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SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
222530	BD Difco™ Oxford Medium Base 500G	No data available
222510	BD Difco™ Oxford Medium Base 2Kg	No data available

Recommended restrictions

Recommended use: Laboratory Chemicals
Restrictions on use: None known.

Manufacturer/Importer/Distributor Information

Manufacturer

Company Name: BD, Integrated Diagnostic Solutions
Address: 7 Loveton Circle
Sparks, MD 21152
USA

Telephone: 1 844 823 5433
Fax: not available
Contact Person: Tech Services

Emergency telephone number: CHEMTREC 1 800 424 9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A

Label Elements

Hazard Symbol:

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Signal Word:	Warning
Hazard Statement:	H315: Causes skin irritation. H319: Causes serious eye irritation.
Precautionary Statements	
Prevention:	P264: Wash face, hands and any exposed skin thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection.
Response:	P302+P352: IF ON SKIN: Wash with plenty of soap and water. P332+P313: If skin irritation occurs: Get medical advice/attention. P362: Take off contaminated clothing. P321: Specific treatment (see supplemental first aid instructions on this label). P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention.
Other hazards which do not result in GHS classification:	None.

3. Composition/information on ingredients



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Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
lithium chloride	No data available.	7447-41-8	25.7942%
Ammonium iron(III) citrate	No data available.	1185-57-5	0.8598%
Starch	No data available.	9005-25-8	0.3783%
Sulfurous acid, sodium salt (1:1)	No data available.	7631-90-5	0.086%
Zinc chloride (ZnCl ₂)	No data available.	7646-85-7	0.0034%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

General information:	Causes serious eye irritation. Causes skin irritation.
Inhalation:	Provide fresh air, warmth and rest, preferably in comfortable upright sitting position.
Skin Contact:	Promptly flush contaminated skin with soap or mild detergent and water. Promptly remove clothing if penetrated and flush the skin with water.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Ingestion:	DO NOT induce vomiting. Get medical attention immediately.
Personal Protection for First-aid Responders:	No data available.
Most important symptoms and effects, both acute and delayed	
Symptoms:	No data available.

Hazards: Causes serious eye irritation. Causes skin irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures



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General Fire Hazards:	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Use water to keep fire exposed containers cool and disperse vapors.
Suitable (and unsuitable) extinguishing media	
Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	Avoid water in straight hose stream; will scatter and spread fire.
Special hazards arising from the substance or mixture:	Fire or excessive heat may produce hazardous decomposition products.
Special protective equipment and precautions for firefighters	
Special fire fighting procedures:	No unusual fire or explosion hazards noted.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Contact local authorities in case of spillage to drain/aquatic environment. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area.
Accidental release measures: Methods and material for containment and cleaning up:	No data available. Absorb spillage with suitable absorbent material. Prevent runoff from entering drains, sewers, or streams. See Section 8 of the SDS for Personal Protective Equipment. For waste disposal, see section 13 of the SDS.
Environmental Precautions:	Avoid release to the environment.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	No special requirements under ordinary conditions of use and with adequate ventilation.
Safe handling advice:	When using do not eat, drink or smoke. Read and follow manufacturer's recommendations. Use personal protective equipment as required.



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Contact avoidance measures: No data available.

Storage

Safe storage conditions: Store in a cool, dry place. Keep container tightly closed. Keep from contact with oxidizing materials.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

**Control Parameters
Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
Ammonium iron(III) citrate - as Fe	TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Ammonium iron(III) citrate	ST ESL	10 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	1 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Ammonium iron(III) citrate - as Fe	TWA PEL	1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA	1 mg/m3	US. ACGIH Threshold Limit Values, as amended
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Starch - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Starch - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Starch - Respirable fraction.	TWA	5 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Starch - Total dust.	TWA	15 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Starch - Particulate.	AN ESL	5 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	50 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Starch	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended
Starch - Total	REL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Starch - Respirable.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended



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Starch - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Starch - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Sulfurous acid, sodium salt (1:1)	TWA	5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	5 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Sulfurous acid, sodium salt (1:1) - Particulate.	AN ESL	5 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	50 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Sulfurous acid, sodium salt (1:1)	TWA PEL	5 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA	5 mg/m3	US. ACGIH Threshold Limit Values, as amended
	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Zinc chloride (ZnCl ₂) - Fume.	TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	STEL	2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	STEL	2 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	TWA	1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Zinc chloride (ZnCl ₂) - Particulate.	AN ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Zinc chloride (ZnCl ₂) - Fume.	STEL	2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA PEL	1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	STEL	2 mg/m3	US. ACGIH Threshold Limit Values, as amended
	TWA	1 mg/m3	US. ACGIH Threshold Limit Values, as amended
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	STEL	2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	PEL	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Zinc chloride (ZnCl ₂)	IDLH	50 mg/m3	US. NIOSH. Immediately Dangerous to Life or



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			Health (IDLH) Values, as amended
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Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection: Material: Chemical resistant gloves
Additional Information: Wash hands after contact. Material: Suitable gloves can be recommended by the glove supplier.

Skin and Body Protection: Wear a lab coat or similar protective clothing.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene measures: Observe good industrial hygiene practices.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state: solid
Form: Solid
Color: According to product specification.

Odor: Characteristic

Odor Threshold: No data available.

Melting Point: No data available.

Boiling Point: No data available.

Flammability: No data available.

Upper/lower limit on flammability or explosive limits

Explosive limit - upper: No data available.



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Explosive limit - lower:	No data available.
Flash Point:	Not applicable
Self Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	No data available.
Viscosity	
Dynamic viscosity:	Not determined.
Kinematic viscosity:	Not determined.
Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	Completely Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	No data available.
Relative density:	No data available.
Density:	No data available.
Bulk density:	No data available.
Vapor density (air=1):	No data available.

Particle characteristics	
Particle Size:	No data available.
Particle Size Distribution:	No data available.
Specific surface area:	No data available.
Surface charge/Zeta potential:	No data available.
Shape:	No data available.
Crystallinity:	No data available.
Surface treatment:	No data available.

Other information

Metal Corrosion:	Non-corrosive per US Department of Transportation testing protocol.
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10. Stability and reactivity

Reactivity:	Material is stable under normal conditions.
Chemical Stability:	Material is stable under normal conditions.



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Possibility of hazardous reactions:	Material is stable under normal conditions.
Conditions to avoid:	Avoid exposure to high temperatures or direct sunlight.
Incompatible Materials:	Water reactive material. Metals. Avoid contact with oxidizers or reducing agents. Avoid contact with acids.
Hazardous Decomposition Products:	Contact with acids liberates toxic gas. Stable; however, may decompose if heated.

11. Toxicological information

Information on toxicological effects

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Information on likely routes of exposure

Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix: 2,039.22 mg/kg
Components:	
lithium chloride	LD 50 (Rat): 526 mg/kg LD 50 (Rat): 526 - 757 mg/kg LD 50 (Rat): 526 mg/kg Experimental result, Key study
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	LD 50 (Rat): 3,200 mg/kg Read-across from supporting substance (structural analogue or surrogate), Supporting study LD 50 (Rat): > 2,150 - < 2,610 mg/kg Read-across from supporting substance (structural analogue or surrogate), Key study LD 50 (Rat): > 2,000 mg/kg Read-across from supporting substance (structural analogue or surrogate), Supporting study LD 50 (Rat): 2,746 mg/kg Read-across from supporting substance (structural analogue or surrogate), Key study LD 50 (Rat): 2,610 mg/kg Read-across from supporting substance (structural analogue or surrogate), Key study
Zinc chloride (ZnCl ₂)	LD 50 (Rat): 1,100 mg/kg Experimental result, Key study LD 50 (Mouse): 1,260 mg/kg



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Experimental result, Key study

Dermal

Product:

ATEmix: 7,753.68 mg/kg

Components:

lithium chloride

LD 50 (Rat): > 2,000 mg/kg
Experimental result, Key study

Ammonium iron(III) citrate

No data available.

