



NOVACAN

Safety Data Sheet

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

Revision date: Oct 29,2019

NOVACAN BLACK PATINA FOR LEAD & SOLDER

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SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier:

Trade name: **NOVACAN BLACK PATINA FOR LEAD & SOLDER**

1.2 Relevant identified use of the solution and uses advised against:

A wipe-on metal finishing solution to darken lead and/or solder metal 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 1 Skin Irritation / Corrosion - Category 3 Serious Eye Damage - Category 1 Acute Inhalation Toxicity - Category 5 Specific Target Organ Toxicity, Single Exposure - Category 1 Specific Target Organ Toxicity, Repeat Exposure - Category 2 Acute Short Term Aquatic Hazard - Category 1 Chronic Long Term Aquatic Hazard - Category 1 |



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2.2 Label elements: Hazard pictograms



Signal word:
Danger

Hazard statements:

- H300 Fatal if swallowed.
- H316 Causes mild skin irritation.
- H318 Causes serious eye damage.
- H333 May be harmful if inhaled.
- H370 Causes damage to organs: gastrointestinal tract, mucous membranes, eyes.
- H373 May cause damage to organs through prolonged or repeated exposure: to skin, respiratory membranes, kidney, liver.
- H401 Toxic to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

- P101 If medical advice is needed, have product container and SDS at hand.
- P102 Keep out of reach of children.
- P233 Keep container tightly closed.
- P260 Do not breathe vapours or spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves and eye protection.
- P301+P310+P321 IF SWALLOWED: Immediately call a POISON CENTER / doctor. Get immediate gastric lavage with a cuffed endotracheal tube.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P311 IF exposed or concerned: Call a POISON CENTER
- P330+P331 Rinse mouth. DO NOT induce vomiting.
- P332+P313 If skin irritation occurs: Get medical advice / attention.
- P362+P364 Take off contaminated clothing and wash before reuse.
- P314 Get medical attention / advice if you feel unwell
- P405 Store locked up.
- P501 Dispose of contents / container at an approved waste disposal facility.



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2.3 Other relevant information and hazards overview:

Physical Description: Transparent light blue liquid. Viscosity of water. Odorless.

Health Hazard: Ingestion may be fatal, particularly in children where the dose to body-weight ratio presents an increased risk.

Eye exposure causes severe corneal irritation or chemical burn that can result in permanent eye damage or blindness.

Skin exposure may severely irritate or chemically burn mucous membranes and sensitive skin.

Fire Hazard: Solution is not a known fire hazard.

Physical Hazard: Does not pose a physical hazard in emergency response circumstance.

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

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 Nitric Acid & Copper Sulfate.

Hazardous ingredients:

| Substance name | CAS No. | Concentration % w/w |
|------------------------------|-----------|---------------------|
| Nitric Acid | 7697-37-2 | 5 – 9 |
| Copper Sulphate Pentahydrate | 7758-99-8 | 2 – 4 |
| Sodium Chloride | 7740-23-5 | 2 – 5 |
| Selenium Dioxide | 7746-08-4 | 0.05 – 1 |
| Water | 7732-18-5 | Balance |

Note:

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



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SECTION 4 FIRST AID MEASURES

4.1 Routes of Entry: (under normal conditions of use)

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

Description of first aid measures

Eye Contact: Flush contaminated eye(s) with lukewarm gently running water for 30 minutes, holding eyelids open. Seek immediate medical attention.

Skin Contact: Wash affected area immediately with mild soap and water and continue for for 15 minutes. If irritation persists, seek medical attention. 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 medical attention if you feel unwell.

Ingestion: Ingestion by a child is a severe fatality risk due to a high dose to body-weight ratio. Get IMMEDIATE medical attention for gastric lavage with a cuffed endotracheal tube.

If a small amount has been ingested, DO NOT induce vomiting. Dilute contents of stomach with 1- 2 glasses of water and seek medical attention / advice.

If a large amount has been ingested, get IMMEDIATE medical attention for gastric lavage with a cuffed endotracheal tube.

If vomiting occurs naturally, have patient lean forward to reduce the risk of aspiration. Contact a POISON CENTER / doctor for immediate medical attention.

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

Acute: Exposure to eyes is likely to result in severe irritation that could lead to permanent eye damage if not treated immediately. Overexposure can result in chemical burns to mucous membranes and sensitive skin. If swallowed, solution can result in severe gastrointestinal irritation leading to nausea and vomiting. Ingestion of a large volume may be fatal.

Chronic: Repeated skin exposure can lead to dermatitis. Chronic exposure to Selenium Dioxide may cause central nervous system effects, gastrointestinal disturbance, pallor and garlic breath, metallic taste, anemia, liver and spleen damage. Chronic selenium poisoning can result in loss of hair and nails, skin lesions and central nervous system damage.



