

## REYNOLDS LEAD CITRATE 3%

Version : 1.0

Version date : 2016-09-27

Reference : Reynolds lead citrate 3%

Impression date : 27/09/16

### 1. PRODUCT IDENTIFICATION AND SUPPLIER INFORMATION

**Product name:** Lead citrate at 3%

**Commercial name:** Reynolds lead citrate 3%

**Society :** Delta Microscopies

**Address :** 22 bis route de Saint Ybars,  
31190 Mauressac France

**Phone :** +33 (0)5 61 73 60 14

**Adresse e-mail :** [info@deltamicroscopies.com](mailto:info@deltamicroscopies.com)

**Emergency:** For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11

Emergency Number US: 001-201-796-7100 / Europe:

+32 14 57 52 99 CHEMTREC Tel. No.US: 001-800-

424-9300 / Europe: 001-703-527-3887

**Common use:** Contrast agent for electron microscopy

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture:



Acute Tox.4  
Eye Dam. 2

**GHS07**

**H302** Harmful if swallowed  
**H332** Harmful if inhaled



Repr.1,1A  
STOT RE 2

**GHS08**

**H360Df** Signs and Symptoms of repeated exposure-sensitive organs  
**H373** May cause damage to organs through prolonged or repeated exposure



Aquatic Acute 1  
Aquatic Chronic 1

**GHS08**

**H400** Very toxic to aquatic life  
**H410** Very toxic to aquatic life with long-lasting effects

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For the full text of the H-phrases mentioned in this Chapter, see Section 16

### 2.2 Content of the label:

Labeling in agreement with the regulation (EC) N° 1272/2008 [EU-GHS/CLP].



Signal word : Danger Hazard statements:

H302 Harmful if swallowed. H332 Harmful if inhaled.

H360Df May harm the fetus. Suspected of damaging fertility.

H373 May cause damage to organs after repeated exposure or prolonged exposure.

H410 Very toxic to aquatic organisms, causes long-lasting effects safety recommendations: P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P308 + P313 IF exposed or concerned: Get medical advice.

P501 Dispose of contents / container to an approved waste disposal facility. Dangers

For professional users

### 2.3 Other danger : none

## 3. COMPOSITION / INFORMATION ABOUT COMPONENTS

### 3.1 Substances

Lead citrate in aqueous solution at 3% ; (1,2,3-Propanetricarboxylic acid, 2-hydroxy-, lead salt)

Formula:  $\text{PbC}_6\text{H}_5\text{O}_7$

Molecular weight: 96,29

Composants	No.-CAS	No.-CE	% masse
Nitrate de plomb	10099-74-8	233-245-9	<3%
Trisodium citrate dihydrate	6132-04-3	200-675-3	<4%
Soude	1310-73-2	215-185-5	<1%
eau	7732-18-5	231-791-2	>92%

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### 4. FIRST AID

#### 4.1 Description of first aid

**General advice:** Consult a physician. Show this safety data sheet to physician.

**Inhalation:** Take the person out of the contaminated area. If not breathing, give artificial respiration. See a doctor.

**Skin contact:** Wash off with soap and plenty of water. If irritation develops, contact a physician.

**Eye contact:** Remove contact lenses. Flush eyes with plenty of water for at least 15 minutes. Consult a physician if irritation persists.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor.

**4.2 Most important symptoms and effects, both acute and delayed:** anemia, digestive disorders. It is reported that the seals salts cross the placenta and cause the death of the embryo and fetus. These salts also have teratogenic effects in some animal species. There were no reported teratogenic effects following exposure to organometallic lead compounds. But the adverse effects of lead on human reproduction, development of the embryo and fetus and postnatal development (mental, for example) have been reported. Excessive exposure may affect the blood and the nervous and digestive system. Anemia which develops from an inhibition of the synthesis of hemoglobin. In the absence of treatment, there may be risk of neuromuscular dysfunction, along with possible paralysis and encephalopathy. Other symptoms of overexposure include: pain in muscles and joints, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line gingival, insomnia, and metallic taste in the mouth. A high level of product in the body causes increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death. Kidney injury may occur

**4.3** Indication of immediate medical attention and special treatment needed: No data available

### 5. FIREFIGHTING MEASURES

**5.1 Extinguishing media:** The product is not flammable nor explosive. Use appropriate extinguishing measures to local circumstances and the surrounding environment.

