

Issuing Date no data available

Revision Date 16-Oct-2015

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Number 540
Product Name Metals in Soil, PriorityPollutnT™

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory use only
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier ERA a Waters Company
Supplier Address 16341 Table Mountain Parkway, Golden, CO 80403 USA
Non-Emergency Telephone Number +1-303-431-8454
Supplier Email sdsinfo@waters.com
Emergency telephone number
Company Emergency Phone Number In case of EMERGENCY call CHEMTREC Day or Night
 Within USA and Canada: 800-424-9300
 International Call Collect: +1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger
Hazard Statements Harmful if inhaled Causes skin irritation Causes serious eye irritation May cause allergy or asthma symptoms or breathing difficulties if inhaled May cause an allergic skin reaction May cause cancer May damage fertility or the unborn child	

**Appearance** Brown**Physical state** Solid->Powder(s)**Odor** No information available**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling
 In case of inadequate ventilation wear respiratory protection
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves
 Do not breathe dust/fume/gas/mist/vapors/spray
 Do not eat, drink or smoke when using this product
 Wear eye/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 Specific treatment (see supplemental first aid instructions on this label)

Eyes

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

Skin

IF ON SKIN: Wash with plenty of soap and water
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

121.1 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed
 Very toxic to aquatic life with long lasting effects
 Toxic to aquatic life
 Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Note: only the components contributing to the product's GHS hazard classification are listed in this section.

Chemical Name	CAS-No	Percent
Aluminum Nitrate Nonahydrate	7784-27-2	0.84 - 21.1
Magnesium Nitrate	10377-60-3	0.65 - 13.5
Ferric Nitrate	10421-48-4	2.44 - 5
Beryllium Acetate, Basic	19049-40-2	0.18 - 1.8
Boric Acid	10043-35-3	0.046 - 0.46
Zinc Nitrate Hexahydrate	10196-18-6	0.042 - 0.42
Nickel Nitrate Hexahydrate	13138-45-9	0.02 - 0.24
Vanadium Pentoxide	1314-62-1	0.013 - 0.13

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.

Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. MAY CAUSE ALLERGIC RESPIRATORY REACTION. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away. Call a physician or poison control center immediately.

Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects

Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. Itching. Rashes. Hives. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

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

Specific hazards arising from the chemical

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

Uniform Fire Code

Radioactive Substance
Sensitizer: Solid
Toxic: Solid
COMBUSTIBLE DUST/POWDER

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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. Avoid generation of dust. Do not breathe dust. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information

Environmental precautions

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

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

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe dust. Avoid generation of dust. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

Incompatible Products

Strong acids. Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum Nitrate Nonahydrate	-	(vacated) TWA: 2 mg/m ³ Al	TWA: 2 mg/m ³ Al

7784-27-2		Aluminum	
Ferric Nitrate 10421-48-4	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe
Beryllium Acetate, Basic 19049-40-2	TWA: 0.00005 mg/m ³ Be inhalable fraction	TWA: 2 µg/m ³ Be (vacated) TWA: 2 µg/m ³ Be (vacated) STEL: 25 µg/m ³ 30 min (vacated) Ceiling: 5 µg/m ³ Ceiling: 5 µg/m ³ Be	IDLH: 4 mg/m ³ Be Ceiling: 0.0005 mg/m ³ Be
Boric Acid 10043-35-3	STEL: 6 mg/m ³ inhalable fraction TWA: 2 mg/m ³ inhalable fraction	-	
Nickel Nitrate Hexahydrate 13138-45-9	TWA: 0.1 mg/m ³ Ni inhalable fraction	TWA: 1 mg/m ³ Ni (vacated) TWA: 0.1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni
Vanadium Pentoxide 1314-62-1	TWA: 0.05 mg/m ³ V inhalable fraction	-	IDLH: 35 mg/m ³ V dust and fume Ceiling: 0.05 mg/m ³ V dust and fume 15 min

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

If splashes are likely to occur: Wear safety glasses with side shields (or goggles). None required for consumer use.

Skin and body protection

Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves.

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Do not breathe dust. Take off contaminated clothing and wash before reuse. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid->Powder(s)	Odor	No information available
Appearance	Brown	Odor Threshold	No information available
Color	No information available		
Property	Values	Remarks	Method
pH	no data available	None known	
Melting / 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			
Upper flammability limit	no data available		
Lower flammability limit	no data available		
Vapor pressure	no data available	None known	
Vapor density	no data available	None known	
Specific Gravity	no data available	None known	
Water Solubility	No information available	None known	
Solubility in other solvents	no data available	None known	
Partition coefficient: n-octanol/water	no data available	None known	
Autoignition temperature	no data available	None known	

Decomposition temperature	no data available	None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	no data available	None known
Explosive properties	no data available	
Oxidizing properties	no data available	

Other Information

Softening Point	no data available
Particle Size	no data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

no data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Excessive heat.

Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information****Inhalation**

Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components). May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization in susceptible persons.

Eye contact

Specific test data for the substance or mixture is not available. (based on components). May cause redness, itching, and pain. Causes serious eye irritation.

Skin contact

Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion

Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional affects as listed under "Inhalation".