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

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

Ingestion: Ingestion by a child is a severe fatality risk due to a high dose to body-weight ratio.
Get IMMEDIATE medical attention for gastric lavage with a cuffed endotracheal tube.

If a small amount has been ingested, DO NOT induce vomiting. Rinse mouth and contents of stomach with 1- 2 glasses of water, and seek medical attention / advice.
If a large amount has been ingested, get IMMEDIATE medical attention for gastric lavage with a cuffed endotracheal tube.
If vomiting occurs naturally, have patient lean forward to reduce the risk of aspiration.
Contact a POISON CENTER / doctor for immediate medical attention.

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 : Nitrogen oxides, toxic selenium and hydrogen selenide fumes, and if heated to dryness, copper fumes may be produced.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

| | |
|------------------|---|
| HEALTH = 3 | Very short exposure could cause serious temporary or residual injury requiring immediate attention. |
| FLAMMABILITY = 0 | Not Flammable |
| REACTIVITY = 2 | Normally stable, but reacts with incompatible material. |
| SPECIFIC HAZARDS | Corrosive, oxidizing material |

5.3 Advice for fire-fighters.

This solution is a corrosive liquid. Wear appropriate personal protection equipment.



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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. Do not touch spilled product without proper personal protection. Neutralize with soda ash, sodium bicarbonate or lime, but be aware this will cause an exothermic reaction. Absorb spilled solution with non-combustible 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 a respirator with an organic acid vapour cartridge. Absorb spilled solution with non-combustible absorbent pad 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. Neutralize the absorbed materials with soda ash, sodium bicarbonate or lime and collect in sealed containers for disposal at an approved waste disposal facility. Decontaminate the spill area with a neutralizing solution of soda ash or sodium bicarbonate.

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.
- Laundry 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. Store away from incompatible materials such as oxidizing materials, reducing materials, and strong bases. Keep storage area separate from populated work areas, and display warning signs to inform of the contents of the area. 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 an antiquing agent for use on lead and solder metals used in the stained glass trade. It is sometimes used in off-label applications to obtain unique results when applied to other metals 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 |
|------------------|--|---------------------------------------|--|
| Nitric Acid | TLV 2ppm - 5 mg/m ³ STEL 4ppm - 10 mg/m ³ | PEL 2 ppm 5 mg/m ³ | REL 2 ppm - 5 mg/m ³ STEL 4 ppm - 10 mg/m ³ |
| Copper Sulfate | TLV 1 mg/m ³ as copper | PEL 1 mg/m ³ as copper | REL 1 mg/m ³ as copper |
| Sodium Chloride | TLV 1 mg/m ³ STEL 2 mg/m ³ | TLV 1 mg/m ³ | REL 1 mg/m ³ STEL 2 mg/m ³ |
| Selenium Dioxide | TLV 0.2 mg/m ³ as selenium | PEL 0.2 mg/m ³ as selenium | REL 0.2 mg/m ³ as selenium |

BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS: Not established

DERIVED NO EFFECT LEVEL (DNEL): Not established

PREDICTED NO EFFECT CONCENTRATION (PNEC): Not established



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8.2 Exposure controls:

Engineering Controls: None needed under normal conditions of use. 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 use a NIOSH cartridge respirator with inorganic acid vapor cartridges.

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 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 blue liquid
- **Odor:** Acrid
- **Odor Threshold:** Not determined
- **pH:** < 1
- **Freezing Point:** - 20°C
- **Boiling Point:** 104°C
- **Flash Point:** Not Determined
- **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:** 1.08 (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.



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- 10.4 Conditions to avoid:** Avoid contact with incompatible materials listed below.
- 10.5 Incompatible materials:** Very corrosive to most metals, that could produce flammable hydrogen gas. Reacts violently with bases to produce heat. Reacts with reducing agents to produce heat, fire and flammable hydrogen gas. Reacts with oxidizing agents to produce heat. Reacts with carbides, turpentine, phosphorus hydrogen sulphide, organic materials, and alkalis. Contact with explosives may cause detonation. Reacts with cyanides to produce toxic cyanide gas, and sulphides to produce toxic hydrogen sulphide gas.
- 10.6 Hazardous decomposition products:** Thermal decomposition liberates toxic corrosive fumes of nitrogen oxides, hydrogen nitrate, copper oxides, hydrogen selenide, and selenium fumes.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute Toxicity:

