

NeXtal AmSO4 Suite

Version 2.0

Revision Date 0/1/2020

Print Date /1/2020

SECTION 1. IDENTIFICATION

Product name : NeXtal AmSO4 Suite

Manufacturer or supplier's detailsCompany : NeXtal
6201 Trust Dr
Holland, OH 43528
USA

Telephone : 419-740-6600

E-mail address : www.calibrescientific.comEmergency telephone : CHEMTREC
USA & Canada 1-800-424-9300**Recommended use of the chemical and restrictions on use**

Recommended use : Laboratory chemicals

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Oral)	: Category 4
Acute toxicity (Inhalation)	: Category 3
Skin irritation	: Category 2
Eye irritation	: Category 2A
Germ cell mutagenicity	: Category 1B
Carcinogenicity	: Category 1A
Reproductive toxicity	: Category 1B
Specific target organ systemic toxicity - single exposure	: Category 3 (Respiratory system)

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Specific target organ
systemic toxicity - repeated exposure

Category 1

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P260 Do not breathe dust/fumes/gas/mist/vapors/spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Substance name : AmSO4 Suite

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	>= 10 - < 20
Cadmium sulfate	7790-84-3	>= 10 - < 20
lithium sulfate, monohydrate	10102-25-7	>= 10 - < 20
caesium sulfate	10294-54-9	>= 1 - < 10
Lithium citrate tribasic tetrahydrate	6080-58-6	>= 1 - < 10

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PEG	25322-68-3	>= 1 - < 10
triammonium citrate	3458-72-8	>= 1 - < 10
cadmium chloride	10108-64-2	>= 1 - < 10
caesium chloride	7647-17-8	>= 1 - < 10
potassium iodide	7681-11-0	>= 1 - < 10
2-propanol	67-63-0	>= 1 - < 10
sodium iodide	7681-82-5	>= 1 - < 10
ammonium iodide	12027-06-4	>= 1 - < 10
potassium bromide	7758-02-3	>= 1 - < 10
4-Morpholineethanesulfonic acid	145224-94-8	>= 1 - < 10
lithium chloride	7447-41-8	>= 1 - < 10
citric acid	77-92-9	>= 1 - < 10
potassium nitrate	7757-79-1	>= 1 - < 10
ammonium bromide	12124-97-9	>= 1 - < 10
potassium thiocyanate	333-20-0	>= 1 - < 10
sodium nitrate	7631-99-4	>= 1 - < 10
sodium thiocyanate	540-72-7	>= 1 - < 10
ammonium nitrate	6484-52-2	>= 1 - < 10
lithium nitrate	7790-69-4	>= 1 - < 10
ammonium formate	540-69-2	>= 1 - < 10
potassium fluoride	7789-23-3	>= 1 - < 10
sodium fluoride	7681-49-4	>= 0.1 - < 1
ammonium fluoride	12125-01-8	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : Call a physician or poison control center immediately.
If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
If symptoms persist, call a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eyes.
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- If swallowed : If accidentally swallowed obtain immediate medical attention.
Rinse mouth with water.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
Toxic if inhaled.
May cause respiratory irritation.
May cause genetic defects.

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May cause cancer.
 May damage fertility or the unborn child.
 Causes damage to organs through prolonged or repeated exposure if swallowed.
 Causes damage to organs through prolonged or repeated exposure if inhaled.
 No information available.

Notes to physician : No information available.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
 Exposure to decomposition products may be a hazard to health.
- Hazardous combustion products : Nitrogen oxides (NO_x)
 Sulfur oxides
 Carbon oxides
 Cadmium compounds
 Metal oxides
 potassium oxide
 Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
 Iodine compounds
 Chlorine compounds
 Bromine compounds
 Fluorine compounds
- Specific extinguishing methods : In the event of fire and/or explosion do not breathe fumes.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Ensure adequate ventilation.
 Evacuate personnel to safe areas.
 Avoid breathing dust/fume/gas/mist/vapors/spray.
- Environmental precautions : Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
 Keep in suitable, closed containers for disposal.

