

NeXtal JCSG Core II Suite

Version 2.0

Revision Date 04/01/2020

Print Date 04/01/2020

SECTION 1. IDENTIFICATION

Product name : NeXtal JCSG Core II 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

Skin irritation : Category 2

Eye irritation : Category 2A

Respiratory sensitization : Category 1

Skin sensitization : Category 1

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 2

Acute aquatic toxicity : Category 2

Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 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.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Substance name : Semifinished JCSG Core II Suite

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Hazardous ingredients

Chemical Name	CAS-No.	Concentration (% w/w)
2-methylpentane-2,4-diol	107-41-5	>= 50 - < 70
PEG	25322-68-3	>= 50 - < 70
ethane-1,2-diol	107-21-1	>= 30 - < 50
1,4-dioxane	123-91-1	>= 30 - < 50
glycerol	56-81-5	>= 30 - < 50
ethanol	64-17-5	>= 10 - < 20
hexane-1,6-diol	629-11-8	>= 10 - < 20
lithium sulfate, monohydrate	10102-25-7	>= 10 - < 20
2-propanol	67-63-0	>= 10 - < 20
zinc acetate dihydrate	5970-45-6	>= 1 - < 10
lithium chloride	7447-41-8	>= 1 - < 10
Magnesium chloride, hexahydrate	7791-18-6	>= 1 - < 10
calcium acetate hydrate	114460-21-8	>= 1 - < 10
4-Morpholineethanesulfonic acid	145224-94-8	>= 1 - < 10
Sodium cacodylate trihydrate	6131-99-3	>= 1 - < 10
2-(Cyclohexylamino)ethanesulfonic acid	103-47-9	>= 1 - < 10
calcium chloride dihydrate	10035-04-8	>= 1 - < 10
citric acid	77-92-9	>= 1 - < 10
sodium nitrate	7631-99-4	>= 1 - < 10
imidazole	288-32-4	>= 0.1 - < 1
sodium fluoride	7681-49-4	>= 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.
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.
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 : No information available.

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and effects, both acute and delayed

Harmful if swallowed.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

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).
Nitrogen oxides (NOx)
Sulfur oxides
Metal oxides
potassium oxide
Chlorine compounds
Magnesium oxides
Arsenic compounds
Hydrogen chloride gas
- 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.

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- 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.
- 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/m ³	NIOSH REL
		C	25 ppm 125 mg/m ³	OSHA P0
PEG	25322-68-3	TWA	10 mg/m ³	US WEEL
		TWA (aerosol)	10 mg/m ³	US WEEL
ethane-1,2-diol	107-21-1	C	50 ppm	OSHA P0

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			125 mg/m3	
		C	100 mg/m3	ACGIH
		C (Aerosol only)	100 mg/m3	ACGIH
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
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
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
hexane-1,6-diol	629-11-8	TWA	10 mg/m3	US WEEL
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 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

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		TWA	2.5 mg/m ³ (Fluorine)	NIOSH REL
		TWA	2.5 mg/m ³ (Fluorine)	OSHA Z-1
		TWA	2.5 mg/m ³ (Fluorine)	ACGIH
		TWA	2.5 mg/m ³ (Fluorine)	OSHA P0
cobalt(II)chloride	7791-13-1	TWA	0.02 mg/m ³ (Cobalt)	ACGIH
		TWA	0.02 mg/m ³ (Cobalt)	ACGIH
nickel chloride	7791-20-0	TWA	1 mg/m ³ (Nickel)	OSHA Z-1
		TWA (Inhalable fraction)	0.1 mg/m ³ (Nickel)	ACGIH
		TWA	0.1 mg/m ³ (Nickel)	OSHA P0
		TWA	0.015 mg/m ³ (Nickel)	NIOSH REL
		TWA	1 mg/m ³ (Nickel)	OSHA Z-1
		TWA (Inhalable fraction)	0.1 mg/m ³ (Nickel)	ACGIH
		TWA	0.1 mg/m ³ (Nickel)	OSHA P0
		TWA	0.015 mg/m ³ (Nickel)	NIOSH REL