**5.2 Special hazards arising from the substance or mixture:** Carbon oxides, lead oxides

**5.3 Advice for firefighters:** Wear self-contained breathing apparatus to fight against the fire, if necessary..

**5.4 Additional Information:** Data not available

### 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to the sister locations. Avoid inhalation of dust.

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**6.2 Environmental protection:** Prevent material product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections:** For disposal, see section 13.

### 7. MANIPULATION AND STORING

**7.1 Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide adequate ventilation at places where dust is formed. For precautions, see section 2.2

**7.2 Conditions for safe storage:** Keep container tightly closed in a dry and well ventilated. **Do not store in the refrigerator, this may induce a leak and increase the solubility of gases (air or CO2).**

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

#### 8.1 Control parameters

Components with workplace control parameters :

Component	N°-CAS	Value	Control Parameter	Base
Trilead dicitrate trihydrate	6107-83-1	TWA	0,15mg/m3	Europe. Chemical Agent Directive- Annex 1: List of binding limit values for occupational exposure
	remarques	contraignantes		
		VME	0,1 mg/m3	Occupational exposure limits to chemicals in France (INRS)
		Substances that are known to be carcinogenic to humans Substance should be regarded as carcinogenic to humans concern for humans due to carcinogenic effects possible. Substance known to be toxic to reproduction in humans. Substances to be treated as toxic for reproduction to humans concern for humans due to possible toxic effects for reproduction. Values stringent regulatory limits.		
		VME	0,1 mg/m3	Occupational exposure limits to chemicals in France (INRS)
		Some or all of these compounds are classified C1, C2 or C3 Some or all of these compounds are classified R1, R2 or R3 Regulatory limit values contraignates		

#### 8.2 Exposure controls

**Engineering controls:** Handle in accordance with good industrial hygiene practices and safety procedures. Wash hands before breaks and at the end of the working day.

**General industrial hygiene practice:** Personal protective equipment

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**Eye / Face Protection:** Safety glasses with side shields. Use eye protection equipment tested and approved according to standards and regulations. Such as NIOSH (US) or EN 166 (EU).

**Hand / Skin protection:** Handle with gloves. Using a technique of proper glove removal to prevent skin comes into contact with the product (i.e. Without touching the outer surface of the glove). The selected protective gloves have to satisfy the specifications of EU Directive 89/686 / EEC and the standard EN 374 derived. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

In full

Material: nitrile rubber

Minimum Thickness: 0.11 mm

Penetration time:> 480mn

If splash contact

Material: nitrile rubber

Minimum Thickness: 0.11 mm

Penetration time:> 30 min

When used in a mixture with other substances, and under conditions which differ from EN 374, contact the supplier of CE approved gloves. This recommendation is given for information purposes and should be evaluated by a specialist in hygiene and industrial safety knowing the intended use by our customers. This should not be interpreted as approval in any usage scenario.

**General protection and hygiene:** Ensure the presence of an eyewash and safety shower. Use with adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the working day

**Respiratory protection:** If exposure nuisance, use a respirator with filter type P1 particles (EN143) or N95 (US). Use of tested and approved by standards such as NIOSH (US) or CEN (EU)

**Body protection:** Choose body protection according to the amount and concentration of the dangerous substance at the work

place.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Appearance

Form:	Liquid
Color:	transparent white
Odor:	No characteristic odor

#### 9.2 Information on basic physical and chemical properties

pH:	close to 12
Melting point:	no data available

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Boiling point:	100 ° C
Flash point:	no data available
Ignition temperature:	no data available
Ignition capacity:	no data available
lower explosion limit:	no data available
Upper explosion limit:	no data available
Combustible properties:	no data available
Vapour pressure at 20 ° C:	no data available
average relative density:	no data available
Water solubility:	no data available
Organic solvents:	no data available
Solids content:	no data available
Viscosity:	no data available
vapor density:	no data available
Evaporation rate:	no data available
Conductivity:	no data available
Other:	no data available

