

NOVACAN

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) and UN GHS Rev 6

Revision date: Oct 29, 2019

NOVACAN OLD MASTER'S FLUX

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SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

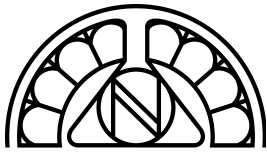
- 1.1 Product identifier:**
Trade name: **NOVACAN OLD MASTER'S FLUX**
- 1.2 Relevant identified use of the solution and uses advised against:**
A soldering flux used in the stained glass trade.
- 1.3 Manufacturer Identification and address:**
Novacan Industries Ltd
856 Washington Drive
Port Moody, BC V3H 3K8
Canada
Phone: 1.604.931.6422
E-Mail: info@novacan.net
- 1.4 EMERGENCY TELEPHONE NUMBER:**
For spill, leak, fire or exposure call 24 HR Emergency Phone#:
CANUTEC 1.613.996.6666

SECTION 2 HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**

Classification according to Regulation	Hazard Classification
OSHA Hazard Communication Standard and United Nations GHS Rev 6	Acute Oral Toxicity - Category 5 Serious Eye Damage / Eye Irritation - Category 2B Skin Corrosion / Irritation - Category 3 Acute Short Term Aquatic Hazard - Category 3 Chronic Long Term Aquatic Hazard - Category 4

- 2.2 Label elements:**
Hazard pictograms:
Not required.
- 2.3 Signal word:**
Warning



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Hazard statements:

- H303 May be harmful if swallowed.
- H316 Causes mild skin irritation.
- H320 Causes eye irritation.
- H402 Harmful to aquatic life
- H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements:

- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.
- P312 Call a POISON CENTER / doctor if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice / attention.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice / attention.
- P405 Store locked up.
- P501 Dispose of contents / container at an approved waste disposal facility.

2.3 Other relevant information and hazards overview:

Physical Description: Transparent medium green liquid. Viscosity of water. Odorless.

Health Hazard: The solution is corrosive and exposure may moderately irritate skin.
May moderately to severely irritate eyes.
Mucous membranes and sensitive skin can be irritated by exposure.

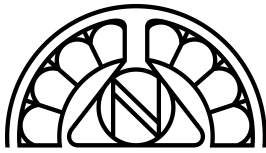
Fire Hazard: Not a known fire hazard.

Physical Hazard: Solution does pose a physical hazard in emergency response circumstances.

Environmental Hazard: Solution is harmful or fatal to both aquatic and animal life.

NFPA Ratings:

HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
SPECIFIC HAZARD	N/A



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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances or Mixtures:
See 3.2 Mixtures below.

3.2 Mixtures:

Description of the mixture:

Aqueous dilute solution of Zinc Chloride

Hazardous ingredients:

Substance name	CAS No.	Concentration % w/w
Zinc Chloride Anhydrous	7646-85-7	12 – 18
Water	7732-18-5	Balance

Note:

An aqueous solution with ingredients that are below reportable limits of $\geq 1\%$ concentration under various regulations governing Safety Data Sheets. (or less than 0.1% concentration for carcinogens, reproductive toxins, respiratory sensitizers and mutagens).

SECTION 4 FIRST AID MEASURES.

4.1 Description of first aid measures.

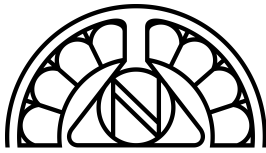
Routes of Entry: (under normal conditions of use)

Skin Contact: Minor **Eye Contact:** Moderate **Ingestion:** Moderate **Inhalation:** Minor

Eye Contact: Flush contaminated eye(s) with lukewarm, gently running water for 30 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists. An allergic reaction may appear as redness and/or puffiness.

Skin Contact: Wash affected area with mild soap and water. If irritation persists, seek medical attention / advice. Remove any contaminated clothing and launder before re-use.

Inhalation: If victim has been exposed to vapour, remove to fresh air. If breathing has stopped, a trained person should perform artificial respiration. Get immediate medical attention.



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Ingestion: If a small amount has been ingested, DO NOT induce vomiting. Dilute contents of stomach with 1- 2 glasses of water. If a large amount has been ingested, contact a Poison Centre and seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed:

Acute: Exposure to eyes may cause severe cornea injury and result in permanent impairment of vision or even blindness. Do not wear contact lenses. Overexposure can cause irritation to mucous membranes and sensitive skin.
If swallowed, solution can result in severe gastrointestinal irritation leading to nausea and vomiting.

Chronic: Repeated skin exposure can lead to dermatitis.

4.3 Indication of any immediate medical attention and special treatment needed.

Eye contamination: Gently flush eyes immediately with water for 15 minutes.
Remove contact lenses, if present and easy to do, and continue to irrigate eyes until medical assistance arrives.

Ingestion: Rinse mouth and dilute contents of stomach with up to 200 ml of water.
DO NOT induce vomiting.

SECTION 5 FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: No specific media is recommended. Use water, foam, dry powder, carbon dioxide, halon or others.

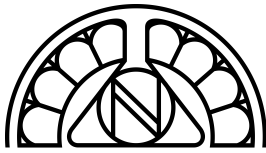
Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture.

Hazardous combustion products: May release zinc oxide fumes, zinc chloride fumes, or hydrogen chloride gas in a fire.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

HEALTH	Short exposure could cause temporary or residual injury.
FLAMMABILITY	Not Flammable
REACTIVITY	Normally stable but can become unstable at elevated temperatures.
SPECIFIC HAZARDS	Corrosive



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- 5.3 Advice for fire-fighters:** This solution is a corrosive liquid. May release zinc oxide fumes, zinc fumes, or hydrogen chloride gas in a fire.
Prevent run-off water from entering storm drains, bodies of water or other environmentally sensitive areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

For small spills under 1 gallon, wear appropriate personal protective equipment, rubber gloves and safety glasses. Ventilate area. Absorb spilled solution with absorbent pad or other suitable absorbent material.

For emergency responders:

For spills over 1 gallon, wear rubber gloves, safety glasses or goggles, chemical resistant coveralls or apron, rubber boots and an approved respirator. Absorb spilled solution with absorbent pads or other suitable absorbent material.

6.2 Environmental precautions:

Implement spill control plan. Stop or reduce leak if safe to do so. Prevent from entering sanitary or storm sewers, waterways, or confined spaces. Use inert materials such as earth or sand to form dike. Keep from contacting aquatic life.

6.3 Methods and material for containment and cleaning up:

If spill is large enough to require containment, use inert materials such as earth or sand to form a containment dike. Absorb spilled solution with absorbent pads or other suitable material.

6.4 Reference to other sections:

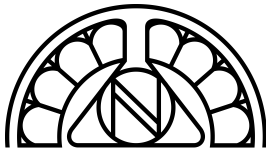
See SECTION 8 for exposure levels and detailed personal protective equipment recommendations.

See SECTION 13 for waste handling guidelines.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling:

Persons using this product must become familiar with the potential hazards associated with the product and take precautions to ensure its safe use. Be prepared in advance to take the required remedial action if there is a health exposure or a spill. Have emergency equipment readily available. Keep containers closed and in a secure location when not in use. Keep out of reach of children.



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Advice on general occupational hygiene:

Do not to eat, drink or smoke in the vicinity where this product is used.
Avoid contact with skin or eyes. Do not rub eyes with hands that have been exposed to the solution.
Avoid inhalation of vapours. Use in a well ventilated area.
Wash hands with soap and water after use, and before eating, drinking or smoking.
Remove contaminated clothing before entering eating areas.
Launder contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated area, out of direct sunlight and away from heat sources.
Keep storage area separate from areas of food and drink. Ensure containers are correctly labeled and not damaged. Ensure caps are tightly closed to prevent venting of vapours.

7.3 Specific end uses:

This product is intended as a flux for soldering metals used in the stained glass trade.
It is sometimes used in off-label applications suitable to the user by experimentation.

Keep product away from children, animals and aquatic life.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters:

Occupational exposure limits:

Substance	ACGIH	OSHA	NIOSH
Zinc Chloride Anhydrous	TLV 1 mg/m ³ STEL 3 mg/m ³ as fume	PEL 1 mg/m ³ as fume	TLV 1 mg/m ³ STEL 2 mg/m ³

BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS: Not established

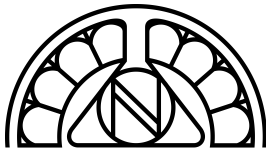
DERIVED NO EFFECT LEVEL (DNEL): Not established

PREDICTED NO EFFECT CONCENTRATION (PNEC): Not established

8.2 Exposure controls:

Engineering Controls: None needed under normal conditions of use. If there is a concern about exposure, use general or local exhaust ventilation to maintain exposure below the exposure limits. Safety showers, eye wash stations and hand-washing facilities should be available.

