); >212°F / >100°C (water loss)
Conditions of Flammability:	not flammable or combustible
Flash Point (Method):	not applicable
Upper Flammable Limit (% by volume):	not applicable
Lower Flammable Limit (% by volume):	not applicable
Auto-Ignition Temperature:	not applicable

< : less than > : greater than ~: approximate

SECTION 10**STABILITY AND REACTIVITY**

Stability:	This product is stable at ambient temperatures and atmospheric pressures. It is not self-reactive and is not sensitive to physical impact.
Incompatibilities:	This product is incompatible with strong oxidizers. Aqueous solution in contact with aluminum evolves hydrogen. Avoid contact with aluminum, zinc, copper, copper alloys and nickel. Avoid prolonged storage at elevated temperatures. To avoid crystallization, this product must be stored above -10°C (14°F).

Material Safety Data Sheet
Versa EDTA Mn 6%**SECTION 10 STABILITY AND REACTIVITY (cont.)****Hazardous
Decomposition
Products:**

Under fire conditions the product may support combustion and decomposes to give off carbon oxides fumes (CO, CO₂), nitrogen oxides and water vapor.

**Hazardous
Polymerization:**

Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION**INHALATION****Acute exposure:**

The acute LC₅₀ for this product is not available.

Chronic exposure:

No information available.

SKIN**Acute exposure:**

Dermal toxicity for this product is not available.

Chronic exposure:

No information available.

EYES:

No data available for this product.

INGESTION**Acute exposure:**

The oral LD₅₀ is expected to be greater than 2000 mg/kg (rat).

Chronic Exposure:

No information available.

Carcinogenicity:

The known components of this material are not listed by IARC, NTP, OSHA or ACGIH as known or suspected carcinogens.

Mutagenicity:

No mutagenicity data available.

Reproductive Toxicity:

No data available for this product.

Other:

This product contains the metal manganese. Excessive exposure to manganese by ingestion or inhalation can lead to manganese accumulation in specific portions of the brain and a central nervous syndrome called "manganism", which has clinical signs similar to those of Parkinson's disease.

SECTION 12 ECOLOGICAL INFORMATION**Ecotoxicity:**

The following data is available for a related formulation containing 53% Zinc-diammonium EDTA: Fish (*Bluegill* / *Lepomis macrochirus*): 96-h LC₅₀ = 685 mg/L.

Chemical Fate:

The substance is not expected to enter the atmosphere due to its high water solubility. C.O.D is approximately 250 mg/g.

Biodegradation:

This product is not expected to be readily biodegradable (based on data with related products).

SECTION 13 DISPOSAL CONSIDERATIONS**Waste Disposal:**

The characteristic of corrosivity per RCRA would be exhibited by unused product if it becomes a waste material. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing. Dispose in accordance with all federal, state, and local laws.

NOTE – State and local regulations may be more stringent than federal regulations.

Container Disposal:

Containers should be cleaned of residual product before disposal or return. Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be disposed of or shipped in accordance with all applicable laws and regulations.

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SECTION 13 DISPOSAL CONSIDERATIONS (cont.)

Other: The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can only occur in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state, and local regulations.

SECTION 14 TRANSPORT INFORMATION

Shipping Information: Not regulated for transport.

Required Labels: No transport label required.

Environmentally Hazardous Substances [49 CFR 172.101, Appendix A]: None

SECTION 15 REGULATORY INFORMATION

The components are subjected to the following environmental regulatory lists:

Substance Name	CAA	CERCLA	IARC	US STATE RIGHT-TO-KNOW LISTS	CA PROP 65	SARA
Manganese dipotassium EDTA	N/R	N/R	N/R	CA / IL / MN / NJ / RI (See note 1)	N/R	313 See note 1
Water	N/R	N/R	N/R	N/R	N/R	N/R
Dipotassium EDTA	N/R	N/R	N/R	N/R	N/R	N/R

¹The manganese compound in this product is subject to the various State Right-to-Know lists above as well as the SARA Title III, Section 313 supplier notification/release reporting requirements under the "Manganese Compounds" category.

National Chemical Inventories Status:

Substance Name	US TSCA	Canada		EU EINECS	Australia AICS	New Zealand NZIoC	Japan ENCS	Korea KECI	Philippines PICCS	China IECSC
		DSL	NDSL							
Manganese Dipotassium EDTA	X	X		X		X				X
Dipotassium EDTA	X	X		X	X	X	X	X	X	X
Water	X	X		X	X	X	X	X	X	X

N/R = Non Regulated

X = Listed / Regulated

Legend

AICS Australian Inventory of Chemical Substances
 CA List California – Directors List of Hazardous Substances
 CA Prop 65 California Proposition 65
 CAA Clean Air Act, Section 112
 CERCLA CERCLA Hazardous Substances
 DSL Domestic Substances List - Canada
 EINECS European Inventory of Existing Commercial Chemical Substances
 ENCS Japan Existing and New Chemical Substances

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SECTION 15 REGULATORY INFORMATION (cont.)

FL List	Florida – Substance List
IARC	International Agency for Research on Cancer – Carcinogens – Groups 1, 2A or 2B
IECSC	China – Inventory of Existing Chemical Substances
IL List	Illinois Toxic Substances Disclosure to Employees Act
KECI	Korea Existing Chemicals Inventory
LA List	Louisiana Right-to-Know Reporting List
MA List	Massachusetts – R-T-K Substance List
MN List	Minnesota – Hazardous Substance List
NDSL	Non-Domestic Substances List - Canada
NJ R-T-K	New Jersey – R-T-K Hazard List
NZIoC	New Zealand Inventory of Chemicals
PA List	Pennsylvania Hazardous Substance List
PICCS	Philippines Inventory of Chemicals and Chemical Substances
RI List	Rhode Island – Hazardous Substance List
SARA	SARA Title III, Section 302 / 313
TSCA	Toxic Substances Control Act - USA

CANADA

■ WHMIS (Workplace Hazardous Materials Information System): Not controlled

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* (CPR) and the MSDS contains all the information required by the CPR.

Other Regulatory Information: None

SECTION 16 OTHER INFORMATION

HMIS RATING – Health: 1 Flammability: 0 Physical Hazards: 0 Personal Protection: B
 [0 – Minimal 1 – Slight 2 – Moderate 3 – High 4 – Extreme - Chronic Health Hazard (see Section 11)]

HMIS RATING	
Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	B

External Information: This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used Rosen's, Inc. must rely upon information provided by those materials manufacturers or distributors.

Prepared by: [Regulatory Department]

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. No warranty of merchantability, fitness for any particular purpose, or any other warranty, express or implied, is made concerning the information herein provided. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information not do we offer warranty against patent infringement.

Revisions / Comments: