

Safety Data Sheet

1. Supplier and Manufacturer

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 CHEMTREC 24-hour Emergency Response: 800-424-9300 or 703-527-3887
 SDS Number: Solder Flux Liquid 201606
 Product Codes: **Solder Flux Liquid**
 Product Use(s): Flux for metal brazing



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2. Hazards identification

Classification(s)

GHS Classified: Acute Tox. 4 (Oral): H302. Skin Corrosion 1B: H314. Severe Eye Damage 1; Aquatic Acute 1: H400

GHS Label Symbol(s): Health Hazard, Exclamation Point, Corrosive, Environment



GHS Label Signal Word(s): Danger

GHS Label Hazard Statement(s): Harmful if swallowed. Causes severe skin burns and eye damage. Very toxic to aquatic life.

GHS Label Precautionary Statement(s): Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wear protective gloves, protective clothing, and eye/face protection. Wash hands thoroughly after handling. Store locked up. Do not eat, drink, or smoke when using this product. If exposed or concerned, get medical advice or attention. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Call a doctor or Poison Control Center if you feel unwell. IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if easy to do. Continue rinsing. Immediately call a doctor or Poison Control Center. Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

3. Composition/information on ingredients

Ingredient	CAS #	% ww	GHS note
Zinc Chloride	7646-85-7	< 30	Acute Tox. 4 (Oral): H302; Skin Corr. 1B: H314; STOT SE 3: H335; Aquatic Acute 1: H400; Aquatic Chronic 1: H410
Ammonium Chloride	12125-02-9	5 - 25	Acute Tox. 4 (Oral): H302; Eye Irrit. 2A: H319
Hydrochloric Acid	7647-01-0	< 5	Acute Tox. 4 (Oral): H302; Skin Corr. 1B: H314; Eye Dam. 1: H318; STOT SE 3: H335
Methanol	67-56-1	< 5	Flam. Liq. 2: H225; Acute Tox. 3 (Oral): H301; Acute Tox. 3 (Dermal): H311; Acute Tox. 3 (Inhalation): H331; STOT SE 1: H370
Water	7732-18-5	Bal.	

4. First aid measures

Eyes: Flush affected areas with water for at least fifteen minutes. Remove contact lenses if present and easy to do. Seek medical attention/ contact poison control center immediately.

Skin: Remove contaminated clothing. Wash affected area with large quantities of water. Chemical burns must be treated by a physician. Seek medical attention. Launder or dry-clean clothing before reuse.

Ingestion: Seek immediate medical assistance. Rinse mouth. Do not induce vomiting unless explicitly instructed by medical personnel. Do not give anything by mouth to an unconscious or convulsive person.

Inhalation: If signs and symptoms of toxicity are observed, remove subject from area, administer oxygen, and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

Most important symptoms: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Additional indications/ medical attention: Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Firefighting measures

Suitable extinguishing media: Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media: Do not use water jet as an extinguisher; water jetting will spread fire.

Special PPE and equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions: Use water spray to cool unopened containers.

Specific methods: Use standard firefighting procedures and consider other hazardous materials involved.

General fire hazards: No unusual fire or explosion hazards noted. Methanol component is highly flammable.

6. Accidental release measures

Personal Precautions: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Avoid contact with skin, eyes, and mucous membranes. Wear appropriate protective equipment (e.g., gloves, chemical goggles) during cleanup. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Methods and Materials: Isolate spilled product and transfer to impervious containers. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Environmental Precautions: Prevent spills from entering sewers or contaminating soil.

7. Handling and storage

Handling Precautions: Do not get this material in contact with eyes or skin. Avoid prolonged exposure. Provide adequate ventilation. Use protective equipment as needed.

Work and Hygiene Practices: To prevent ingestion following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing or protective equipment before entering eating/drinking areas.

Storage Precautions: Store in a cool, locked location away from incompatible materials (see Section #10).

