

NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 1 of 13

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier:

Trade name: **NOVACAN SUPERBRITE COPPER PATINA**

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

A wipe-on metal finishing solution to obtain a copper finish on 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#:
CANUTECH 1.613.996.6666

SECTION 2 HAZARDS IDENTIFICATION

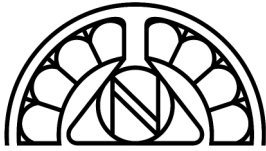
2.1 Classification of the substance or mixture:

Classification according to Regulation	Hazard Classification
OSHA Hazard Communication Standard and United Nations GHS Rev 6	Acute Oral Toxicity – Category 5 Skin Irritation / Corrosion - Category 3 Serious Eye Damage - Category 1 Acute Short Term Aquatic Hazard - Category 1 Chronic Long Term Aquatic Hazard - Category 2

2.2 Label elements:

Hazard pictograms





NOVACAN

Safety Data Sheet

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

NOVACAN SUPERBRITE COPPER PATINA

Revision date: May 20, 2016

Page 2 of 13

Signal word:

Danger

Hazard statements:

- H303 May be harmful if swallowed.
- H316 Causes mild skin irritation.
- H318 Causes serious eye damage.
- H400 Very toxic to aquatic life
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

- P273 Avoid Release to the environment.
- P280 Wear protective gloves / protective clothing / eye protection / face protection.
- P310 Immediately call a POISON CENTER / doctor.
- P312 Call a POISON CENTER / doctor if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical attention / advice.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P391 Collect spillage
- P501 Dispose of contents / container to an approved hazardous waste disposal facility.

2.3 Other relevant information and hazards overview:

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

Health Hazard: The solution is corrosive and causes severe eye burns that may lead to permanent blindness.
Mucous membranes and sensitive skin and can be damaged by exposure.
Skin exposure may cause moderate to severe irritation or burns.
Vapour or mist may cause redness, irritation or burns if contact is prolonged.

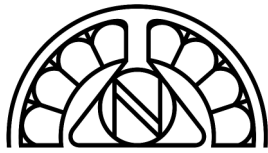
Fire Hazard: Not a known fire hazard.

Physical Hazard: Solution does not pose a physical hazard in emergency response.

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

NFPA Ratings:

HEALTH	3
FLAMMABILITY	0
REACTIVITY	0
SPECIFIC HAZARD	N/A



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 3 of 13

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 Copper Sulfate and Sulfuric Acid.

Hazardous ingredients:

Substance name	CAS No.	Concentration % w/w
Copper Sulphate Pentahydrate	7758-99-8	8 – 12
Sulfuric Acid	7664-93-9	5 – 7
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)

SECTION 4 FIRST AID MEASURES

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

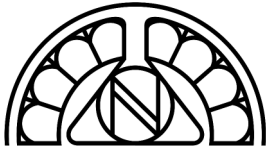
Skin Contact: Minor **Eye Contact:** Major **Ingestion:** Moderate **Inhalation:** Minor

Description of first aid measures:

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 immediate medical attention.

Skin Contact: Wash affected area immediately with mild soap and water. If irritation persists, 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.



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 4 of 13

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, call a POISON CENTER / doctor immediately for gastric lavage with a cuffed endotracheal tube. If vomiting occurs naturally, have patient lean forward to reduce the risk of aspiration.

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

Acute: Eye exposure is likely to result in severe irritation or burns that could lead to permanent eye damage or blindness if not treated immediately. Over exposure 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.

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 easy to do, and continue to irrigate eyes. Get immediate medical attention.

Ingestion: Rinse mouth and dilute contents of stomach with 1 - 2 glasses of water. DO NOT induce vomiting and do not attempt to neutralize due to creation of an exothermic reaction. Seek immediate medical attention / advice.

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.

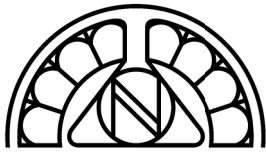
Un- suitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture.

Hazardous combustion products : Oxides of sulfur and hydrogen sulfide gas may be produced. If heated to dryness, copper fumes may be produced.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

HEALTH = 3	Exposure could cause serious temporary or residual injury requiring immediate attention.
FLAMMABILITY = 0	Not Flammable
REACTIVITY = 0	Normally stable
SPECIFIC HAZARDS	Corrosive, oxidizing material



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 5 of 13

5.3 Advice for fire-fighters.

This solution is a corrosive liquid. Fire may produce irritating and toxic fumes of copper and sulfur oxides. Contact with metal may generate flammable hydrogen gas. Wear self-contained breathing apparatus and full protective equipment, including eye protection and rubber boots.

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. 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 vapour cartridge.

Neutralize with soda ash, sodium bicarbonate or lime.

Absorb spilled solution with non-combustible 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 non-combustible 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.



Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 6 of 13

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.

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. 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:

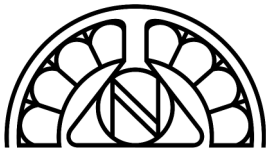
This product is intended as an antiquing agent for use on metal solder used in the stained glass trade.
It is sometimes used in off-label applications to obtain unique results when applied to other metals suitable to the user by experimentation.
Keep product away from children, animals and aquatic life.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters:

Occupational exposure limits:

Substance	ACGIH	OSHA	NIOSH
Copper Sulfate	TLV 1 mg/m ³ as copper	PEL 1 mg/m ³ as copper	REL 1 mg/m ³ as copper
Sulfuric Acid	TLV 0.2 mg/m ³ STEL 3 mg/m ³	PEL 1 mg/m ³	REL 1 mg/m ³ STEL 3 mg/m ³



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 7 of 13

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. 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 approved respirator with an inorganic acid vapor cartridge.

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 dark blue liquid
- **Odor:** Mild acrid odor
- **Odor Threshold:** Not determined
- **pH:** < 1
- **Freezing Point:** - 20°C
- **Boiling Point:** 214°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:** 1.06 (water = 1)
- **Solubility:** Completely soluble in water
- **Partition Coefficient:** No data
- **Auto Ignition Temperature:** N/A
- **Decomposition Temperature:** N/A
- **Viscosity:** same as water



Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 8 of 13

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:** Corrosive to most metals and may 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 reacts with sulphides to produce toxic hydrogen sulphide gas.
- 10.6 Hazardous decomposition products:** Thermal decomposition liberates toxic corrosive fumes of sulfur oxides, hydrogen sulfide gas and copper oxides.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

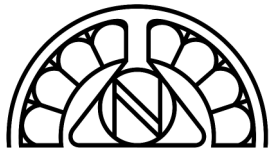
Acute Toxicity:

The theoretical LD₅₀ (rat/oral) for SuperBrite Copper Patina is 5128 mg/kg

The following additional data is provided 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
COPPER SULFATE	LD50 (Rat) > 2000 mg/kg	Not Listed	Not Listed	LD50 Oral (Rat) 300 mg/kg
SULFURIC ACID	Not Listed	Not Listed	LC50 (Rat) 510 mg/m ³	LD50 Oral (Rat) 2140 mg/kg

Additional Acute Toxicity: Extremely hazardous in case of eye contact (corrosive).
Extremely hazardous in case of inhalation (lung corrosive).
Hazardous in case of skin contact or ingestion.



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 9 of 13

Skin: Causes skin irritation.

Eye: Causes severe eye irritation and burns. May cause irreversible eye damage and blindness.

Ingestion: Harmful if swallowed. May cause permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the stomach, GI bleeding, edema of the glottis, necrosis and scarring, and sudden circulatory collapse (similar to acute inhalation). It may also cause systemic toxicity with acidosis.

Inhalation: May cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath, and delayed lung edema. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Cause corrosive action on mucous membranes. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). Circulatory collapse with clammy skin, weak and rapid pulse, shallow respiration, and scanty urine may follow. Circulatory shock is often the immediate cause of death. May also affect teeth (changes in teeth and supporting structures - erosion, discoloration).

Chronic Toxicity: Chronic Potential Health Effects:

Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and cardiovascular system, heart (ischemic heart lesions), and respiratory system/lungs(pulmonary edema, lung damage), teeth (dental discoloration, erosion).

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

Carcinogenicity: by agency.

OSHA	ACGIH	IARC
Proven	Classify A2 Suspected	Classify 1 Proven

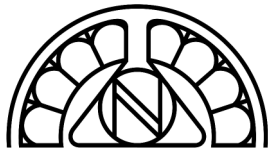
Reproductive Toxicity Information: The components of this mixture are not reported to cause harmful reproductive effects under normal exposure circumstances.

Specific target organ toxicity (single exposure):

STOT SE: May cause severe eye damage or blindness. Ingestion may cause damage to kidneys, lungs, heart, cardiovascular system, gastrointestinal tract and teeth. Inhalation may cause respiratory tract irritation or burns. May cause irritation to skin and mucous membranes.

Specific target organ toxicity (repeated exposure):

STOT RE: Prolonged or repeated inhalation exposure may cause damage to respiratory and gastrointestinal tracts.



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 10 of 13

SECTION 12 ECOLOGICAL INFORMATION

- 12.1 Toxicity:** Copper Sulfate is a severe Marine Pollutant. This product is toxic to both terrestrial and aquatic plants and animals.
- 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:** 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:** The product has a very low global warming potential and has no ozone depleting potential.

SECTION 13 DISPOSAL CONSIDERATIONS

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

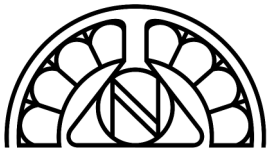
SECTION 14 TRANSPORT INFORMATION

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. (sulfuric 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.



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 11 of 13

14.2 International Marine Organization (IMO) Hazardous Materials Shipping Regulations

UN# & Proper Shipping Name	Limited and Excepted Quantity Provisions		Packing		EmS
	Limited Quantities	Excepted Quantities	Instructions	Provisions	
UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid, copper sulfate)	1 Litre	E1	P001 LP01	1 Litre	FA - SB

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.

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 / Pkg	Packaging Instruction	Max Qty / Pkg
Packaging Instruction	Max Qty / Pkg					
UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric 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.



Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 12 of 13

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), Sulfuric acid, 454 Kg (1000 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.

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
- 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



NOVACAN

Safety Data Sheet

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

Revision date: May 20, 2016

NOVACAN SUPERBRITE COPPER PATINA

Page 13 of 13

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