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sodium hypochlorite

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m ³	OSHA Z-1
		TWA (Total)	10 mg/m ³	OSHA P0
		TWA (Respirable fraction)	5 mg/m ³	OSHA P0
		TWA	10 mg/m ³	ACGIH
		TWA (Mist - total dust)	10 mg/m ³	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m ³	OSHA P0
Cadmium sulfate	7790-84-3	TWA	0.01 mg/m ³ (cadmium)	ACGIH
		TWA (Respirable fraction)	0.002 mg/m ³ (cadmium)	ACGIH
		PEL	0.005 mg/m ³	OSHA CARC
		TWA	0.01 mg/m ³ (cadmium)	ACGIH
		TWA	0.002 mg/m ³	ACGIH

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		(Respirable fraction)	(cadmium)	
		PEL	0.005 mg/m3 (cadmium)	OSHA CARC
PEG	25322-68-3	TWA	10 mg/m3	US WEEL
		TWA (aerosol)	10 mg/m3	US WEEL
cadmium chloride	10108-64-2	TWA	0.01 mg/m3 (cadmium)	ACGIH
		TWA (Respirable fraction)	0.002 mg/m3 (cadmium)	ACGIH
		PEL	0.005 mg/m3	OSHA CARC
		TWA	0.01 mg/m3 (cadmium)	ACGIH
		TWA (Respirable fraction)	0.002 mg/m3 (cadmium)	ACGIH
		PEL	0.005 mg/m3 (cadmium)	OSHA CARC
potassium iodide	7681-11-0	TWA (Inhalable fraction and vapor)	0.01 mg/m3	ACGIH
		TWA (Inhalable fraction and vapor)	0.01 mg/m3	ACGIH
		TWA (Inhalable fraction and vapor)	0.01 ppm (iodine)	ACGIH
2-propanol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	NIOSH REL
		ST	500 ppm 1,225 mg/m3	NIOSH REL
		TWA	400 ppm 980 mg/m3	OSHA Z-1
		TWA	400 ppm 980 mg/m3	OSHA P0
		STEL	500 ppm 1,225 mg/m3	OSHA P0
sodium iodide	7681-82-5	TWA (Inhalable fraction and vapor)	0.01 mg/m3	ACGIH
		TWA (Inhalable fraction and vapor)	0.01 ppm (iodine)	ACGIH
potassium fluoride	7789-23-3	TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3	ACGIH

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			(Fluorine)	
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0
		TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3 (Fluorine)	ACGIH
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0
sodium fluoride	7681-49-4	TWA	2.5 mg/m3 (Fluorine)	NIOSH REL
		TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3 (Fluorine)	ACGIH
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0
		TWA	2.5 mg/m3 (Fluorine)	NIOSH REL
		TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3 (Fluorine)	ACGIH
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0
ammonium fluoride	12125-01-8	TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3 (Fluorine)	ACGIH
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0
		TWA	2.5 mg/m3 (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m3 (Fluorine)	ACGIH
		TWA	2.5 mg/m3 (Fluorine)	OSHA P0

Hazardous components without workplace control parameters

Ingredients	CAS-No.
lithium sulfate, monohydrate	10102-25-7
caesium sulfate	10294-54-9
Lithium citrate tribasic tetrahydrate	6080-58-6
triammonium citrate	3458-72-8
caesium chloride	7647-17-8
ammonium iodide	12027-06-4
potassium bromide	7758-02-3
4-Morpholineethanesulfonic acid	145224-94-8
lithium chloride	7447-41-8
citric acid	77-92-9
potassium nitrate	7757-79-1
ammonium bromide	12124-97-9

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potassium thiocyanate	333-20-0
sodium nitrate	7631-99-4
sodium thiocyanate	540-72-7
ammonium nitrate	6484-52-2
lithium nitrate	7790-69-4
ammonium formate	540-69-2

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
	7790-84-3	cadmium (cadmium)	In blood	Not critical	5 µg/l	ACGIH BEI
		cadmium (cadmium)	Urine	Not critical	5 µg/g creatinine	ACGIH BEI
	10108-64-2	cadmium (cadmium)	In blood	Not critical	5 µg/l	ACGIH BEI
		cadmium (cadmium)	Urine	Not critical	5 µg/g creatinine	ACGIH BEI
	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI
	7789-23-3	Fluoride (Fluorine)	Urine	Prior to shift (16 hours after exposure ceases)	2 mg/l	ACGIH BEI
		Fluoride (Fluorine)	Urine	End of shift (As soon as possible after exposure ceases)	3 mg/l	ACGIH BEI
	7681-49-4	Fluoride (Fluorine)	Urine	Prior to shift (16 hours after exposure ceases)	2 mg/l	ACGIH BEI
		Fluoride (Fluorine)	Urine	End of shift (As soon as possible after exposure ceases)	3 mg/l	ACGIH BEI
	12125-01-8	Fluoride (Fluorine)	Urine	Prior to shift (16 hours after exposure ceases)	2 mg/l	ACGIH BEI

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		Fluoride (Fluorine)	Urine	End of shift (As soon as possible after exposure ceases)	3 mg/l	ACGIH BEI
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Personal protective equipment

Respiratory protection : In the case of vapor formation use a respirator with an approved filter.