8. Exposure controls/personal protection.

Ingredients – Exposure Limits

Ingredient	CAS #	ACGIH TLV (mg/m ³)	OSHA PEL (mg/m ³)
Zinc Chloride	7646-85-7	1	1
Ammonium Chloride	12125-02-9	10	10
Hydrochloric Acid	7647-01-0	not established (ne)	ne
Methanol	67-56-1	262 (skin)	260
Water	7732-18-5	ne	ne

Ingredients – Biological Limits: No biological exposure limits noted.

Engineering Controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Eye/Face Protection: Wear eye protection adequate to prevent eye contact with the product and injury from the hazards of product use.

Skin Protection: Wear protective gloves and clothing to prevent skin contact and injuries from the hazards of product use and/or for prolonged contact with the product. Avoid flammable fabrics.

Respiratory Protection: If an exposure level to a component(s) exceeds an applicable standard, use a NIOSH-approved respirator having a configuration (face piece, filter media, assigned protection factor, etc.) effective for the concentration of the component(s) generated. For guidance on selection and use of respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036, USA).

General hygiene: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and PPE to remove contaminants.

9. Physical and chemical properties

Appearance: liquid - clear	Odor: slightly sweet
Odor threshold: n/a	pH: n/a
Melting point: not established	Freezing point: n/a
Boiling point/boiling range: n/a	Flash Point: n/a
Evaporation Rate (nBuAc = 1): > 1	Flammability Class: n/a
Lower Explosive Limit: n/a	Upper Explosive Limit: n/a
Vapor pressure: n/a	Vapor density: n/a
Relative vapor density (air = 1): > 1	Solubility (H ₂ O): Insoluble
Oil-water partition coefficient: not determined	Auto ignition Point: n/a
Decomposition temperature: not determined	Viscosity: not determined
Specific gravity @ 20C (water = 1): 0.9	

10. Stability and reactivity

Reactivity: Non-reactive under normal conditions of use, storage and transport.

Stability: stable

Hazardous Polymerization: will not occur

Conditions to avoid: Contact with incompatible materials.

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

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

11. Toxicological information

Ingredients - Toxicological Data

Zinc chloride	DNA Inhibition System (human, lymphocyte) = 0.360 mmol/L TCLo (inhalation, man) = 4800 mg/m ³ /30 mins; pulmonary effects TCLo (inhalation, human) = 4800 mg/m ³ /3 hrs EPA-D (Not classifiable as to Human Carcinogenicity)
Hydrochloric acid	LCLo (inhalation, human) = 1300 ppm/ 30 minutes LCLo (inhalation, human) = 3000 ppm/ 5 minutes LDLo (unreported, man) = 81 mg/kg IARC-3 (Not classifiable as to carcinogenicity to humans)
Methanol	DNA Inhibition System (lymphocyte, human) 300 mmol/L LDLo (oral, man) = 6422 mg/kg; central nervous system, pulmonary, gastrointestinal effects TDLo (oral, man) = 3429 mg/kg; eye effects LDLo (oral, human) = 428 mg; central nervous system, pulmonary effects LDLo (oral, human) = 143 mg/kg; eye, pulmonary, gastrointestinal effects TDLo (oral, woman) = 4000 mg/kg; eye, pulmonary, gastrointestinal effects TCLo (inhalation, human) = 86000 mg/m ³ ; eye, pulmonary effects TCLo (inhalation, human) = 300 ppm; eye, central nervous system, pulmonary effects

Primary Route(s) of Entry: Ingestion; inhalation.

Eye Hazards: Causes serious eye damage.

Skin Hazards: Causes severe skin burns.

Ingestion Hazards: Causes digestive tract burns.

Inhalation Hazards: Prolonged inhalation may be harmful. May cause irritation to the respiratory system.

Symptoms Related to Overexposure: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Chronic Effects: Prolonged inhalation may be harmful.