Starch

No data available.

Sulfurous acid, sodium salt (1:1)

LD 50 (Rat): > 2,000 mg/kg
Read-across from supporting substance (structural analogue or surrogate), Key study LD 50 (Rat): > 2,000 mg/kg
Read-across from supporting substance (structural analogue or surrogate), Key study LD 50 (Rat): > 2,000 mg/kg
Read-across from supporting substance (structural analogue or surrogate), Key study

Zinc chloride (ZnCl₂)

LD 50 (Rabbit): > 2,000 mg/kg
Read-across based on grouping of substances (category approach), Key study

Inhalation

Product:

Not classified for acute toxicity based on available data.

Components:

lithium chloride

LC 50 (Rat, 4 h): > 5.53 mg/l Aerosol; 2 = reliable with restrictions; Aerosol, Experimental result, Supporting study LC 50 (Rat, 4 h): > 5.57 mg/l Aerosol; 1 = reliable without restrictions; Aerosol, Experimental result, Key study

Ammonium iron(III) citrate

No data available.

Starch

No data available.

Sulfurous acid, sodium salt (1:1)

LC 50 (Rat, 4 h): > 22 mg/l Aerosolized dust; 2 = reliable with restrictions; Read-across from supporting substance (structural analogue or surrogate), Key study, Aerosolized dust LC 50 (Rat, 4 h): > 5.5 mg/l Aerosolized dust; 2 = reliable with restrictions; Read-across from supporting substance (structural analogue or surrogate), Key study, Aerosolized dust LC 50 (Rat, 4 h): > 5.5 mg/l Aerosolized dust; 2 = reliable with restrictions; Read-across from supporting substance (structural analogue or surrogate), Key study, Aerosolized dust LC 50 (Rat, 4 h): > 5.5 mg/l Aerosolized dust; 2 = reliable with restrictions; Read-across from supporting substance (structural analogue or surrogate), Key study, Aerosolized dust

Zinc chloride (ZnCl₂)

LC 50 (Rat, 10 min): 2,000 mg/m³ Aerosol; 2 = reliable with restrictions; Experimental result, Key study, Aerosol

Repeated dose toxicity

Product:

No data available.

Components:

lithium chloride

NOAEL (Rat(Male), Oral): 13.9 mg/kg Oral Read-across from supporting substance (structural analogue or surrogate), Weight of Evidence study
NOAEL (Rat(Male), Oral): 84.8 mg/kg Oral Read-across from supporting substance (structural analogue or surrogate), Weight of Evidence study

Ammonium iron(III) citrate

No data available.



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Starch	No data available.
Sulfurous acid, sodium salt (1:1)	NOAEL (Pig(Female, Male), Oral, 48 Weeks): 0.35 %(m) Read-across from supporting substance (structural analogue or surrogate), Supporting study Oral NOAEL (Rat, Oral, 1 - 2 yr): 0.05 %(m) Experimental result, Supporting study Oral NOAEL (Rat(Female, Male), Oral, 10 - 730 d): 108 mg/kg Read-across from supporting substance (structural analogue or surrogate), Supporting study Oral NOAEL (Rat(Female, Male), Oral, 21 - 104 Weeks): 108 mg/kg Read-across from supporting substance (structural analogue or surrogate), Key study Oral NOAEL (Rat(Female, Male), Oral, 21 - 104 Weeks): > 955 mg/kg Read-across from supporting substance (structural analogue or surrogate), Key study Oral
Zinc chloride (ZnCl ₂)	NOAEL (Rat(Female, Male), Oral, 13 Weeks): 31.52 mg/kg Read-across based on grouping of substances (category approach), Key study Oral NOAEL (Mouse(Female, Male), Oral, 13 Weeks): 3,000 ppm(m) Read-across based on grouping of substances (category approach), Key study Oral NOAEL (Rat(Female, Male), Oral, 13 Weeks): 3,000 ppm(m) Read-across based on grouping of substances (category approach), Key study Oral

Skin Corrosion/Irritation

Product:	No data available.
Components:	
lithium chloride	No data available.
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.
Zinc chloride (ZnCl ₂)	in vivo (Mouse): Highly irritating in vivo (Guinea pig): Moderately irritating in vivo (Rabbit): Highly irritating

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
lithium chloride	Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS Category 1 in vivo Rabbit, 24 - 72 hrs: OECD GHS
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.