The theoretical LD₅₀ (rat/oral) for Novacan Black Patina is 1913 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 |
|------------------|----------------------------|---------------|---------------------------|---------------------------|
| NITRIC ACID | Not Listed | Not Listed | LC50 = 2500 ppm. (Rat) 1h | LDLo Oral Human 430mg/kg |
| COPPER SULFATE | LD50 (Rabbit) > 1000 mg/kg | Not Listed | Not Listed | LD50 Oral (Rat) 300 mg/kg |
| SODIUM CHLORIDE | Not Available | Not Available | Not Available | LD50 Oral (Rat) 350 mg/kg |
| SELENIUM DIOXIDE | Not Available | Not Available | Not Available | LD50 Oral (Rat) 0.2 mg/kg |

Additional Acute Toxicity: Ingestion of Selenious Acid from Selenium Dioxide is usually fatal. Stupor, respiratory depression, hypotension and death can follow several hours after ingestion. Severe hypotension develops secondary both to decreased contractility from a toxic cardiomyopathy and to inappropriately low peripheral vascular resistance. Laboratory abnormalities include thrombocytopenia, moderate hepatorenal dysfunction, and elevated serum kinase levels.

Chronic Toxicity:

Carcinogenicity: None of the components that comprise this mixture is classified as a carcinogen by the following agencies. EPA, IARC, NTP, OSHA or ACGIH



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Reproductive Toxicity Information: The components of this mixture are not reported to cause harmful reproductive effects under normal exposure circumstances.

Specific target organ toxicity (single exposure):

STOT SE: Causes severe eye damage and possibly blindness. Causes burns to gastrointestinal tract, to skin and mucous membranes. Ingestion may compromise the kidney, liver, nervous system, and could be fatal.

Specific target organ toxicity (repeated exposure):

STOT RE: Prolonged or repeated exposure may cause tissue damage, respiratory tract irritation, teeth damage and nervous system problems.

SECTION 12 ECOLOGICAL INFORMATION

- 12.1 **Toxicity:** This product is toxic to both plant and animal 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:** Selenium accumulates or concentrates in living tissue. Fish are known to bioaccumulate selenium.
- 12.4 **Mobility in soil:** This product is expected to have limited mobility in soil.
- 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 approved containers, and transport to an approved hazardous waste disposal facility that complies with all local, state and federal regulations.



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SECTION 14 TRANSPORT INFORMATION

Dangerous Goods Description and Transport Information:

14.1 DOT Hazardous Materials Shipping Regulations 49 CFR

| UN Number | Proper Shipping Name | Hazard Class | Packing Group | Label | North American Emergency Response Guide # | Marine Pollutant Status |
|-----------|---|--------------|---------------|-----------|---|---|
| UN 3264 | Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid, copper sulfate) | 8 | II | Corrosive | 154 | Copper Sulfate is a severe Marine Pollutant |

Limited Quantity Exception [49 CFR 173.154(b)(1)]: Limited quantities for Class 8, Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids, packed in a strong outer packaging.

14.2 International Marine Organization (IMO) Hazardous Materials Shipping Regulations

| UN# & Proper Shipping Name | Limited and Excepted Quantity Provisions | | Packing | | EmS | Marine Pollutant Status |
|--|--|---------------------|--------------|------------|---------|---|
| | Limited Quantities | Excepted Quantities | Instructions | Provisions | | |
| UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid, copper sulfate) | 1 Litre | E1 | P001 LP01 | 1 Litre | FA - SB | Copper Sulfate is a severe Marine Pollutant |

Limited Quantity Exception: Limited quantities for Class 8, Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids, packed in a strong outer packaging.



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

| UN# & Proper Shipping Name | Passenger and Cargo Aircraft | | | | Cargo Aircraft Only | |
|--|------------------------------|-------|-----------------------|----------------|-----------------------|----------------|
| | Limited Quantity | | Packaging Instruction | Max Qty / Pkge | Packaging Instruction | Max Qty / Pkge |
| Packaging Instruction | Max Qty / Pkg | | | | | |
| UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid, copper sulfate) | Y840 | 0.5 L | 851 | 1 L | 851 | 1 L |

14.4 **European Agreement Concerning The Carriage of Dangerous Goods by Road (ADR):**
Not applicable.

14.5 **Environmental Hazards:** Copper Sulfate is a severe 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, Cupric sulphate 4.54 Kg (10 Lbs), Nitric acid, 454 Kg (1000 Lbs), Selenium dioxide 4.54 Kg (10 Lbs)
- **SARA 302, 40 CFR 355:** Sulfuric Acid listed. Threshold Planning Quantity 454 Kg (1000 Lbs)
- **SARA 313, 40 CFR 372:** Sulfuric Acid is subject to the reporting requirements.
- **SARA 311/312, 40 CFR 370:** Immediate (Acute) Health, Delayed (Chronic) Health.



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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

STEL - Short Term Exposure Limit

PEL - Personal Exposure Limit

NIOSH - National Institute of Occupational Safety and Health

SE - Single Exposure

RE - Repeated Exposure

STOTL - 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 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