Hand protection
Material : Protective gloves

Remarks : The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection : Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
Do not wear contact lenses.
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the workplace.
Footwear protecting against chemicals

Hygiene measures : Avoid contact with skin, eyes and clothing.
Keep away from food and drink.
Wash hands before breaks and immediately after handling the product.
Ensure adequate ventilation, especially in confined areas.
Keep working clothes separately.
Avoid contact with the skin and the eyes.
When using do not eat, drink or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : No data available

Odor : No data available

Odor Threshold : No data available

pH : No data available

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Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: No data available
Evaporation rate	: No data available
Burning rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: No data available
Density	: No data available
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. Hazardous decomposition products formed under fire conditions. Keep away from oxidizing agents, and acidic or alkaline products.

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Conditions to avoid	: No data available
Incompatible materials	: No data available
Hazardous decomposition products	: No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if swallowed.

Toxic if inhaled.

Product:

Acute oral toxicity	: No data available	Acute toxicity estimate: 444.04 mg/kg Method: Calculation method
Acute inhalation toxicity	: No data available	Acute toxicity estimate: 3.15 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	: No data available	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Ingredients:**glycerol:**

Acute oral toxicity	: LD50 Oral (Rat): 12,000 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 10,000 mg/kg

Cadmium sulfate:

Acute oral toxicity	: LD50 Oral (Rat, male): 107 mg/kg
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lithium sulfate, monohydrate:

Acute oral toxicity	: LD50 Oral (Rat): 613 mg/kg
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PEG:

Acute inhalation toxicity	: No data available
Acute dermal toxicity	: No data available

cadmium chloride:

Acute oral toxicity	: LD50 Oral (Rat): 88 mg/kg
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caesium chloride:

Acute oral toxicity	: LD50 Oral (Rat): 2,600 mg/kg
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potassium iodide:

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Acute oral toxicity	: LD50 Oral (Mouse): 1,000 mg/kg
Acute inhalation toxicity	: No data available
Acute dermal toxicity	: No data available
2-propanol:	
Acute oral toxicity	: LD50 Oral (Rat): 5,045 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 12,800 mg/kg
sodium iodide:	
Acute oral toxicity	: LD50 Oral (Rat): 4,340 mg/kg
potassium bromide:	
Acute oral toxicity	: LD50 Oral (Rat): 3,070 mg/kg
lithium chloride:	
Acute oral toxicity	: LD50 Oral (Rat): 526 mg/kg
citric acid:	
Acute oral toxicity	: LD50 Oral (Rat): 5,400 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rat): > 2,000 mg/kg
potassium nitrate:	
Acute oral toxicity	: LD50 Oral (Rat): 3,750 mg/kg
ammonium bromide:	
Acute oral toxicity	: LD50 Oral (Rat): > 2,700 mg/kg
potassium thiocyanate:	
Acute oral toxicity	: LD50 Oral (Rat): 854 mg/kg
sodium nitrate:	
Acute oral toxicity	: LD50 Oral (Rat): 1,267 mg/kg
	LD50 Oral (Rabbit): 2,680 mg/kg
sodium thiocyanate:	
Acute oral toxicity	: LD50 Oral (Rat): 764 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: 1.6 mg/l Test atmosphere: dust/mist
ammonium nitrate:	
Acute oral toxicity	: LD50 Oral (Rat): 2,217 mg/kg
ammonium formate:	
Acute oral toxicity	: LD50 Oral (Mouse): 2,250 mg/kg
potassium fluoride:	
Acute oral toxicity	: LD50 Oral (Rat): 148 - 225 mg/kg
sodium fluoride:	
Acute oral toxicity	: LD50 Oral (Rat, female): 148.5 mg/kg

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LD50 Oral (Mouse): 44 mg/kg

LD50 Oral (Rabbit): 200 mg/kg

LD50 Oral (Rat, male): 223 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:Remarks:
May irritate skin.**Ingredients:****glycerol:**Species: Rabbit
Exposure time: 24 h
Result: Mild skin irritation**2-propanol:**Species: Rabbit
Result: Mild skin irritation**sodium thiocyanate:**Species: Rabbit
Result: No skin irritation**Serious eye damage/eye irritation**

Causes serious eye irritation.

