

NeXtal Cryos Suite

Version 2.0

Revision Date 03/31/2020

Print Date 03/31/2020

SECTION 1. IDENTIFICATION

Product name : NeXtal Cryos Suite

Manufacturer or supplier's details

Company : NeXtal
6201 Trust Dr
Holland, OH 43528
USA

Telephone : 419-740-6600

E-mail address : www.calibrescientific.com

Emergency telephone : CHEMTREC
USA & Canada 1-800-424-9300
Outside USA & Canada (703) 527-3887
Chemtrec ID# 696910

Recommended use of the chemical and restrictions on use

Recommended use : Laboratory chemicals

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 2

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Skin corrosion : Category 1C

Serious eye damage : Category 1

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Germ cell mutagenicity : Category 1B

Carcinogenicity : Category 1A

Reproductive toxicity : Category 1B

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Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)

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 :

- H225 Highly flammable liquid and vapor.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H331 Toxic if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- 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.
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P260 Do not breathe dust/fumes/gas/mist/vapors/spray.
- P264 Wash skin thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 Wear respiratory protection.

Response:

- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- P308 + P313 IF exposed or concerned: Get medical advice/

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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 : Semifinished Cryos Suite

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (% w/w)
2-methylpentane-2,4-diol	107-41-5	>= 50 - < 70
glycerol	56-81-5	>= 30 - < 50
hexane-1,6-diol	629-11-8	>= 30 - < 50
Magnesium chloride, hexahydrate	7791-18-6	>= 20 - < 30
1,4-dioxane	123-91-1	>= 20 - < 30
PEG	25322-68-3	>= 20 - < 30
2-methylpropan-2-ol	75-65-0	>= 20 - < 30
ethane-1,2-diol	107-21-1	>= 20 - < 30
2-propanol	67-63-0	>= 20 - < 30
O-(2-Aminopropyl)-O'-(2-methoxyethyl)-polypropylenglykol 500	Not Assigned	>= 10 - < 20
ethanol	64-17-5	>= 10 - < 20
lithium sulfate, monohydrate	10102-25-7	>= 10 - < 20
ammonium formate	540-69-2	>= 10 - < 20
imidazole	288-32-4	>= 1 - < 10
zinc acetate dihydrate	5970-45-6	>= 1 - < 10
Cadmium sulfate	7790-84-3	>= 1 - < 10
calcium chloride dihydrate	10035-04-8	>= 1 - < 10
calcium acetate hydrate	114460-21-8	>= 1 - < 10
Sodium cacodylate trihydrate	6131-99-3	>= 1 - < 10
4-Morpholineethanesulfonic acid	145224-94-8	>= 1 - < 10
cadmium chloride	10108-64-2	>= 1 - < 10
cetrimonium bromide	57-09-0	>= 0.1 - < 1
Zinc sulfate, heptahydrate (1:1:7)	7446-20-0	>= 0.1 - < 1
cobalt(II)chloride	7791-13-1	>= 0.1 - < 1
nickel chloride	7791-20-0	>= 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.

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	Keep respiratory tract clear.
In case of skin contact	: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
In case of eye contact	: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eyes.
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. May cause an allergic skin reaction. Causes serious eye damage. Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Causes severe burns.
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	: Carbon oxides Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Chlorine compounds Magnesium oxides Sulfur oxides Nitrogen oxides (NOx)

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potassium oxide
Metal oxides
Cadmium compounds
Hydrogen chloride gas
Arsenic compounds

Specific extinguishing methods : In the event of fire and/or explosion do not breathe fumes. Use a water spray to cool fully closed containers.

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.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Avoid breathing dust/fumes/gas/mist/vapors/spray.
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
sodium hypochlorite

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. 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.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

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

Materials to avoid : Do not store together with oxidizing and self-igniting products.

