

Safety Data Sheet



1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT NAME: Liquid Soldering Flux: 5110, 5115

MANUFACTURER: Selectrode Industries, Inc.
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Huntington Station, NY 11746 U.S.A.
Phone: 631-547-5470
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EMERGENCY TELEPHONE NUMBER: 631-547-5470

2. HAZARD IDENTIFICATION:

Emergency Overview: This product is normally not considered hazardous as shipped. Avoid eye contact or inhalation of dust from the product. When this product is used in a welding process, the most important hazards are welding fumes and heat.

Classification of the Substance/Mixture

CLP/GHS Classification (1272/2008):

Acute Toxicity - Oral, Category 4

Skin Corrosion, Category 1B

Specific Target Organ Toxicity (Single Exposure), Category 2

Hazardous to the Aquatic Environment – Long-Term Hazard, Category 1

EU Classification (67/548/EEC):

Toxic (T), Harmful (Xn), Corrosive (C), Dangerous for the Environment (N), R39/23/24/25, R22, R34, R50/53

Hazardous Classification per 29CFR 1910.1200 (Rev. July 1, 2012):

Acute Toxicity - Oral, Category 4

Skin Corrosion, Category 1B

Specific Target Organ Toxicity (Single Exposure), Category 2

Hazardous to the Aquatic Environment – Long-Term Hazard, Category 1

Labelling:

Symbols:

Signal Word: Danger

Hazard Statements:

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

H371 – May cause damage to respiratory system, eyes, brain and nervous system through prolonged or repeated exposure.

H410 – Very toxic to aquatic life with long lasting effects

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces – No smoking.

P260 – Do not breathe dust/fume/gas/mist/vapours/spray.

P264 – Wash skin and hair thoroughly after handling.

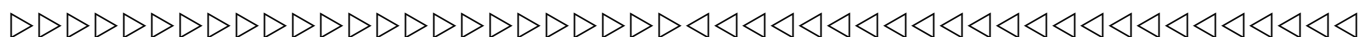
P270 – Do not eat, drink or smoke when using this product.

P273 – Avoid release to the environment.

P280 – Wear protective gloves/eye protection/face protection.

P301+P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

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Suitable Extinguishing Media: Use the extinguishing media recommended for the burning material and fire situation. Be aware of other material in surrounding area to determine if water, fog, foam or CO2 may be used.

Unsuitable Extinguishing Media: Not applicable

Specific Hazards Arising From Chemical: Arcs and sparks can ignite combustibles and flammable products. Hydrogen chloride gas, Zinc/zinc oxides, Nitrogen Oxides (NOx), Carbon Oxides

Protective Equipment: Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES:

Personal Precautions: Refer to section 8.

Environment Precautions: Refer to section 13.

Cleaning Measures: Proper equipment should be used. In case of spill, clear the affected area.

Respond with trained personnel. Personnel should wear gloves, safety glasses and face shields during clean up.

In the event of a non-incident release, minimum personal protective equipment should be Level B: triple-gloves, chemical resistant suit and boots, hard hat, and self-contained breathing apparatus. Place all spilled residue in a suitable container and seal. Dispose of in accordance with applicable U.S. Federal, State, or local procedures.

7. HANDLING AND STORAGE:

Precautions for Safe Handling: Handle with care to avoid stings or cuts. Wear gloves when handling product. Wash hands thoroughly after handling to remove all residues. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

Conditions for Safe Storage: Store in cool, dry place in sealed containers. Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions. Store product away from direct sunlight

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:

Engineering Controls: Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep work place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

Exposure limits: Use industrial hygiene equipment to ensure that exposure does not exceed applicable national exposure limits. The limits defined under section 3 can be used as guidance. Unless noted, all values are for 8 hour time weighted average. For information about welding fume analysis refer to section 10.

Biological limits: No available data

Personal protection:

Respiratory protection: Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.

Hands protection: Wear appropriate gloves to prevent skin contact.

EN 12477: Protection gloves for welders

Requirements (EN Levels)	Type A	Type B
Abrasion (Cycles)	2 (500)	1 (100)
Cut (Factor)	1 (1.2)	1 (1.2)
Tear (Newton)	2 (25)	1 (10)
Puncture (Newton)	2 (60)	1 (20)
Burning Behaviour	3	2
Contact Heat	1	1
Convective Heat	2	-
Small Splashes	3	2
Dexterity	1 (11)	4 (6.5)

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Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (°C) is 100 and the threshold time (seconds) >15.

Eyes protection: Welder's helmet or face shield with colour absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infra red and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.

Skin protection: Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity.

