

Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

Section 1: Identification of the substance or mixture and the company

1.1. Product Identifier

Lead citrate staining solution

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

Staining of electron microscopy samples

1.3. Details of the supplier of the Safety Data Sheet

Vof Micro to Nano
Wateringweg 79
2031EK Haarlem
Netherlands
Tel: +31(0)85-2013155
E: info@microtonano.com

1.4 Emergency telephone number

112 (NLD) or your national emergency telephone number for chemical spills, leaks, fires, exposures or accidents

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Physical:	Non flammable
Health:	Acute toxicity category 4 Reproductive toxicity category 1
Environment:	Chronic aquatic hazard category 1
Other hazards:	None

Classification according to Regulation EC Nr. 1272/2008

	T: Toxic
	Xn: Harmful
	N: Dangerous to the environment
Health:	R20: Harmful by inhalation R22: Harmful if swallowed R33: Danger of cumulative effects



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

Physical Environment: R62 (3): Possible risk of impaired fertility
R63 (3): Possible risk of harm to the unborn child
Not flammable

Other hazards: R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
Not classified

2.2 Labeling elements

Labelling accordance to Regulation EC Nr. 1272/2008

Hazard pictogramm(s):



Signal word:

Danger

Hazard statement(s):

H302+H332: Harmful if swallowed or if inhaled
H360: May damage the unborn child. Suspected of damaging fertility
H373: May cause damage to organs through prolonged or repeated exposure
H410: Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention:

P102: Keep out of reach of children
P260: Do not breathe dust/fumes/gas/mist/vapours/spray
P261: Avoid breathing dust/fumes/gas/mist/vapours/spray
P270: Do not eat, drink or smoke when using this product
P281: Wear protective equipment as required

Response:

P301+P310: If swallowed: Immediately call a poison Center/doctor/physician/first aider
P308+P313: If exposed or concerned: Get medical attention
P331: Do NOT induce vomiting
P312: Call a poison center/doctor/physician/first aider if you feel unwell
P391: Collect spillage

Storage:

P405: Store locked up

Disposal:

P501: Dispose of contents/container according to local/regional/national/international regulations

Supplemental hazard info:

Contains lead. Should be used on surfaces which come in contact with children

2.3 Other hazards

Not applicable



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

Section 3: Composition / information on components

3.1. Substances

Not applicable

3.2 Mixtures

1. EC Nr 2. Index number	% (weight)	Name	Classification according to directive 67/548/EEC [DSD]	Classification according to regulation Nr 1272/2008 [CLP]
208-141-1 082-001-00-6	3	Lead citrate	R20R22R33R62R6 3	H302+H332H360H373H410
231-791-2	97	water		

(* Explanation notes: see section 16)

Section 4: First aid measures

4.1. Description of first aid measures

- Contact with eyes:** Rinse cautiously with water for several minutes. If possible, remove contact lenses. Continue rinsing.
 Seek medical attention if irritation persists.
- Contact with skin:** Wash with water and soap.
 Seek medical attention if irritation persists.
- Inhalation:** Fresh air, keep warm and at rest.
 Seek medical attention if ill effects occur
- Ingestion:** If swallowed, do not induce vomiting
 Call a doctor immediately
 If vomiting appears imminent or occurs hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.
 Never give liquid to a person with reduced awareness
 Give water to rinse out mouth, then provide water slowly as much as casually can comfortably drink
 Avoid giving milk or oils
 Avoid giving alcohol



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

4.2. Important symptoms and effects, either immediate or delayed

Inhalation:	Symptoms of poisoning can be delayed, medical observation for at least 48hrs after the accident.
Ingestion:	May cause respiratory and digestive tract irritation Symptoms of poisoning can be delayed, medical observation for at least 48hrs after the accident.
Skin contact:	Generally the product does not irritate the skin
Eye contact:	Irritating to eyes Symptoms: redness and pain, impaired vision

4.3. Indication of any immediate medical attention and special treatment

General advise: If you feel unwell, seek medical advice; show product label if possible
If symptoms persist, always call a doctor

Section 5: Firefighting Measures

5.1. Extinguishing media

Use CO₂, water or dry powder.

5.2 Special hazards arising from the substance or mixture

No further relevant information available

5.3 Advice to firefighters

Fight fire from a safe distance, with adequate cover
Wear self-contained breathing apparatus for fire fighting

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not required

6.2 Environmental precautions

Avoid release to the environment
Do not allow to enter public sewers and waterways



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

6.3 Methods and material for containment and clean up

Absorb spillage in suitable inert material
Clean up spills immediately

Wash spill area with soap and water to remove last traces of residue

6.4 Reference to other sections

For further information see section 8

Section 7: Handling and storage

7.1. Precautions for safe handling

Ensure adequate ventilation
Avoid contact with skin and eyes
Wash thoroughly after use

7.2 Conditions for safe storage, including any incompatibilities

Keep at room temperature
Keep out of reach of children

7.3 Specific end uses(s)

Contrast stain for TEM samples

Section 8: Exposure control and personal protection

8.1. Control parameters

No exposure limits determined

8.2 Exposure controls

Control procedures: Ensure adequate ventilation
Keep away from foodstuffs, beverages and feed
Immediately remove all soiled and contaminated clothing
Wash hands at breaks and at the end of work

Personal protection: Take precautions to avoid contact with eyes and skin when handling the products
Ensure adequate ventilation



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

Inhalation: In case of insufficient ventilation, wear suitable respiratory equipment:
Hands and skin: Wear suitable gloves against chemicals; recommended gloves:
Nitrile
Eyes: Wear safety goggles