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

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-methylpentane-2,4-diol	107-41-5	C	25 ppm	ACGIH
		C	25 ppm 125 mg/m3	NIOSH REL
		C	25 ppm 125 mg/m3	OSHA P0
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (mist, total dust)	15 mg/m3	OSHA Z-1
		TWA (Total)	10 mg/m3	OSHA P0
		TWA (Respirable fraction)	5 mg/m3	OSHA P0
		TWA	10 mg/m3	ACGIH
		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
hexane-1,6-diol	629-11-8	TWA	10 mg/m3	US WEEL
1,4-dioxane	123-91-1	TWA	20 ppm	ACGIH
		C	1 ppm 3.6 mg/m3	NIOSH REL
		TWA	100 ppm 360 mg/m3	OSHA Z-1
		TWA	25 ppm 90 mg/m3	OSHA P0
PEG	25322-68-3	TWA	10 mg/m3	US WEEL
		TWA (aerosol)	10 mg/m3	US WEEL
2-methylpropan-2-ol	75-65-0	TWA	100 ppm	ACGIH
		TWA	100 ppm 300 mg/m3	NIOSH REL
		ST	150 ppm 450 mg/m3	NIOSH REL
		TWA	100 ppm 300 mg/m3	OSHA Z-1
		TWA	100 ppm 300 mg/m3	OSHA P0

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		STEL	150 ppm 450 mg/m3	OSHA P0
ethane-1,2-diol	107-21-1	C	50 ppm 125 mg/m3	OSHA P0
		C	100 mg/m3	ACGIH
		C (Aerosol only)	100 mg/m3	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
ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m3	OSHA P0
		STEL	1,000 ppm	ACGIH
Cadmium sulfate	7790-84-3	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
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
cobalt(II)chloride	7791-13-1	TWA	0.02 mg/m3 (Cobalt)	ACGIH
		TWA	0.02 mg/m3	ACGIH

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			(Cobalt)	
nickel chloride	7791-20-0	TWA	1 mg/m3 (Nickel)	OSHA Z-1
		TWA (Inhalable fraction)	0.1 mg/m3 (Nickel)	ACGIH
		TWA	0.1 mg/m3 (Nickel)	OSHA P0
		TWA	0.015 mg/m3 (Nickel)	NIOSH REL
		TWA	1 mg/m3 (Nickel)	OSHA Z-1
		TWA (Inhalable fraction)	0.1 mg/m3 (Nickel)	ACGIH
		TWA	0.1 mg/m3 (Nickel)	OSHA P0
		TWA	0.015 mg/m3 (Nickel)	NIOSH REL

Hazardous components without workplace control parameters

Ingredients	CAS-No.
Magnesium chloride, hexahydrate	7791-18-6
O-(2-Aminopropyl)-O'-(2-methoxyethyl)-polypropylenglykol 500	Not Assigned
lithium sulfate, monohydrate	10102-25-7
ammonium formate	540-69-2
imidazole	288-32-4
zinc acetate dihydrate	5970-45-6
calcium chloride dihydrate	10035-04-8
calcium acetate hydrate	114460-21-8
Sodium cacodylate trihydrate	6131-99-3
4-Morpholineethanesulfonic acid	145224-94-8
cetrimonium bromide	57-09-0
Zinc sulfate, heptahydrate (1:1:7)	7446-20-0

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI
	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

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		cadmium (cadmium)	Urine	Not critical	5 µg/g creatinine	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.
Acid-resistant protective clothing
Footwear protecting against chemicals
Workers should wear antistatic footwear.

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

Melting point/range : No data available

Boiling point/boiling range : No data available

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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. Vapors may form explosive mixture with air. Keep away from oxidizing agents, and acidic or alkaline products.
Conditions to avoid	: Heat, flames and sparks.