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Zinc chloride (ZnCl₂) No data available.

Respiratory or Skin Sensitization

Product: No data available.

Components:

lithium chloride Skin sensitization:, in vivo (Guinea pig): Non sensitising
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Carcinogenicity

Product: No data available.

Components:

lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:

No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: No data available.

Components:

lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

In vivo

Product: No data available.

Components:

lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.



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Sulfurous acid, sodium salt (1:1) No data available.

Zinc chloride (ZnCl₂) No data available.

Reproductive toxicity

Product: No data available.

Components:

lithium chloride No data available.

Ammonium iron(III) citrate No data available.

Starch No data available.

Sulfurous acid, sodium salt (1:1) No data available.

Zinc chloride (ZnCl₂) No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

lithium chloride No data available.

Ammonium iron(III) citrate No data available.

Starch No data available.

Sulfurous acid, sodium salt (1:1) No data available.

Zinc chloride (ZnCl₂) No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

lithium chloride No data available.

Ammonium iron(III) citrate No data available.

Starch No data available.

Sulfurous acid, sodium salt (1:1) No data available.

Zinc chloride (ZnCl₂) No data available.

Aspiration Hazard

Product: No data available.

Components:

lithium chloride No data available.

Ammonium iron(III) citrate No data available.

Starch No data available.

Sulfurous acid, sodium salt (1:1) No data available.

Zinc chloride (ZnCl₂) No data available.

Information on health hazards

Other hazards

Product: No data available.



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12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Components:

lithium chloride NOAEL (Oncorhynchus mykiss, 96 h): 59.4 mg/l Experimental result, Key study
LC 50 (Oncorhynchus mykiss, 96 h): 158 mg/l Experimental result, Key study

Ammonium iron(III) No data available.

citrate

Starch No data available.

Sulfurous acid, sodium LC 50 (Leuciscus idus, 96 h): 316 mg/l Read-across from supporting
salt (1:1) substance (structural analogue or surrogate), Key study

LC 50 (Oncorhynchus mykiss, 96 h): 177.8 mg/l Read-across from
supporting substance (structural analogue or surrogate), Supporting
study

LC 50 (Oncorhynchus mykiss, 96 h): 147 - 215 mg/l Read-across from
supporting substance (structural analogue or surrogate), Supporting
study

LC 50 (Danio rerio, 96 h): 464 - 1,000 mg/l Read-across from supporting
substance (structural analogue or surrogate), Supporting study

NOAEL (Danio rerio, 96 h): 215 mg/l Read-across from supporting
substance (structural analogue or surrogate), Supporting study

Zinc chloride (ZnCl₂) LC 50 (Thymallus arcticus, 96 h): 2,920 µg/l Experimental result, Key
study

LC 50 (Thymallus arcticus, 96 h): 166 µg/l Experimental result, Key
study

LC 50 (Thymallus arcticus, 96 h): 168 µg/l Experimental result, Key
study

LC 50 (Oncorhynchus kisutch, 96 h): 1,810 µg/l Experimental result, Key
study

LC 50 (Oncorhynchus kisutch, 96 h): 1,650 µg/l Experimental result, Key
study

Aquatic Invertebrates

Product: No data available.

Components:

lithium chloride EC 50 (Daphnia magna, 48 h): 249 mg/l Experimental result, Key study
NOAEL (Daphnia magna, 48 h): 63.4 mg/l Experimental result, Key
study

Ammonium iron(III) No data available.

citrate

Starch No data available.