Class 1	
Impact of Spatter	15 Drops
Heat Transfer (radiation)	RHTI 24 ≥ 7 seconds
Process	Manual welding with light formation of spatter and drops <ul style="list-style-type: none"> • Gas Welding • TIG Welding • MIG Welding • Micro plasma welding • Brazing • Spot Welding • MMA Welding (with rutile-covered electrode)
Environmental Conditions	Operation of machines <ul style="list-style-type: none"> • Oxygen cutting machines • Plasma cutting machines • Resistance welding machines • Machines for thermal spraying • Bench welding

Class 2	
Impact of Spatter	25 Drops
Heat Transfer (radiation)	RHTI 24 ≥ 16 seconds
Process	Manual welding with heavy formation of spatter and drops <ul style="list-style-type: none"> • MMA welding (with basic or cellulose-covered electrodes) • MAG welding (with CO2 or mixed gases) • MIG Welding (with high current) • Self shielded flux core arc welding • Plasma cutting • Gouging • Oxygen cutting • Thermal spraying
Environmental Conditions	Operation of machines <ul style="list-style-type: none"> • In confined spaces • At overhead welding/cutting or in comparable constrained positions

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Liquid

Color: Clear

Odour: Sweet Odour

Odour Threshold: Not Available

pH Value: Not Available

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Specific Gravity: 1.32

Melting Point/Melting Range: Not Available

Freezing Point: Not Available

Boiling Point/Boiling Range: 220° F, 104° C

Flash point: Not Available

Evaporation Rate: (butyl acetate=1): <1

Self-in flammability: Not Available

Explosion limits: Not Available

Vapour pressure: Not Available

Vapour density: (air=1): 4.0

Density at 20°C: Not Available

Bulk Density: Not Available

Relative density: Not Available

Solubility: Slightly Soluble

Partition coefficient: Not Available

Auto-ignition temperature: Not Available

Decomposition temperature: Not Available

Other Information: No available data.

10. STABILITY AND REACTIVITY:

Chemical Stability: This product is stable under normal conditions.

Hazardous Reactions: Contact with chemical substances like acids or strong bases cause generation of gas.

Conditions to Avoid: Extreme temperatures, incompatible materials.

Incompatible Materials: Strong oxidizers, acids, alkalis and their carbonates, hydrogen cyanide, inter-halogens, ammonium nitrate, potassium chlorate, lead and silver salts.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen chloride, nitrogen and zinc oxides, and ammonia.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in section 3. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quality of fumes and gases produced.

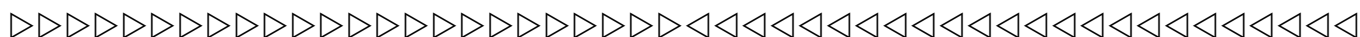
11. TOXICOLOGICAL INFORMATION:

Signs and Symptoms of Overexposure: This product is a clear, colourless liquid, possessing a slight, sweet odour. This material is acidic and can irritate and burn the skin, eyes and any other contaminated tissue. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals. Emergency responders must wear the proper personal equipment suitable for the situation to which they are responding.

Symptoms of Over-Exposure by Route of Exposure: The most significant routes of over-exposure for this product are by contact with skin, eye contact, or inhalation of mists or sprays generated by this product. The symptoms of over-exposure to this product, by route of entry, are as follows:

Inhalation: If vapors, mists, or sprays of this product are inhaled, they can irritate and burn the nose, throat, and respiratory system. Symptoms of inhalation over-exposure may include sore throat, choking, coughing, and difficulty breathing. Prolonged or repeated over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. It has been reported that a worker developed asthmatic symptoms after performing soldering work with a flux containing Ammonium and Zinc Chlorides (components of this product) vapors in high concentrations can cause blindness. Severe inhalation over-exposure may cause pulmonary edema (a life threatening accumulation of fluid in the lungs) or pneumonitis. Symptoms of pulmonary edema (e.g. shortness of breath, chest pains) can be delayed for several hours after exposure. Severe inhalation of vapors or fumes (as may occur if individuals are exposed in poorly ventilated areas, such as confined spaces) may be harmful.

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Contact with Skin or Eyes: Depending on the duration and concentration of over-exposure, skin contact with this product can irritate and burn skin. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration. Depending on the duration and concentration of over-exposure, eye contact with this product can irritate and burn the eyes. Eye over-exposure can cause pain, tearing and redness. Severe eye over-exposure may cause blindness.

Skin Absorption: Methanol is readily absorbed through the skin. Because Methanol is a minor component of this product, skin absorption is not anticipated to be a significant route of over-exposure.

Ingestion: If this flux is ingested, nausea, vomiting, and diarrhea may occur (depending on the amount of product swallowed). Severe ingestion exposures may result in damage to the tissues of the gastrointestinal system, and death.

Injection: Though not anticipated to be a likely route of occupational exposure for this product, injection of this product (via punctures or lacerations by a contaminated object) may cause local reddening, tissue swelling, and discomfort.

Toxicity Data: Human toxicological data are available for the components of this product, as listed below.