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Nitrate Nonahydrate 7784-27-2	= 3671 mg/kg (Rat)	-	-
Magnesium Nitrate 10377-60-3	= 5440 mg/kg (Rat)	-	-
Boric Acid 10043-35-3	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Zinc Nitrate Hexahydrate 10196-18-6	= 1190 mg/kg (Rat)	-	-
Vanadium Pentoxide 1314-62-1	= 10 mg/kg (Rat)	= 50 mg/kg (Rabbit)	= 4.29 mg/L (Rat) 4 h

Information on toxicological effects**Symptoms**

Erythema (skin redness). May cause redness and tearing of the eyes. Coughing and/ or wheezing. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

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

May cause sensitization in susceptible persons. May cause sensitization by skin contact. May cause sensitization by inhalation.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Aluminum Nitrate Nonahydrate 7784-27-2		Group 2A		X
Magnesium Nitrate 10377-60-3		Group 2A		X
Ferric Nitrate 10421-48-4		Group 2A		X
Beryllium Acetate, Basic 19049-40-2	A1	Group 1	Known	X
Boric Acid 10043-35-3		Group 2A		X
Zinc Nitrate Hexahydrate 10196-18-6		Group 2A		X
Nickel Nitrate Hexahydrate 13138-45-9		Group 1 Group 2A	Known	X
Vanadium Pentoxide 1314-62-1	A3	Group 2B		X

Reproductive toxicity**STOT - single exposure****STOT - repeated exposure**

Contains a known or suspected reproductive toxin.

No information available.

Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic toxicity

No known effect based on information supplied. Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons.

Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Possible risk of irreversible effects. Avoid repeated exposure.

Target Organ Effects**Aspiration Hazard**

Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Reproductive system.

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

2,381.00 mg/kg

ATEmix (inhalation-gas)

5,556.11 ppm (4 hr)

ATEmix (inhalation-dust/mist)

2.78 mg/L

ATEmix (inhalation-vapor)

27.83 ATEmix

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Ferric Nitrate 10421-48-4		96h LC50: = 20 mg/L (Morone saxatilis)		
Boric Acid 10043-35-3		72h LC50: = 1020 mg/L (Carassius auratus)		48h EC50: 115 - 153 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

Chemical Name	Log Pow
Boric Acid 10043-35-3	-0.757

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number

D004 D006 D009 D010 U151 U217 P120

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Vanadium Pentoxide 1314-62-1	P120			

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Vanadium Pentoxide 1314-62-1		P120		

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Magnesium Nitrate 10377-60-3	Ignitable Reactive
Boric Acid 10043-35-3	Toxic
Zinc Nitrate Hexahydrate 10196-18-6	Toxic
Nickel Nitrate Hexahydrate 13138-45-9	Toxic Ignitable Reactive

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

Not regulated

Hazard Class

NON REGULATED

N/A

TDG

Not regulated

MEX

Not regulated

ICAO	Not regulated
IATA	Not regulated
Proper Shipping Name	NON REGULATED
IMDG	Not regulated
Marine Pollutant	Product is a marine pollutant according to the criteria set by IMDG/IMO
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

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

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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Percent	SARA 313 - Threshold Values %
Aluminum Nitrate Nonahydrate - 7784-27-2	7784-27-2	0.84 - 21.1	1.0
Magnesium Nitrate - 10377-60-3	10377-60-3	0.65 - 13.5	1.0
Ferric Nitrate - 10421-48-4	10421-48-4	2.44 - 5	1.0
Beryllium Acetate, Basic - 19049-40-2	19049-40-2	0.18 - 1.8	0.1
Zinc Nitrate Hexahydrate - 10196-18-6	10196-18-6	0.042 - 0.42	1.0
Nickel Nitrate Hexahydrate - 13138-45-9	13138-45-9	0.02 - 0.24	0.1
Vanadium Pentoxide - 1314-62-1	1314-62-1	0.013 - 0.13	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ferric Nitrate 10421-48-4	1000 lb			X
Beryllium Acetate, Basic 19049-40-2		X		
Zinc Nitrate Hexahydrate 10196-18-6		X		
Nickel Nitrate Hexahydrate 13138-45-9		X		
Vanadium Pentoxide 1314-62-1	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ferric Nitrate 10421-48-4	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Vanadium Pentoxide 1314-62-1	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**International Regulations**

Component	Carcinogen Status	Exposure Limits
Aluminum Nitrate Nonahydrate 7784-27-2 (0.84 - 21.1)		Mexico: TWA 2 mg/m ³
Ferric Nitrate 10421-48-4 (2.44 - 5)		Mexico: TWA 1 mg/m ³ Mexico: STEL 2 mg/m ³
Beryllium Acetate, Basic 19049-40-2 (0.18 - 1.8)	A2	Mexico: TWA 0.002 mg/m ³
Nickel Nitrate Hexahydrate 13138-45-9 (0.02 - 0.24)		Mexico: TWA 0.1 mg/m ³ Mexico: STEL 0.3 mg/m ³
Vanadium Pentoxide 1314-62-1 (0.013 - 0.13)		Mexico: TWA 0.5 mg/m ³

Canada**WHMIS Hazard Class**

Not determined

16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 3 *	Flammability 0	Physical Hazard 0	Personal Protection X

Chronic Hazard Star Legend * = Chronic Health Hazard

Prepared By Product Stewardship
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Latham, NY 12110
1-800-572-6501

Revision Date 16-Oct-2015
Revision Note 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



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End of Safety Data Sheet