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance/physical state: Liquid
Colour: Transparent
Odour: Characteristic
pH not applicable
Boiling point/range: 100°C
Flash point: Not applicable
Flammability: Product is not flammable
Evaporation rate: Not determined
Danger of explosion: Product does not present an explosion hazard
Explosion limits: upper limit: Not applicable
lower limit: Not applicable
Vapour pressure: Not determined
Relative density: 1 g/cm³ @ 20°C
Solubility in water: fully miscible
Auto-ignition: Not applicable
Viscosity: 1cP

9.2 Other information

VOC: None

Section 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions known if used for its intended purposes

10.2 Chemical stability

Stable at normal temperatures and pressures



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

10.3 Possibility of hazardous reactions

No further relevant information available

10.4 Conditions to avoid

No further relevant information available

10.5 Incompatible materials

No further relevant information available

10.6 Hazardous decomposition products

No dangerous decomposition products known

Section 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure:

Inhalation: Delayed effects possible
Swallowing: Delayed effects possible
Skin contact: No irritant effects
Eye contact: Irritation to eyes

No toxicological data available

Section 12: Ecological information

12.1. Toxicity

Very toxic for fish
Very toxic for aquatic organisms

12.2 Persistence and degradability

No further relevant information available



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

12.3 Bioaccumulative potential

No further relevant information available

12.4 Mobility in soil

No further relevant information available

12.5 Results of PBT and vPvB assessment

No information available

12.6 Hazardous decomposition products

No experimental data available

Section 13: Disposal considerations

13.1. Waste treatment methods

Product: This material and its container must be disposed of in a safe way. Containers may still present a chemical hazard when empty. Do not discharge into drains or the environment, dispose to an authorised waste collection point.

National regulations: Disposal should be in accordance with local, state or national legislation.

Section 14: Transport information

Labels required:



14.1. UN number

UN-number: 2291



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

14.2 UN proper shipping name

Proper shipping name: 2291 Lead compounds

14.3 Transport hazard class(es)

Class: 6
ADR/RID-Classification code: 6.1

14.4 Packing group

Packing: III
Limited Quantity: 5L

14.5 Incompatible materials

ADR/RID- Environmentally hazardous: Not applicable
IMDG-Marine pollutant: No relevant data
IATA/ICAO-Environmentally hazardous: No relevant data

14.6 Special precautions for user

ADR/RID-Tunnel code: E
IMDG-EMS: F-A, S-A

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

UN-number: 2291

15.2 Chemical safety assessment

No further relevant information available



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

Section 16: Other information

RoHS Directive Compliant

This product is fully compliant with the directive 2100/65/EU Annex II (RoHS). It does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's or PBDE's.

WEEE

This product is not a piece of electrical or electronic equipment, and it therefore not governed by Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)

Abbreviations:

Asp. Tox	Aspiration hazard
Carc.	Carcinogenicity
Exp.	Exposure
GHS	Global Harmonised System of Classification of Labelling Chemicals
Irrit.	Irritant
N/A	Not applicable
N/E	Not estimated
PBT	Persistent Bioaccumulative and Toxic
WEL	Workplace Exposure Limit
Repr.	Reproductive toxicant
RoHS	Restriction of Hazardous Substance
SEM	Scanning Electron Microscope
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
TCLo	Lowest published toxic concentration
vPvB	very Persistent and very Bioaccumulative

DSD / DPD label elements



Full Text Risk and Hazard codes

- H302 – Harmful if swallowed.
- H332 – Harmful if inhaled.
- H360 – May damage fertility or the unborn child.
- H373 - May cause damage to organs through prolonged or repeated exposure
- H410 – Very toxic to aquatic life with long lasting effects.



Product name: Lead citrate staining solution, 3%
Document Nr.: SDS00129005040-01

Date: October 19th 2016
Version: 1.0

R20 - Harmful by inhalation.
R22 – Harmful if swallowed.
R33 – Danger of cumulative effects
R50 – Very toxic to aquatic organisms
R53 – May cause long-term adverse effects in the aquatic environment
R62 – Possible risk of impaired fertility
R63 – Possible risk of harm to the unborn child.

Safety advice:

S02 – Keep out of reach of children.

S23 – Do not breath gas/fumes/vapour/spray.
S26 – In case of contact with eyes, rinse with plenty of water and seek medical help.
S281 – After contact with skin, wash immediately with detergent and plenty of waterways.
S29 – Do not empty in drains.
S35 – This materials and its container must be disposed of in a safe way.
S36 – Wear suitable protective clothing.
S37 – Wear suitable gloves.
S38 – In case of insufficient ventilation, wear suitable respiratory equipment.
S39 - Wear eye / face protection.
S45 – In case of accident or if you feel unwell, immediately contact Doctor or Poisons information center (show label if possible).
S46 – If swallowed, seek immediate medical advice and show label if possible.
S56 – Dispose of this materials and its container at hazardous or special waste collection point.
S61 – Avoid release to the environment
S63 – In case of accident by inhalation, remove casualty to fresh air and keep at rest.
S64 – If swallowed, rinse mouth with water (only if person is conscious)

This product should be stored, handled and used in accordance with good industrial hygiene practices and in accordance with any legal regulation.

The information contained herewith is based on the present state of our knowledge and is intended to describe the product from the point of view of safety requirements. It does not guarantee any specific properties.

It is the responsibility of the user to query and verify any information seeming suspect or where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, state, federal and international regulations.

