

SAFETY DATA SHEET

Version 8.6
Revision Date 08/18/2021
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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Trace Metals/Cyan - Loam 5
Product Number : CRM022
Brand : Sigma-Aldrich

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin sensitization (Category 1), H317
Carcinogenicity, Inhalation (Category 1B), H350
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H317
H350

May cause an allergic skin reaction.
May cause cancer by inhalation.

H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P272	Contaminated work clothing must not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Component	Classification	Concentration
Silver nitrate		
CAS-No.	7761-88-8	< 0.1 %
EC-No.	231-853-9	
Index-No.	047-001-00-2	
Registration number	01-2119513705-43-XXXX	
nickel(II) nitrate		
CAS-No.	13138-45-9	>= 0.01 - < 0.1 %
EC-No.	236-068-5	

		Concentration limits: >= 1 %: STOT RE 1, H372; 0.1 - < 1 %: STOT RE 2, H373; >= 20 %: Skin Irrit. 2, H315; >= 0.01 %: Skin Sens. 1, H317;	
Cadmium nitrate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)			
CAS-No.	10325-94-7	Acute Tox. 3; Acute Tox. 2; Acute Tox. 4; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301, H330, H312, H340, H350, H360, H372, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1	< 0.1 %
EC-No.	233-710-6		
Index-No.	048-001-00-5		
Lead(II) nitrate			
CAS-No.	10099-74-8	Ox. Sol. 2; Acute Tox. 4; Eye Dam. 1; Skin Sens. 1; Carc. 1B; Repr. 1A; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H332, H318, H317, H350, H360, H372, H400, H410 M-Factor - Aquatic Acute: 10 M-Factor - Aquatic Chronic: 1	< 0.1 %
EC-No.	233-245-9		
Index-No.	082-001-00-6		
Registration number	01-2119492475-28-XXXX		
Selenious acid			
CAS-No.	7783-00-8	Acute Tox. 3; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H301, H331, H373, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1	< 0.1 %
EC-No.	231-974-7		
Index-No.	034-002-00-8		
Mercury(II) nitrate			
CAS-No.	10045-94-0	Ox. Sol. 2; Acute Tox. 2; Acute Tox. 1; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H272, H300, H330, H310, H373, H400, H410 Concentration limits: >= 0.1 %: STOT RE 2, H373; M-Factor - Aquatic Acute: 10 M-Factor - Aquatic Chronic: 10	< 0.1 %
EC-No.	233-152-3		
Index-No.	080-002-00-6		

Cobalt(II) nitrate			
CAS-No.	10141-05-6	Ox. Sol. 2; Acute Tox. 4; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H318, H334, H317, H341, H350, H360, H373, H400, H410 Concentration limits: >= 0.01 %: Carc. 1B, H350i; M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1	>= 0.01 - < 0.1 %
EC-No.	233-402-1		
Index-No.	027-009-00-2		
Arsenic trioxide			
CAS-No.	1327-53-3	Acute Tox. 2; Skin Corr. 1B; Eye Dam. 1; Carc. 1A; Aquatic Chronic 1; H300, H314, H318, H350, H410 M-Factor - Aquatic Acute: 10	< 0.1 %
EC-No.	215-481-4		
Index-No.	033-003-00-0		
Ammonium dichromate			
CAS-No.	7789-09-5	Ox. Sol. 2; Acute Tox. 3; Acute Tox. 2; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H301, H330, H312, H314, H318, H334, H317, H340, H350, H360, H372, H400, H410 Concentration limits: >= 5 %: STOT SE 3, H335; >= 0.2 %: Resp. Sens. 1, H334; >= 0.2 %: Skin Sens. 1, H317; M-Factor - Aquatic Acute: 10 M-Factor - Aquatic Chronic: 10	< 0.1 %
EC-No.	232-143-1		
Index-No.	024-003-00-1		
Registration number	01-2119661563-36- XXXX		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Iron oxides

Calcium oxide

Not combustible.

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at Room Temperature.

Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Silver nitrate	7761-88-8	TWA	0.01 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.01 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.01 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	0.01 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
nickel(II) nitrate	13138-45-9	TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		TWA	0.1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.015 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		
		PEL	0.05 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Cadmium nitrate	10325-94-7	TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Suspected human carcinogen		
		TWA	0.002 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Suspected human carcinogen		
		PEL	0.005 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		Potential Occupational Carcinogen		
		PEL	0.005 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Lead(II) nitrate	10099-74-8	TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Confirmed animal carcinogen with unknown relevance to humans		

		PEL	0.05 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	0.05 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Selenious acid	7783-00-8	TWA	0.2 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.2 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	0.2 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Mercury(II) nitrate	10045-94-0	TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen Danger of cutaneous absorption		
		C	0.1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		C	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		PEL	0.025 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
		C	0.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
Cobalt(II) nitrate	10141-05-6	TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Respiratory sensitization Confirmed animal carcinogen with unknown relevance to humans		

