

**Safety Data Sheet (SDS)**

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2018

Reviewed on 05/28/2018

**1 Identification****• Product Identifier****• Trade Name: Lectroetch Electrolyte LNC3****• Relevant identified uses of the substance or mixture and uses advised against:****• Product Description:**

Etching electrolyte for Aluminum, Carbides, Chrome Plate-Hard, Cobalt Alloys, Stellite, Deep-Etch Aluminum, Ferrous Metals, Discaloy, Gold, Gold-Plate, Hastelloys, Inconel, Iron, Monel Metal, Low & High-Carbon Steel, Mild Steel, Tool Steel, Titanium, Black Oxide, Blue Furnace Oxide, Phosphated Steel and their alloys.

**• Application of the substance / the mixture:** Electrolytic etching solution**• Details of the Supplier of the Safety Data Sheet:****• Manufacturer/Supplier:**

The Lectroetch Company  
5342 Evergreen Parkway  
Sheffield Village, OH 44054 USA  
Phone: 440-934-1249

**• Emergency telephone number:** 440-934-1249**\* 2 Hazard(s) Identification****• Classification of the substance or mixture:**

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

**• Label elements:****• GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

**• Hazard pictograms:**

GHS07

**• Signal word:** Warning**• Hazard statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

**• Precautionary statements:**

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

P302+P352 If on skin: Wash with plenty of water.

P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P337+P313 If eye irritation persists: Get medical advice/attention.

**• Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

4.2 % of the mixture consists of component(s) of unknown toxicity.

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## Trade Name: Lectroetch Electrolyte LNC3

- **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

- **Hazard(s) not otherwise classified (HNOC):** None known

## 3 Composition/Information on Ingredients

- **Non-hazardous components:**

Trade Secret	2-12%
7732-18-5 Water, distilled water, deionized water	70-90%

- **Chemical characterization: Mixtures**

- **Description:** Mixture of substances listed below with non-hazardous additions.

- **Dangerous Components:**

Trade Secret	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	15-35%
CAS: 77-92-9 RTECS: GE 7350000	Citric Acid ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	5-10%
Trade Secret	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	≤2.5%

- **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

## 4 First-Aid Measures

- **Description of first aid measures**

- **After inhalation:**

This product is not expected to present an inhalation hazard at ambient conditions.  
In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:**

Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.

- **After swallowing:** If swallowed and symptoms occur, consult a doctor.

- **Information for doctor**

- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

## 5 Fire-Fighting Measures

- **Extinguishing media**

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:** No further relevant information.

- **Special hazards arising from the substance or mixture:**

If incinerated, product may release toxic gases including: Carbon Oxides, Hydrogen Chloride gas, Magnesium Oxides, Sulfur Oxides and Sodium Oxides.

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- **Advice for firefighters**
- **Special protective equipment for firefighters:**  
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

### \* 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Dispose of the collected material according to regulations.
- **Reference to other sections:**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
- **PAC-1:**  
None of the ingredients are listed.
- **PAC-2:**  
None of the ingredients are listed.
- **PAC-3:**  
None of the ingredients are listed.

### 7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**  
Store away from strong acids, strong bases, strong oxidizing agents and strong reducing agents.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

### \* 8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**  
All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
- **Components with occupational exposure limits:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

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**Trade Name: Lectroetch Electrolyte LNC3**• **Exposure controls:**• **Personal protective equipment**• **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

• **Breathing equipment:** Not required.• **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

• **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

• **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

• **Eye protection:**

Tightly sealed goggles

\* **9 Physical and Chemical Properties**• **Information on basic physical and chemical properties**• **General Information**• **Appearance:****Form:**

Liquid

**Color:**

Clear, colorless

• **Odour:**

Slight

• **Odor threshold:**

Not determined.

• **pH-value @ 20 °C (68 °F):**

2.3

• **Change in condition****Melting point/Melting range:**

Not determined.

**Boiling point/Boiling range:**

≥100 °C (≥212 °F)

• **Flash point:**

None

• **Flammability (solid, gaseous):**

Not applicable.