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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: 562.67 mg/kg Method: Calculation method
Acute inhalation toxicity	: No data available
	Acute toxicity estimate: 8.64 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	: No data available
	Acute toxicity estimate: 3,828 mg/kg Method: Calculation method

Ingredients:**2-methylpentane-2,4-diol:**

Acute oral toxicity	: LD50 Oral (Rat): 3,700 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 7,892 mg/kg

glycerol:

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

hexane-1,6-diol:

Acute oral toxicity	: LD50 Oral (Rat): > 3,000 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): > 2,500 mg/kg

Magnesium chloride, hexahydrate:

Acute oral toxicity	: LD50 Oral (Rat): 8,100 mg/kg
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1,4-dioxane:

Acute oral toxicity	: LD50 Oral (Rat): 4,200 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 7,858 mg/kg

PEG:

Acute inhalation toxicity	: No data available
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Acute dermal toxicity	: No data available
2-methylpropan-2-ol:	
Acute oral toxicity	: LD50 Oral (Rat): 2,743 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): > 2,000 mg/kg
ethane-1,2-diol:	
Acute oral toxicity	: LD50 Oral (Rat): 4,700 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 10,626 mg/kg
2-propanol:	
Acute oral toxicity	: LD50 Oral (Rat): 5,045 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 12,800 mg/kg
ethanol:	
Acute oral toxicity	: LD50 Oral (Rat): 10,470 mg/kg
Acute inhalation toxicity	: LC50 (Rat): 20000 ppm Exposure time: 10 h
lithium sulfate, monohydrate:	
Acute oral toxicity	: LD50 Oral (Rat): 613 mg/kg
ammonium formate:	
Acute oral toxicity	: LD50 Oral (Mouse): 2,250 mg/kg
imidazole:	
Acute oral toxicity	: LD50 Oral (Rat): 970 mg/kg
zinc acetate dihydrate:	
Acute oral toxicity	: LD50 Oral (Rat): 794 mg/kg
Cadmium sulfate:	
Acute oral toxicity	: LD50 Oral (Rat, male): 107 mg/kg
calcium acetate hydrate:	
Acute oral toxicity	: LD50 Oral (Rat): 4,280 mg/kg
cadmium chloride:	
Acute oral toxicity	: LD50 Oral (Rat): 88 mg/kg
cetrimonium bromide:	
Acute oral toxicity	: LD50 Oral (Rat): 410 mg/kg
Zinc sulfate, heptahydrate (1:1:7):	
Acute oral toxicity	: LD50 Oral (Rat): 2,150 mg/kg
cobalt(II)chloride:	
Acute oral toxicity	: LD50 Oral (Rat): 766 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rat): > 2,000 mg/kg

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nickel chloride:

Acute oral toxicity : LD50 Oral (Rat): 105 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks:

Extremely corrosive and destructive to tissue.

Causes skin burns.

Ingredients:**glycerol:**

Species: Rabbit

Exposure time: 24 h

Result: Mild skin irritation

2-propanol:

Species: Rabbit

Result: Mild skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

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

ethanol:

Result: Eye irritation

Respiratory or skin sensitization

Skin sensitization: May cause an allergic skin reaction.

Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Product:

Remarks:

Causes sensitization. May cause sensitization by inhalation and skin contact.

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

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IARC	Group B: Possibly carcinogenic to humans	
	1,4-dioxane	123-91-1
	Cobalt (II) chloride	7791-13-1
	Group 1: Carcinogenic to humans	
	Cadmium sulfate	7790-84-3
	cadmium chloride	10108-64-2
	nickel chloride	7791-20-0
	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
	Nickel Chloride	7791-20-0
	Reasonably anticipated to be a human carcinogen	
	1,4-dioxane	123-91-1

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

Ingredients:**2-propanol:**

Assessment: May cause drowsiness or dizziness.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Concentrations substantially above the TLV value may cause narcotic effects.

Solvents may degrease the skin.

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

- Toxicity to fish : No data available
- Toxicity to algae : No data available
- Toxicity to bacteria : No data available
: LC50 (Pimephales promelas (fathead minnow)): 10,700 mg/l

Ingredients:**2-methylpentane-2,4-diol:**

- Toxicity to fish : Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,200 mg/l
Exposure time: 48 h

glycerol:

- Toxicity to fish : LC0 (Leuciscus idus (Golden orfe)): > 250 mg/l
Exposure time: 48 h

hexane-1,6-diol:

- Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 4,640 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 500 mg/l
Exposure time: 48 h
Test Type: Immobilization
- Toxicity to algae : EC50 (Scenedesmus capricornutum (fresh water algae)): 5,940 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
- Toxicity to bacteria : IC50 (Pseudomonas putida): > 10,000 mg/l
Exposure time: 17 h
Test Type: Growth inhibition
- 1,4-dioxane:**
- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 985 mg/l
Exposure time: 96 h
- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l
Exposure time: 72 h

PEG:

- Toxicity to fish : (Leuciscus idus (Golden orfe)): > 500 mg/l
Exposure time: 96 h
Test Type: static test

2-methylpropan-2-ol:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 6,140 mg/l

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Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 933 mg/l
Exposure time: 48 h

ethane-1,2-diol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 18,500 mg/l
Exposure time: 96 h

NOEC (Pimephales promelas (fathead minnow)): 39,140 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 41,000 mg/l
Exposure time: 48 h

2-propanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l
Exposure time: 96 h

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 2,000 mg/l
Exposure time: 72 h

imidazole:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 283.6 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 341.5 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Scenedesmus quadricauda (Green algae)): 133 mg/l
Exposure time: 72 h
Test Type: static test

Toxicity to bacteria : 45 mg/l
Exposure time: 0.5 h

zinc acetate dihydrate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.55 mg/l
Exposure time: 96 h

Cadmium sulfate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 0.042 mg/l
Exposure time: 48 h

Sodium cacodylate trihydrate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 53.5 mg/l
Exposure time: 48 h

cadmium chloride:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.003 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.016 mg/l
Exposure time: 48 h

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Test Type: Immobilization

cetrimonium bromide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 0.3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.03 mg/l
aquatic invertebrates Exposure time: 48 h

Zinc sulfate, heptahydrate (1:1:7):

Toxicity to fish : LC50 (Fish): 1 mg/l
Exposure time: 96 h

cobalt(II)chloride:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 0.33 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.1 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae : EC50 (Chlorella vulgaris (Fresh water algae)): 0.5 mg/l
Exposure time: 96 h

nickel chloride:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.51 mg/l
aquatic invertebrates Exposure time: 48 h

Persistence and degradability

No data available

Bioaccumulative potential**Product:**

Bioaccumulation : No data available

Ingredients:**O-(2-Aminopropyl)-O'-(2-methoxyethyl)-polypropylenglykol 500:**

Partition coefficient: n- : Remarks: No data available
octanol/water

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).

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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 3286
Proper shipping name : Flammable liquid, toxic, corrosive, n.o.s.
(1,4-dioxane, CADMIUM SULFATE, imidazole)
Class : 3
Subsidiary risk : 6.1, 8
Packing group : II
Labels : Flammable Liquids, Toxic, Corrosive

IMDG-Code

UN number : UN 3286
Proper shipping name : FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
(1,4-dioxane, CADMIUM SULFATE, imidazole)
Class : 3
Subsidiary risk : 6.1, 8
Packing group : II
Labels : 3 (6.1, 8)
EmS Code : F-E, S-C
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 3286
Proper shipping name : FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
(1,4-dioxane, CADMIUM SULFATE, imidazole)
Class : 3
Subsidiary risk : 6.1, 8
Packing group : II
Labels : Class 3 - Flammable Liquid, Class 6 - Toxic Substance

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ERG Code : (Division 6.1), Class 8 - Corrosive
 131
 Marine pollutant : yes (ZINC ACETATE, CADMIUM SULFATE)

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 : Fire Hazard
 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:

1,4-dioxane	123-91-1
2-methylpropan-2-ol	75-65-0
ethane-1,2-diol	107-21-1
zinc acetate dihydrate	5970-45-6
Zinc sulfate, heptahydrate (1:1:7)	7446-20-0
Cadmium sulfate	7790-84-3
cadmium chloride	10108-64-2
cobalt(II)chloride	7791-13-1
nickel chloride	7791-20-0

US State Regulations

California Prop. 65

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

1,4-dioxane	123-91-1
ethanol	64-17-5
Cadmium sulfate	7790-84-3
cadmium chloride	10108-64-2
nickel chloride	7791-20-0

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

ethane-1,2-diol	107-21-1
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ethanol

64-17-5

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 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

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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.