Product:Remarks:
May cause irreversible eye damage.**Ingredients:****glycerol:**Species: Rabbit
Result: Mild eye irritation
Exposure time: 24 h**2-propanol:**Species: Rabbit
Result: Eye irritation
Exposure time: 24 h**sodium thiocyanate:**Species: Rabbit
Result: No eye irritation**Respiratory or skin sensitization**Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.**Ingredients:**

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sodium thiocyanate:

Species: Humans

Result: positive

Species: Guinea pig

Result: positive

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

IARC

Group 1: Carcinogenic to humans

Cadmium sulfate 7790-84-3

cadmium chloride 10108-64-2

Group 2A: Probably carcinogenic to humans

potassium nitrate 7757-79-1

sodium nitrate 7631-99-4

ammonium nitrate 6484-52-2

lithium nitrate 7790-69-4

OSHA

OSHA specifically regulated carcinogen

Cadmium sulfate 7790-84-3

cadmium chloride 10108-64-2

NTP

Known to be human carcinogen

Cadmium sulfate 7790-84-3

cadmium chloride 10108-64-2

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

May cause respiratory irritation.

Ingredients:**2-propanol:**

Assessment: May cause drowsiness or dizziness.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure if swallowed.

Causes damage to organs through prolonged or repeated exposure if inhaled.

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Aspiration toxicity

Not classified based on available information.

Further information

No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : No data available

Toxicity to algae : No data available

Toxicity to bacteria : No data available
: LC0 (Leuciscus idus (Golden orfe)): > 250 mg/l**Ingredients:****glycerol:**Toxicity to fish : No data available
Exposure time: 48 h**Cadmium sulfate:**Toxicity to daphnia and other : EC50 (Daphnia pulex (Water flea)): 0.042 mg/l
aquatic invertebrates : Exposure time: 48 h**PEG:**Toxicity to fish : (Leuciscus idus (Golden orfe)): > 500 mg/l
Exposure time: 96 h
Test Type: static test**cadmium chloride:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.003 mg/l
Exposure time: 96 hToxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.016 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: Immobilization**caesium chloride:**Toxicity to daphnia and other : EC50 (Daphnia): 7.4 mg/l
aquatic invertebrates : Exposure time: 48 h**potassium iodide:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2,190 mg/l
Exposure time: 96 h**2-propanol:**Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l
Exposure time: 96 hToxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus
subspicatus)): 2,000 mg/l
Exposure time: 72 h

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sodium iodide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 860 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.17 mg/l
Exposure time: 48 h

potassium bromide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 30 mg/l
Exposure time: 96 h

lithium chloride:

Toxicity to fish : LC50: 17 mg/l
Exposure time: 96 h

citric acid:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 440 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): 1,535 mg/l
Exposure time: 24 h
Test Type: static test

potassium nitrate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 98.9 mg/l
Exposure time: 96 h

potassium thiocyanate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 11 mg/l
Exposure time: 48 h

sodium nitrate:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 6,650 mg/l
Exposure time: 96 h
Test Type: static test

sodium thiocyanate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 233 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 11 mg/l
Exposure time: 48 h

Toxicity to algae : (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l

Toxicity to bacteria : EC10 (Bacteria): 8,000 mg/l
Method: OECD Test Guideline 209

sodium fluoride:

Exposure time: 96 h

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Persistence and degradability

No data available

Bioaccumulative potential**Product:**

Bioaccumulation : No data available

Ingredients:**sodium thiocyanate:**

Partition coefficient: n-octanol/water : Remarks: Not applicable

Mobility in soil

No data available

Other adverse effects**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**IATA-DGR**

UN/ID No. : UN 2810

Proper shipping name : Toxic liquid, organic, n.o.s.

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(CADMIUM SULFATE, CADMIUM CHLORIDE)

Class : 6.1
 Packing group : II
 Labels : Toxic

IMDG-Code

UN number : UN 2810
 Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.
 (CADMIUM SULFATE, CADMIUM CHLORIDE)

Class : 6.1
 Packing group : II
 Labels : 6.1
 EmS Code : F-A, S-A
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

UN/ID/NA number : UN 2810
 Proper shipping name : TOXIC, LIQUIDS, ORGANIC, N.O.S.
 (CADMIUM SULFATE, CADMIUM CHLORIDE)

Class : 6.1
 Packing group : II
 Labels : Class 6 - Toxic Substance (Division 6.1)
 ERG Code : 153
 Marine pollutant : yes(CADMIUM SULFATE, CADMIUM CHLORIDE)

SECTION 15. REGULATORY INFORMATION
EPCRA - Emergency Planning and Community Right-to-Know**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
 Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Cadmium sulfate	7790-84-3
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cadmium chloride	10108-64-2
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potassium nitrate	7757-79-1
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sodium nitrate	7631-99-4
ammonium nitrate	6484-52-2
lithium nitrate	7790-69-4

US State Regulations
California Prop. 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

Cadmium sulfate	7790-84-3
cadmium chloride	10108-64-2

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Lithium citrate tribasic tetrahydrate	6080-58-6
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TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION
Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund

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Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

Revision Date : 03/31/2020

The information provided in this Material 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.