Respiratory Protection: None needed under normal conditions of use. If respiratory protection is required, NIOSH recommends a chemical cartridge respirator with inorganic acid cartridge.



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Hand Protection: Neoprene gloves should be used for spill response. Latex gloves are sufficient for general use.

Eye Protection: Eye protection is required. Chemical safety goggles are recommended. Wearing of contact lenses is not recommended.

Body Protection: Use protection suitable to the task, such as lab coat, chemical apron or coveralls.

Footwear: As required by worksite rules.

Other: Have a safety shower and eye wash station readily available in the immediate work area.

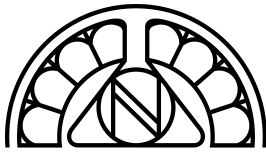
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

- **Appearance:** Clear medium green liquid
- **Odor:** Odorless
- **Odor Threshold:** Not determined
- **pH:** 4
- **Freezing Point:** < °C
- **Boiling Point:** 102°C
- **Flash Point:** Not Flammable
- **Evaporation Rate:** Not Determined
- **Flammability:** Not Flammable
- **Upper / Lower Flammability or explosive limit:** Not Applicable
- **Vapor Pressure:** Not determined
- **Vapor Density:** Not determined
- **Relative Density:** 1.14 (water = 1)
- **Solubility:** Completely soluble in water
- **Partition Coefficient:** No data
- **Auto Ignition Temperature:** N/A
- **Decomposition Temperature:** N/A
- **Viscosity:** same as water

SECTION 10 STABILITY AND REACTIVITY

- 10.1 Reactivity:** Not reactive under typical conditions of use.
- 10.2 Chemical stability:** Normally stable under standard temperatures and pressure.
- 10.3 Possibility of hazardous reactions:** Reactive in contact with incompatible materials listed below. Hazardous Polymerization will not occur.
- 10.4 Conditions to avoid:** Avoid contact with incompatible materials listed below.
- 10.5 Incompatible materials:** Cyanides and sulfides.
- 10.6 Hazardous decomposition products:** May liberate zinc oxide fume, zinc chloride fumes, or hydrogen chloride gas.



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SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute Toxicity:

The theoretical The LD₅₀ (rat/oral) for Old Master's Soldering Flux is > 2000 mg/kg

The following additional data is offered for the full concentration of the listed components that comprise this mixture. The actual percentage of the components used in the mixture is shown in Section 3.

CHEMICAL	DERMAL	EYES	INHALATION	ORAL
Zinc Chloride Anhydrous	Not Listed	Not Listed	Not Listed	LD ₅₀ Oral (Rat) 350 mg/kg as Zinc Chloride

Additional Acute Toxicity: Contact with material or fumes may cause skin, eye and respiratory tract irritation

Skin: May cause skin irritation.

Eye: Causes severe eye irritation and possibly burns. May cause irreversible eye injury.

Ingestion: Harmful if swallowed. May cause damage to the digestive tract. May cause gastrointestinal tract irritation.

Inhalation: May cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath, and delayed lung edema.

Chronic Toxicity: Chronic Potential Health Effects:

Inhalation: Prolonged or repeated exposure may cause respiratory damage

Skin: Prolonged or repeated skin contact may cause dermatitis, an allergic skin reaction.

Carcinogenicity:

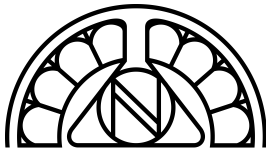
Not listed as a carcinogen by OSHA, ACGIH and IARC.

Reproductive Toxicity Information: Tests in some animals indicate this chemical may have embryotoxic activity.

Mutagenicity: Tests in bacterial or mammalian cell cultures demonstrate mutagenic activity.

Specific target organ toxicity (single exposure):

Chronic exposures can result in permanent liver, kidney and respiratory system effects. Studies show that health risks vary by individual. Minimize exposure as a precaution.