Arsenic trioxide	1327-53-3	TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Confirmed human carcinogen		
		PEL	0.01 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		C	0.002 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		
		PEL	0.01 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Ammonium dichromate	7789-09-5	CEIL	1mg/10m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	0.0002 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Respiratory sensitization Confirmed human carcinogen Danger of cutaneous absorption		
		STEL	0.0005 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Respiratory sensitization Confirmed human carcinogen Danger of cutaneous absorption		
		PEL	0.005 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		TWA	0.0002 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		
		PEL	0.005 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	0.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Cadmium nitrate	10325-94-7	cadmium	5 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Not critical			

		cadmium	5µg/g creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
		Not critical			
Lead(II) nitrate	10099-74-8	Lead	200 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		Not critical			
Cobalt(II) nitrate	10141-05-6	Cobalt	15 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Cobalt		Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
Ammonium dichromate	7789-09-5	Total chromium	25 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Total chromium	10 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		Increase during shift			

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

Handle with impervious gloves.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:KCL 741 Dermatril® L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|-------------------------------|
| a) Appearance | Form: solid |
| b) Odor | No data available |
| c) Odor Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | ()No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | The product is not flammable. |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | No data available |
| l) Vapor density | No data available |
| m) Density | No data available |
| Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Autoignition temperature | Not applicable |
| q) Decomposition temperature | No data available |

- r) Viscosity No data available
- s) Explosive properties Not classified as explosive.
- t) Oxidizing properties none

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

Mixture may cause an allergic skin reaction.

Germ cell mutagenicity

No data available

Carcinogenicity

Possible carcinogen.

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Components

Silver nitrate

Acute toxicity

LD50 Oral - Rat - male and female - 3,804 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 0.075 mg/l

(OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

(OECD Test Guideline 402)

No data available

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Corrosive - 3 - 60 min

(OECD Test Guideline 431)

(Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Causes serious eye damage. Risk of permanent damage due to staining of the cornea.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: Positive results were obtained in some in vitro tests.

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure**Aspiration hazard**

No data available

nickel(II) nitrate**Acute toxicity**

LD50 Oral - Rat - male - 325 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 1.3 - 4.5 mg/l

(OECD Test Guideline 403)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: positive

May cause an allergic skin reaction.

(Maximization Test)

Germ cell mutagenicity

In vitro tests showed mutagenic effects which were not observed with in vivo test.

Carcinogenicity

Human carcinogen.

Reproductive toxicity

Presumed human reproductive toxicant

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure. **Aspiration**

hazard

No data available

Cadmium nitrate

Acute toxicity

Acute toxicity estimate Oral - Not tested on animals - 100.1 mg/kg

(Expert judgment)

Acute toxicity estimate Inhalation - Not tested on animals - 0.051 mg/l

(Expert judgment)

Acute toxicity estimate Dermal - Not tested on animals - 1,100.1 mg/kg

(Expert judgment)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

May cause genetic defects.

In vivo tests showed mutagenic effects

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Cadmium chloride

Test Type: comet assay

Test system: mammalian cells

Result: positive

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: cadmium sulphate

Test Type: In vitro mammalian cell gene mutation test

Test system: mammalian cells

Result: positive

Remarks: (in analogy to similar products)

Carcinogenicity

Carcinogenicity - May cause cancer.

Presumed to have carcinogenic potential for humans

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Chronic exposure to cadmium may cause lung and prostate cancer. Presumed to have carcinogenic potential for humans

NTP: The reference note has been added by TD based on the background information of the NTP.

OSHA: 1910.1027

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Oral - Causes damage to organs through prolonged or repeated exposure. - Kidney, Bone

Aspiration hazard

No data available

Lead(II) nitrate**Acute toxicity**

Oral: No data available

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Lead(II) oxide red
No data available

Skin corrosion/irritation

Skin - In vitro study

Result: non-corrosive

(OECD Test Guideline 431)

Skin - In vitro study

Result: No skin irritation - 42 min

(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - Bovine cornea

Result: Causes serious eye damage. - 4 h

(OECD Test Guideline 437)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: positive

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Remarks: (in analogy to similar products)
(ECHA)

Species: Rat - female - Red blood cells (erythrocytes)

Result: positive

Remarks: (in analogy to similar products)
(ECHA)

The value is given in analogy to the following substances: lead(II) acetate

Species: Monkey - male - lymphocyte

Result: positive

Remarks: (in analogy to similar products)
(ECHA)

Species: Mouse - male - Liver cells

Result: negative

Remarks: (in analogy to similar products)
(ECHA)

Carcinogenicity

NTP: The reference note has been added by TD based on the background information of the NTP.

Reproductive toxicity

May damage the unborn child. Positive evidence from human epidemiological studies.