Hazardous components without workplace control parameters

Ingredients	CAS-No.
lithium sulfate, monohydrate	10102-25-7
zinc acetate dihydrate	5970-45-6
lithium chloride	7447-41-8
Magnesium chloride, hexahydrate	7791-18-6
calcium acetate hydrate	114460-21-8
4-Morpholineethanesulfonic acid	145224-94-8
Sodium cacodylate trihydrate	6131-99-3
2- (Cyclohexylamino)ethanesulfo nic acid	103-47-9
calcium chloride dihydrate	10035-04-8
citric acid	77-92-9
sodium nitrate	7631-99-4
imidazole	288-32-4

Biological occupational exposure limits

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

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				shift at end of workweek		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

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 work place.
Footwear protecting against chemicals
Workers should wear antistatic footwear.

Hygiene measures : Keep away from food and drink.
Wash hands before breaks and at the end of workday.
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

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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
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.
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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.
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.

Product:

Acute oral toxicity	: No data available Acute toxicity estimate: 843.41 mg/kg Method: Calculation method
Acute inhalation toxicity	: No data available Acute toxicity estimate: > 40 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:**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

PEG:

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

ethane-1,2-diol:

Acute oral toxicity	: LD50 Oral (Rat): 4,700 mg/kg
Acute dermal toxicity	: LD50 Dermal (Rabbit): 10,626 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

glycerol:

Acute oral toxicity : LD50 Oral (Rat): 12,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): 10,000 mg/kg

ethanol:

Acute oral toxicity : LD50 Oral (Rat): 10,470 mg/kg

Acute inhalation toxicity : LC50 (Rat): 20000 ppm
Exposure time: 10 h**hexane-1,6-diol:**

Acute oral toxicity : LD50 Oral (Rat): > 3,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,500 mg/kg

lithium sulfate, monohydrate:

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

2-propanol:

Acute oral toxicity : LD50 Oral (Rat): 5,045 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): 12,800 mg/kg

zinc acetate dihydrate:

Acute oral toxicity : LD50 Oral (Rat): 794 mg/kg

lithium chloride:

Acute oral toxicity : LD50 Oral (Rat): 526 mg/kg

Magnesium chloride, hexahydrate:

Acute oral toxicity : LD50 Oral (Rat): 8,100 mg/kg

calcium acetate hydrate:

Acute oral toxicity : LD50 Oral (Rat): 4,280 mg/kg

citric acid:

Acute oral toxicity : LD50 Oral (Rat): 5,400 mg/kg

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg

sodium nitrate:

Acute oral toxicity : LD50 Oral (Rat): 1,267 mg/kg

LD50 Oral (Rabbit): 2,680 mg/kg

imidazole:

Acute oral toxicity : LD50 Oral (Rat): 970 mg/kg

sodium fluoride:

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Acute oral toxicity : LD50 Oral (Rat, female): 148.5 mg/kg
LD50 Oral (Mouse): 44 mg/kg
LD50 Oral (Rabbit): 200 mg/kg
LD50 Oral (Rat, male): 223 mg/kg

cobalt(II)chloride:

Acute oral toxicity : LD50 Oral (Rat): 766 mg/kg

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg

nickel chloride:

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

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks:

May cause skin irritation and/or dermatitis.

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 irritation.

Product:

Remarks:

May cause irreversible eye damage.

Ingredients:**glycerol:**

Species: Rabbit

Result: Mild eye irritation

Exposure time: 24 h

ethanol:

Result: Eye irritation

2-propanol:

Species: Rabbit

Result: Eye irritation

Exposure time: 24 h

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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

Not classified based on available information.

Carcinogenicity

May cause cancer.

IARC

Group 2A: Probably carcinogenic to humans

Sodium nitrate

7631-99-4

Group 2B: Possibly carcinogenic to humans

1,4-dioxane

123-91-1

cobalt(II)chloride

7791-13-1

Group 1: Carcinogenic to humans

nickel chloride

7791-20-0

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

Known to be human carcinogen

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.