### 10. STABILITY AND REACTIVITY

- 10.1 Chemical stability:** stable under recommended storage conditions. Product carbonates in contact with air. Keep container tightly closed.
- 10.2 Conditions to avoid** avoid storing at cold temperatures
- 10.3 Materials to avoid:** no data available
- 10.4 Possibility of hazardous reactions:** no data available
- 10.5 Hazardous decomposition products:** no data available

### 11. STABILITY AND REACTIVITY

**Acute toxicity:** No data available

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**Skin corrosion / irritation:** no data available.

**Eye damage / eye irritation:** no data available.

**respiratory or skin sensitization:** no data available **Germ**

**cell mutagenicity:** No data available.

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

**Reproductive toxicity: May damage the unborn.** Suspected of damaging fertility

**Specific target organ toxicity - single exposure:** no data available.

**Specific target organ toxicity - repeated exposure:** May cause damage to organs after repeated exposure or prolonged exposure..

**Aspiration hazard:** no data available

### Potential health effects:

**Inhalation:** Harmful if inhaled. Can irritate the respiratory system..

**Ingestion:** Harmful if swallowed.

**Skin:** Harmful if absorbed through skin. May cause skin irritation

**Eyes:** May cause eye irritation.

**Signs and symptoms of exposure:** anemia, digestive disorders. It is reported that the seals salts cross the placenta and cause the death of the embryo and fetus. These salts also have teratogenic effects in some animal species. There were no reported teratogenic effects following exposure to organometallic lead compounds. But the adverse effects of lead on human reproduction, development of the embryo and fetus and postnatal development (mental, for example) have been reported. Excessive exposure may affect the blood and the nervous and digestive system. The anemia which develops from an inhibition of the synthesis of hemoglobin. In the absence of treatment, there may be risk of neuromuscular dysfunction, along with possible paralysis and encephalopathy. Other symptoms of overexposure include: pain in muscles and joints, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line gingival, insomnia, and metallic taste in the mouth. A high level of product in the body causes increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death. Kidney injury may occur.

**Additional Information** RTECS: no data available

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity:** no data available.

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**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:** No data available.

**12.6 Other adverse effects:** Very toxic to aquatic life with long lasting effects.

### 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods:** return the surplus and non-recyclable solutions to a disposal facility for waste. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**13.2 Eliminations contaminated packaging:** eliminate as unused product.

### 14. SHIPPING INFORMATION

**14.1 No-ONU / UN number :**

ADR/RID: 2291 IMDG:2291 IATA: 2291

**14.2 United Nations Shipping Name**

ADR/RID: COMPOSE

SOLUBLE DU PLOMB N.S.A

IMDG: LEAR COMPOUND

SOLUBLE, N.O.S.

IATA: lead compound, soluble, n.o.s.

**14.3 Class of transportation hazard**

ADR/RID :6.1 IMDG :6.1 IATA :6.1

**14.4 Packing group**

ADR/RID:III IMDG:III IATA:III

**14.5 Environmental hazards**

ADR/RID: yes IMDG: marin pollutant: yes IATA: no

**14.6 Special precautions for users:** no data available

### 15. REGULARY INFORMATION

**15.1 Informations on the label :**

# MATERIAL SAFETY DATA SHEET



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**Guidelines and regulations according to CE:** SDS under Reg CE N° 1907/2006

**Product identification and characterization :** 3% lead citrate in aqueous solution

**15.2 Chemical safety assessment:** not available

### 16. OTHER INFORMATIONS

**Service responsible for SDS:** CEO DELTA MICROSCOPIES

**Contact :** [info@deltamicroscopies.com](mailto:info@deltamicroscopies.com)

Other informations :

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. Delta Microscopies and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product  
End of FDS