May damage fertility. Positive evidence from human epidemiological studies.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure. - Blood, Central nervous system, Immune system, Kidney

Aspiration hazard

No data available

Selenious acid

Acute toxicity

LD50 Oral - 100 mg/kg

LC50 Inhalation - 4 h - 0.51 mg/l

Dermal: No data available

LD50 Intravenous - Mouse - 11 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Species: Mouse

Remarks: Micronucleus test

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. Remarks: No data available

Aspiration hazard

No data available

Mercury(II) nitrate

Acute toxicity

Acute toxicity estimate Oral - 5.1 mg/kg

(Expert judgment)

Acute toxicity estimate Inhalation - 0.051 mg/l

(Expert judgment)

Acute toxicity estimate Dermal - 5.1 mg/kg

(Expert judgment)

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. - Kidney

Aspiration hazard

No data available

Cobalt(II) nitrate

Acute toxicity

LD50 Oral - Rat - male and female - 978 mg/kg

(OECD Test Guideline 401)

Remarks: (in analogy to similar compounds)

The value is given in analogy to the following substances: Cobaltous nitrate, hexahydrate

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Respiratory or skin sensitization

May cause allergic skin reaction. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer by inhalation.

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure.

- Lungs

Aspiration hazard

No data available

Arsenic trioxide

Acute toxicity

LD50 Oral - Rat - 14.6 mg/kg

Remarks: (IUCLID)

(Lit.)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli

Result: negative

Remarks: The value is given in analogy to the following substances: sodium arsenite

Carcinogenicity

May cause cancer. Positive evidence from human epidemiological studies.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Ammonium dichromate**Acute toxicity**

LD50 Oral - Rat - 53 mg/kg

LC50 Inhalation - Rat - 4 h - 0.2 mg/l

LD50 Dermal - Rabbit - 1,860 mg/kg

Skin corrosion/irritation

Causes skin burns. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Severe eye irritation

(Draize Test)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization

May cause allergic respiratory and skin reactions Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Germ cell mutagenicity

May alter genetic material. In vivo tests showed mutagenic effects

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Possible human carcinogen

Reproductive toxicity

May cause congenital malformation in the fetus. Presumed human reproductive toxicant

May cause reproductive disorders.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure. Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1 Toxicity

Mixture

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

Components

Silver nitrate

Toxicity to fish semi-static test LC50 - Pimephales promelas (fathead minnow) - 0.0012 mg/l - 96 h (US-EPA)

Toxicity to daphnia and other aquatic invertebrates semi-static test LC50 - Daphnia magna (Water flea) - 0.00022 mg/l - 48 h
Remarks: (ECHA)

nickel(II) nitrate

Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 15.3 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Ceriodaphnia dubia (water flea) - 0.0744 mg/l - 48 h
Remarks: (ECHA)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 0.0815 - 0.148 mg/l - 72 h (OECD Test Guideline 201)

Toxicity to bacteria EC50 - Sludge Treatment - 33 mg/l - 30 min (ISO 8192)

Cadmium nitrate

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 0.0132 mg/l - 96 h
Remarks: (ECOTOX Database) (referred to the cation)

flow-through test LC50 - Ictalurus punctatus - 4.48 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia
and other aquatic
invertebrates

LC50 - Daphnia magna (Water flea) - 0.023 mg/l - 48 h
Remarks: (referred to the cation)
(ECOTOX Database)

Lead(II) nitrate

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.1
mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia
and other aquatic
invertebrates

EC50 - Daphnia magna (Water flea) - 1.8 mg/l - 48 h
Remarks: (ECOTOX Database)

Toxicity to algae

EC50 - algae - 0.024 - 0.029 mg/l - 28 h
Remarks: (Lit.)

Selenious acid

No data available

Mercury(II) nitrate

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) - 0.172 mg/l -
96.0 h

Cobalt(II) nitrate

Toxicity to fish

semi-static test LC50 - Pimephales promelas (fathead minnow)
- 1.866 mg/l - 96 h
(US-EPA)

Toxicity to daphnia
and other aquatic
invertebrates

static test LC50 - Ceriodaphnia dubia (water flea) - 0.39 mg/l -
48 h
(US-EPA)

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata - 0.095 mg/l
- 72 h
(OECD Test Guideline 201)

Toxicity to bacteria

static test EC50 - activated sludge - 120 mg/l - 30 min
(OECD Test Guideline 209)

Arsenic trioxide

Toxicity to fish

flow-through test - Pimephales promelas (fathead minnow) -
12.6 mg/l - 96 h
(US-EPA)
Remarks: The value is given in analogy to the following
substances: sodium arsenite

Ammonium dichromate

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Cadmium nitrate, Lead(II) nitrate)
Marine pollutant : yes

IATA

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cadmium nitrate, Lead(II) nitrate)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

SECTION 15: Regulatory information

SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

No SARA Hazards

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

SECTION 16: Other information

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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