Sulfurous acid, sodium ED 0 (Daphnia magna, 48 h): 62.5 mg/l Read-across from supporting
salt (1:1) substance (structural analogue or surrogate), Key study

EC 50 (Daphnia magna, 48 h): 89 mg/l Read-across from supporting



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Zinc chloride (ZnCl₂) substance (structural analogue or surrogate), Key study
EC 100 (Daphnia magna, 48 h): 125 mg/l Read-across from supporting substance (structural analogue or surrogate), Key study
LC 50 (Ceriodaphnia dubia, 48 h): 123 µg/l Read-across based on grouping of substances (category approach), Not specified
EC 50 (Ceriodaphnia dubia, 48 h): 360 µg/l Read-across based on grouping of substances (category approach), Key study
EC 50 (Tetrahymena thermophila, 24 h): 7.1 mg/l Read-across based on grouping of substances (category approach), Key study
EC 50 (Daphnia pulex, 48 h): 765 µg/l Read-across based on grouping of substances (category approach), Supporting study
EC 50 (Daphnia pulex, 48 h): 615 µg/l Read-across based on grouping of substances (category approach), Supporting study

Toxicity to Aquatic Plants

Product: No data available.
Components:
lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Toxicity to microorganisms

Product: No data available.
Components:
lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.
Components:
lithium chloride NOAEL (Pimephales promelas, 26 d): 1.2 mg/l (flow-through)
Experimental result, Supporting study
NOAEL (Danio rerio, 34 d): 18 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
LC 50 (Pimephales promelas, 26 d): 8.7 mg/l (flow-through)
Experimental result, Supporting study
EC 50 (Pimephales promelas, 26 d): 6.4 mg/l (flow-through)
Experimental result, Supporting study
NOAEL (Pimephales promelas, 26 d): 0.2 mg/l (flow-through)
Experimental result, Supporting study
Ammonium iron(III) citrate No data available.



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Starch	No data available.
Sulfurous acid, sodium salt (1:1)	NOAEL (Danio rerio, 34 d): \geq 316 mg/l (flow-through) Read-across from supporting substance (structural analogue or surrogate), Key study
Zinc chloride (ZnCl ₂)	NOAEL (Lates calcarifer, 7 d): 5,099 μ g/l (semi-static) Read-across based on grouping of substances (category approach), Not specified NOAEL (Cottus bairdii, 30 d): 16 μ g/l (flow-through) Read-across based on grouping of substances (category approach), Not specified NOAEL (Clupea pallasii, 10 d): 3,300 μ g/l (semi-static) Experimental result, Not specified NOAEL (Oncorhynchus mykiss, 30 d): 79 μ g/l (flow-through) Experimental result, Key study NOAEL (Oncorhynchus mykiss, 30 d): 157 μ g/l (flow-through) Experimental result, Key study

Aquatic Invertebrates

Product:

Components:

lithium chloride

No data available.

LOAEL (Daphnia magna, 21 d): 2.53 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
EC 50 (Daphnia magna, 21 d): $>$ 10.4 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
NOAEL (Daphnia magna, 21 d): 10.4 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
EC 50 (Daphnia magna, 21 d): $>$ 1.7 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
NOAEL (Daphnia magna, 21 d): 1.7 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
No data available.

Ammonium iron(III) citrate

Starch

Sulfurous acid, sodium salt (1:1)

Zinc chloride (ZnCl₂)

No data available.