Carcinogenicity: The product contains no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

Mutagenicity: Not reported to produce mutagenic effects in humans. Animal mutation data are available for Ammonium chloride, Methanol, Hydrochloric acid, and Zinc chloride.

Embryotoxicity: Not reported to cause embryotoxic effects in humans. Animal embryotoxic data are available for Zinc chloride.
Teratogenicity: Not reported to cause teratogenic effects in humans. Studies on test animals exposed to relatively high doses of Methanol and Zinc chloride indicate teratogenic effects.
Reproductive Effects: Not reported to cause reproductive effects in humans. Studies on test animals exposed to relatively high doses of Hydrochloric acid, Methanol, and Zinc chloride indicate reproductive effects.
Biological Exposure Index: Methanol (in urine) 15 mg/L (end of shift)

12. Ecological information

Ecological data for the components is as follows:

Hydrochloric acid	LC100 (trout) = 10 mg/L/ 24 hours LC50 (shrimp) = 100-330 ppm/ 48 hours(salt water) LC50 (starfish) = 100-300 mg/L/ 48 hours LC50 (cockle) = 330-1000 mg/L/ 48 hours TLm (Gambusia affinis, mosquito fish) = 282 ppm/ 96 hours/ fresh water LC50 (Carassium auratus, goldfish) = 178 mg/L (1-2 hour survival time) LC50 (shore crab) = 240 mg/L/ 48 hours LC (Lepomis macrochirus, bluegill sunfish) = 3.6 mg/L/ 48 hours LC50 (Lepomis macrochirus/bluegill sunfish) = pH 3.0-3.5/ 96 hours TLm (sunfish) = 96 hours/ pH 3.6/ 20C TLm (goldfish) = 96 hours/ pH 4/ 20C TLm (stickleback) = 96 hours/ pH 4.6/ 20C
Methanol	LC50 (Pimephales promelas, fathead minnow) = 29.4 mg/L/ 96 hours
Zinc chloride	Acute Hazard Level Threshold: For fish - 0.1 ppm (Zn) Odorless zinc poisoning causes inflamed gills in fish. Laboratory studies of Atlantic salmon, rainbow trout, carp, and goldfish have shown avoidance reactions by these fish to zinc in water. Radioactive zinc (65Zn) has been found to concentrate in aquatic life.

Ecotoxicity: Very toxic to aquatic life. May be harmful to plant and animals.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available

Other adverse effects: Large releases of this product may be harmful or fatal to exposed aquatic life.

13. Disposal considerations

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Consult applicable Federal, State/ Provincial, and local regulations.

14. Transport information

DOT, IATA, IMDG: Corrosive liquids, n.o.s.

Transport Canada: Considered as dangerous goods

15. Regulatory information

United States Regulatory Information

All components of this product are listed on the EPA's TSCA inventory.

SARA Hazard Classes: Acute Health Hazard; Chronic Health Hazard

SARA Section 304 (40 CFR Table 302.4) Notification: Ammonium chloride, Hydrochloric acid, Methanol, Zinc chloride.

SARA Section 313 (40 CFR 372.65) Notification: Hydrochloric acid, Methanol, Zinc chloride (as Zinc compound).

Proposition 65 (California):

- Chemicals known to cause cancer: none
- Chemicals known to cause reproductive toxicity for females: none
- Chemicals known to cause reproductive toxicity for males: none
- Chemicals known to cause developmental toxicity: none

Components are listed under various State regulations.

Canadian Regulatory Information

All components of this product are listed on either the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).
WHMIS Class(es) and Division(s): D1B , E

16. Other information including information on preparation and revision of the SDS

<u>NFPA Ratings for Product</u>	<u>HMIS Ratings for Product (Legend)</u>
Health - 3	Health - 3 (serious, chronic hazard)
Flammability - 0	Flammability – 0 (minimal hazard)
Reactivity - 0	Physical Hazard – 0 (minimal hazard)

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Disclaimer

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Aufhauser Corporation