• **Ignition temperature:**

≥1,010 °C (≥1,850 °F)

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**Trade Name: Lectroetch Electrolyte LNC3**

- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower:** 0.0 Vol %
  - Upper:** 0.0 Vol %
- **Vapor pressure @ 20 °C (68 °F):** ≤23 hPa (≤17.3 mm Hg)
- **Density @ 20 °C (68 °F):** 1.151 g/cm<sup>3</sup> (9.6051 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with:**
  - Water:** Fully Soluble
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
- **Solvent content:**
  - Water:** 73.8 %
  - VOC content:** 0.00 %
  - Solids content:** 25.0 %
- **Other information:** No further relevant information available.

\* **10 Stability and Reactivity**

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** Strong acids, strong bases, strong oxidizing agents and strong reducing agents.
- **Hazardous decomposition products:**  
Carbon Oxides, Hydrogen Chloride gas, Magnesium Oxides, Sulfur Oxides and Sodium Oxides.

\* **11 Toxicological Information**

- **Information on toxicological effects:**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

**Trade Secret**

Oral	LD50	>5,000 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rat)
Inhalative	LC50/96 hours	2,119.3 mg/l (Pimephales)

**77-92-9 Citric Acid**

Oral	LD50	5,040 mg/kg (Mouse)
		5,400 mg/kg (Rat)

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**Trade Name: Lectroetch Electrolyte LNC3**

Dermal LD50 >2,000 mg/kg (Rat)  
 LC50/48 hrs 440 mg/l (Daphnia)

• **Primary irritant effect:**• **On the skin:** Irritant to skin and mucous membranes.• **On the eye:** Irritating effect.• **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

• **Carcinogenic categories:**• **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

• **NTP (National Toxicology Program):**

None of the ingredients are listed.

• **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

\* **12 Ecological Information**• **Toxicity:**• **Aquatic toxicity:**

Trade Secret

EC50 &gt;100 mg/l (Green algae)

**77-92-9 Citric Acid**

EC50 1,534 mg/l (Daphnia)

• **Persistence and degradability:** No further relevant information available.• **Behavior in environmental systems:**• **Bioaccumulative potential:** No further relevant information available.• **Mobility in soil:** No further relevant information available.• **Additional ecological information:**• **General notes:**

Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.

• **Results of PBT and vPvB assessment:**• **PBT:** Not applicable.• **vPvB:** Not applicable.• **Other adverse effects:** No further relevant information available.\* **13 Disposal Considerations**• **Waste treatment methods**• **Recommendation:**

Observe all federal, state and local environmental regulations when disposing of this material.

• **Uncleaned packaging**• **Recommendation:** Disposal must be made according to official regulations.**14 Transport Information**• **UN-Number:**• **DOT, ADR/ADN, ADN, IMDG, IATA**

Non-Regulated Material

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**Trade Name: Lectroetch Electrolyte LNC3**

- **UN proper shipping name:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR/ADN, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

\* **15 Regulatory Information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**
- **Section 355 (extremely hazardous substances):**  
None of the ingredients are listed.
- **Section 313 (Specific toxic chemical listings):**  
None of the ingredients are listed.
- **TSCA (Toxic Substances Control Act):**  
77-92-9 Citric Acid  
7732-18-5 Water, distilled water, deionized water
- **TSCA new (21st Century Act) (Substances not listed)**  
Trade Secret  
Trade Secret
- **California Proposition 65:**
- **Chemicals known to cause cancer:**  
None of the ingredients are listed.
- **Chemicals known to cause reproductive toxicity for females:**  
None of the ingredients are listed.
- **Chemicals known to cause reproductive toxicity for males:**  
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity:**  
None of the ingredients are listed.
- **New Jersey Right-to-Know List:**  
None of the ingredients are listed.
- **New Jersey Special Hazardous Substance List:**  
None of the ingredients are listed.
- **Pennsylvania Right-to-Know List:**  
None of the ingredients are listed.
- **Pennsylvania Special Hazardous Substance List:**  
None of the ingredients are listed.

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**Trade Name: Lectroetch Electrolyte LNC3**• **Carcinogenic categories:**• **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

• **TLV (Threshold Limit Value established by ACGIH):**

None of the ingredients are listed.

• **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms:**

GHS07

• **Signal word:** Warning• **Hazard statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

• **Precautionary statements:**

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

P302+P352 If on skin: Wash with plenty of water.

P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P337+P313 If eye irritation persists: Get medical advice/attention.

• **National regulations:**

None of the ingredients are listed.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other Information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 05/28/2018 / 1• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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### Trade Name: **Lectroetch Electrolyte LNC3**

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **\* Data compared to the previous version altered.**

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