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STOT SE: May cause severe eye damage. May cause irritation to skin and mucous membranes. Ingestion in large quantity may compromise multiple organs.

Specific target organ toxicity (repeated exposure):

STOT RE: Prolonged or repeated exposure may cause permanent liver, kidney, and respiratory damage.

SECTION 12 ECOLOGICAL INFORMATION

- 12.1 Toxicity:** Zinc Chloride is a Marine Pollutant. This product is harmful to both animal and plant life.
- 12.2 Persistence and degradability:** The components of this product will biodegrade, dissipate via oxidation, or chemically decompose via solar radiation
- 12.3 Bioaccumulative potential:** No data available
- 12.4 Mobility in soil:** Although this product is expected to have limited mobility in soil, it could migrate to ground water.
- 12.5 Results of PBT and vPvB assessment:** No data available.
- 12.6 Other adverse effects:** No data available.

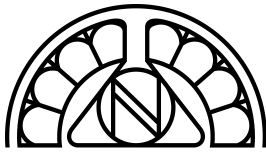
SECTION 13 DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods:** Contain all products of a hazard spill in non-metal containers, and transport to an approved waste disposal facility that complies with all state and federal regulations for hazardous waste disposal.

SECTION 14 TRANSPORT INFORMATION

Dangerous Goods Description and Transport Information:

- 14.1 DOT Hazardous Materials Shipping Regulations 49 CFR**
Not regulated for transport.
- 14.2 International Marine Organization (IMO) Hazardous Materials Shipping Regulations**
Not regulated for transport.



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14.3 International Air Transport Association (IATA) Hazardous Materials Shipping Regulations

Not regulated for transport.

14.4 European Agreement Concerning The Carriage of Dangerous Goods by Road (ADR):

Not applicable.

14.5 Environmental Hazards: Zinc chloride is a Marine Pollutant

14.6 Special precautions for users: Not applicable

14.7 Transport in bulk: Not applicable.

SECTION 15 REGULATORY INFORMATION

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

U.S. Regulations:

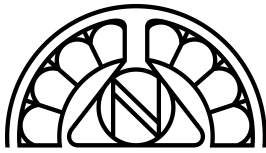
- OSHA, 29 CFR 1910, Subpart Z: Meets the criteria for a hazardous substance.
- TSCA (Toxic Substance Control Act): All components are listed in the inventory.
- CERCLA, 40 CFR 302: Reportable Quantities, Zinc chloride, 454 Kg (1000 Lbs).
- SARA 302, 40 CFR 355: Not listed.
- SARA 313, 40 CFR 372: Not listed.
- SARA 311/312, 40 CFR 370: Immediate (Acute) Health, Delayed (Chronic) Health.

SECTION 16 OTHER INFORMATION

16.1 Indication of changes: Original authored May 20, 2016

16.2 Abbreviations and acronyms:

- OSHA** - Occupational Safety and Health Administration
- GHS** - Globally Harmonized System
- CAS#** - Chemical Abstract Service Number
- NFPA** - National Fire Protection Association
- ACGIH** - American Conference of Government Industrial Hygienists
- TWA** - Time Weighted Average
- TLV** - Threshold Limit Value



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STEL - Short Term Exposure Limit

PEL - Personal Exposure Limit

NIOSH - National Institute of Occupational Safety and Health

SE - Single Exposure

RE - Repeated Exposure

STOT - Specific Target Organ Toxicity

mg/m³ - Milligrams per cubic metre

ppm - Parts per Million

LD50 - The lethal dose which is fatal to 50% of the specified test subjects, by the specified means of entry.

SARA - Superfund Amendment and Reauthorization Act

CERCLA - Comprehensive Environmental Response Compensation and Liability Act

TSCA - Toxic Substance Control Act

CFR - Code of Federal Regulations

16.3 Key literature references and sources for data:

OSHA - Occupational Safety & Health Administration, Hazard Communication Standard
29 CFR 1910.1200

UNECE - United Nations Economic Commission for Europe
Globally Harmonized System of Classification and Labelling on Chemicals
GHS - Sixth Edition 2015 (Purple Book)

Code of Federal Regulations - Title 49, Subtitle B, Chapter 1, Subchapter C, Part 171 to 177