LC 0 (Daphnia magna, 21 d): $>$ 10 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
NOAEL (Daphnia magna, 21 d): $>$ 10 mg/l (semi-static) Read-across from supporting substance (structural analogue or surrogate), Key study
NOAEL (Daphnia magna, 3 Weeks): 156 μ g/l (semi-static) Experimental result, Key study
NOAEL (Metapenaeus dobsoni, 96 h): 145 μ g/l (semi-static) Read-across based on grouping of substances (category approach), Not specified
NOAEL (Mya arenaria, 7 d): 10,000 μ g/l (Static) Experimental result, Key study
NOAEL (Daphnia magna, 50 d): 31 μ g/l (semi-static) Read-across based on grouping of substances (category approach), Key study
IC 25 (Sphaerechinus granularis, 38 h): 30 μ g/l (Static) Read-across based on grouping of substances (category approach), Key study

Toxicity to Aquatic Plants

Product:

Components:

lithium chloride

Ammonium iron(III) citrate

No data available.

No data available.

No data available.



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Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.
Zinc chloride (ZnCl ₂)	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
lithium chloride	No data available.
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.
Zinc chloride (ZnCl ₂)	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
lithium chloride	No data available.
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.
Zinc chloride (ZnCl ₂)	No data available.

BOD/COD Ratio

Product:	No data available.
Components:	
lithium chloride	No data available.
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.
Zinc chloride (ZnCl ₂)	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
lithium chloride	No data available.
Ammonium iron(III) citrate	No data available.
Starch	No data available.
Sulfurous acid, sodium salt (1:1)	No data available.



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Zinc chloride (ZnCl₂) Palaemon elegans (crustaceae), Bioconcentration Factor (BCF): 123 Aquatic sediment Experimental result, Key study
Echinogammarus pirloti, Bioconcentration Factor (BCF): 5,658 Aquatic sediment Experimental result, Key study
Echinogammarus pirloti, Bioconcentration Factor (BCF): 116 Aquatic sediment Experimental result, Key study
Palaemon elegans (crustaceae), Bioconcentration Factor (BCF): 2,558 Aquatic sediment Experimental result, Key study
Various, Bioconcentration Factor (BCF): 779 Aquatic sediment Read-across based on grouping of substances (category approach), Key study

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: No data available.
Components:
lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Mobility in soil:

Product No data available.
Components:
lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Results of PBT and vPvB assessment:

Product No data available.
Components:
lithium chloride No data available.
Ammonium iron(III) citrate No data available.
Starch No data available.
Sulfurous acid, sodium salt (1:1) No data available.
Zinc chloride (ZnCl₂) No data available.

Other adverse effects:

Other hazards
Product: None known.

13. Disposal considerations



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- General information:** This material and its container must be disposed of as hazardous waste. Dispose of waste and residues in accordance with local authority requirements.
- Disposal methods:** Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Contaminated Packaging:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

14. Transport information

- DOTUN** number or ID number: Not regulated.
UN Proper Shipping Name: Not regulated.
Transport Hazard Class(es)
Class: Not regulated.
Label(s): Not regulated.
Packing Group: Not regulated.
Marine Pollutant: Not regulated.
Limited quantity: Not regulated.
Excepted quantity: Not regulated.
- Special precautions for user: Not regulated.

IMDG

- UN number or ID number: Not regulated.
UN Proper Shipping Name: Not regulated.
Transport Hazard Class(es)
Class: Not regulated.
Subsidiary risk: Not regulated.
EmS No.: Not regulated.
Packing Group: Not regulated.
Environmental Hazards
Marine Pollutant: Not regulated.
- Special precautions for user: Not regulated.



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IATA

UN number or ID number:	Not regulated.
Proper Shipping Name:	Not regulated.
Transport Hazard Class(es):	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine pollutant:	Not regulated.
Special precautions for user:	Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity

Ammonium iron(III) citrate
Sulfurous acid, sodium salt (1:1)
Zinc chloride (ZnCl₂)

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Skin Corrosion or Irritation, Serious eye damage or eye irritation

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

None present or none present in regulated quantities.



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Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity
Ammonium iron(III) citrate
Sulfurous acid, sodium salt (1:1)
Zinc chloride (ZnCl₂)

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act
Chemical Identity
Ammonium iron(III) citrate
Sulfurous acid, sodium salt (1:1)

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

16. Other information, including date of preparation or last revision
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Version #: 2.2



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Further Information:	No data available.
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