Ingredients:**2-propanol:**

Assessment: May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified based on available information.

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Further information**Product:**

Remarks:

Solvents may degrease the skin.

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 hToxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 3,200 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**ethane-1,2-diol:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 18,500 mg/l
Exposure time: 96 hNOEC (Pimephales promelas (fathead minnow)): 39,140 mg/l
Exposure time: 96 hToxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 41,000 mg/l
aquatic invertebrates Exposure time: 48 h**1,4-dioxane:**Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 985 mg/l
Exposure time: 96 hToxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l
Exposure time: 72 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

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Toxicity to daphnia and other aquatic invertebrates	: EC50 (<i>Daphnia magna</i> (Water flea)): > 500 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to algae	: EC50 (<i>Scenedesmus capricornutum</i> (fresh water algae)): 5,940 mg/l Exposure time: 72 h Test Type: Growth inhibition
Toxicity to bacteria	: IC50 (<i>Pseudomonas putida</i>): > 10,000 mg/l Exposure time: 17 h Test Type: Growth inhibition
2-propanol:	
Toxicity to fish	: LC50 (<i>Pimephales promelas</i> (fathead minnow)): 9,640 mg/l Exposure time: 96 h
Toxicity to algae	: EC50 (<i>Desmodesmus subspicatus</i> (<i>Scenedesmus subspicatus</i>)): 2,000 mg/l Exposure time: 72 h
zinc acetate dihydrate:	
Toxicity to fish	: LC50 (<i>Oncorhynchus mykiss</i> (rainbow trout)): 0.55 mg/l Exposure time: 96 h
lithium chloride:	
Toxicity to fish	: LC50: 17 mg/l Exposure time: 96 h
Sodium cacodylate trihydrate:	
Toxicity to daphnia and other aquatic invertebrates	: EC50 (<i>Daphnia magna</i> (Water flea)): 53.5 mg/l Exposure time: 48 h
citric acid:	
Toxicity to fish	: LC50 (<i>Leuciscus idus</i> (Golden orfe)): 440 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	: (<i>Daphnia magna</i> (Water flea)): 1,535 mg/l Exposure time: 24 h Test Type: static test
sodium nitrate:	
Toxicity to fish	: LC50 (<i>Gambusia affinis</i> (Mosquito fish)): 6,650 mg/l Exposure time: 96 h Test Type: static test
imidazole:	
Toxicity to fish	: LC50 (<i>Leuciscus idus</i> (Golden orfe)): 283.6 mg/l Exposure time: 48 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (<i>Daphnia magna</i> (Water flea)): 341.5 mg/l Exposure time: 48 h
Toxicity to algae	: EC50 (<i>Scenedesmus quadricauda</i> (Green algae)): 133 mg/l Exposure time: 72 h

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Test Type: static test

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

sodium fluoride:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 200 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 aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.1 mg/l
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 aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.51 mg/l
Exposure time: 48 h

Persistence and degradability

No data available

Bioaccumulative potential**Product:**

Bioaccumulation : No data available

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.
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

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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 1993
Proper shipping name : Flammable liquid, n.o.s.
(1,4-dioxane, ethanol)
Class : 3
Packing group : II
Labels : Flammable Liquids

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(1,4-dioxane, ethanol)
Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-E
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 1993
Proper shipping name : FLAMMABLE LIQUIDS, N.O.S.
(1,4-dioxane, ethanol)
Class : 3
Packing group : II
Labels : Class 3 - Flammable Liquid
ERG Code : 128
Marine pollutant : yes(ZINC ACETATE, Sodium cacodylate)

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.

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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:
		ethane-1,2-diol 107-21-1
		1,4-dioxane 123-91-1
		zinc acetate dihydrate 5970-45-6
		sodium nitrate 7631-99-4
		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
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
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

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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.