Hydrochloric Acid 7647-01-0		
Inhalation	LCLo	1300 ppm/ 30 Minutes (human)
Inhalation	LCLo	1300 ppm/ 5 Minutes (human)
Unreported	LDLo	81 mg/kg (man)

Methanol 67-56-1		
Oral	LDLo	6422 mg/kg; central nervous system, pulmonary, gastrointestinal effects (man)
Oral	TDLo	3429 mg/kg; eye effects (man)
Oral	LDLo	428 mg; central nervous system, pulmonary effects (human)
Oral	LDLo	143 mg/kg; eye, pulmonary, gastrointestinal effects (human)
Oral	TDLo	4000 mg/kg; eye, pulmonary, gastrointestinal effects (woman)
Inhalation	TCLo	86000 mg/m3; eye, pulmonary effects (human)
Inhalation	TCLo	300 ppm; eye, central nervous system pulmonary effects (human)

Zinc Chloride 7646-85-7		
Inhalation	TCLo	4800 mg/m3/ 30 minutes; pulmonary effects (man)
Inhalation	TCLo	4800 mg/m3/ 3 hours (human)

Acute Toxicity: Methyl alcohol may be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Effects due to ingestion may include: nausea, Headache, Vomiting, Gastrointestinal disturbance, Dizziness, Weakness, Confusion, Drowsiness, Unconsciousness and may cause convulsions.

LD/LC50 Values that are relevant for classification		
Zinc Chloride 7646-85-7		
Oral	LD50	350 mg/kg (rat)
	LC50	.4 – 2.2 mg/l (96h) (carp)

LD/LC50 Values that are relevant for classification		
Ammonium Chloride 12125-02-9		
Oral	LD50	1650 mg/kg (rat)
	LC50	209 mg/l (96h) (carp)
	LC50	161 mg/l (48h) (water flea)

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LD/LC50 Values that are relevant for classification		
Methanol 67-56-1		
Oral	LD50	5628 mg/kg (rat)
Inhalation	LC50	64000 ppm (4h) (rat)
Inhalation	LC50	87.6 mg/l (4h) (rat)
Dermal	LD50	15800 mg/kg (rabbit)
	LC50	19000 mg/l (96h) (rainbow trout)

12. ECOLOGICAL INFORMATION:

Toxicity: No available data.

Persistence and Degradability: No available data.

Bio accumulative Potential: No available data.

Mobility in Soil: No available data.

Other Adverse Effects: No available data.

Do not allow undiluted product or large quantities to reach ground water, water course or sewage systems. Do not allow product to be released in the environment without proper governmental permits.

13. DISPOSAL CONSIDERATIONS:

Product: For product elimination, consult recycling companies or appropriate local authority.

Package: May be disposed in approved landfills provided local regulations are observed.

14. TRANSPORT INFORMATION:

UN-number: UN 1760

UN proper shipping name: Corrosive liquids, n.o.s. (Zinc Chloride, Hydrochloric Acid)

Transport hazard class: 8 (Corrosive)

Packing group: III

Environmental hazards: Not applicable

Special precautions for users: Not applicable

Note: Consumer commodity shipments of the product 1-gallon or less in volume may be renamed "Consumer Commodity" and re-classed as ORM-D material. Refer to 49 CFR 173.154 © for additional information.

North American Emergency Response Guidebook Number (2000): 154

Marine Pollutant: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

Transport Canada Transportation of Dangerous Goods Regulation: This material is considered as dangerous goods, per regulations of Transport Canada. Use the above information for the preparation of Canadian shipments.


15. REGULATORY INFORMATION:

Safety, health and environment regulations/legislation specific for the substance or mixture: Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

Warning: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. Electric shock can kill. Arc rays and sparks can injure eyes and burn skin. Wear correct hand, head, eye and body protection.

Chemical safety assessment: No

USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous.

CALIFORNIA PROPOSITION 65:  **WARNING:** This product can expose you to chemicals including [Methanol], which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. (California Health & Safety Code § 25249.5 et seq.)

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United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Section 302,304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

Chemical Name	SARA 302 (40 CFR 355 appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Ammonium Chloride	No	Yes	No
Hydrochloric Acid	No	Yes	Yes
Methanol	No	Yes	Yes
Zinc Chloride	No	Yes	Yes (as Zinc compound)

U.S. SARA Threshold Planning Quantity: There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirements filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20

U.S. CERCLA Reportable Quantity (RQ): Ammonium Chloride = 5000 lbs (2270 kg); Hydrochloric Acid = 5000 lbs (2270 kg); Methanol = 5000 lb (2270 kg); Zinc Chloride = 1000 lb (454 kg).

U.S. TSCA Inventory Status: The components of this product are listed on the TSCA inventory.

16. OTHER INFORMATION:

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

This Material Safety Data Sheet complies with the EC directives 91/155/EEC and 93/112/EEC, including modifications 2001/58/EC.

Complies with OSHA Communication Standard 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499

Hazard Statements:

- H228** – Flammable solid
- H301** – Toxic if swallowed.
- H302** – Harmful if swallowed.
- H311** – Toxic in contact with skin.
- H319** – Causes serious eye irritation.
- H331** – Toxic if inhaled.
- H335** – May cause respiratory irritation.
- H370** – Causes damage to organs.
- H410** – Very toxic to aquatic life with long lasting effects

R-Phrases:

- R11** – Highly flammable
- R22** – Harmful if swallowed.
- R23/24/25** – Toxic by inhalation, in contact with skin and if swallowed.
- R34** – Causes burns.
- R36** – Irritating to eyes.
- R39/23/24/25** – Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R50/53** – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-Phrases:

- S7** – Keep container tightly closed.
- S16** – Keep away from source of ignition – No smoking.
- S22** – Do not breathe dust.

