


Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards SDS Revision: 2.0 SDS Revision Date: 3/14/2017

1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	PATINA GREEN
1.2	Chemical Name:	Aqueous Solution
1.3	Synonyms:	740450, 740450INT, 740451, 740458
1.4	Trade Names:	Patina Green
1.5	Product Use:	For use on copper, brass & bronze
1.6	Distributor's Name:	Birchwood Laboratories LLC
1.7	Distributor's Address:	7900 Fuller Road, Eden Prairie, MN 55344 USA
1.8	Emergency Phone:	ChemTrec +1 (800) 424-9300 / +1 (703) 527-3887 or Poison Control Center +1 (855) 281-1742
1.9	Business Phone / Fax:	+1 (952) 937-7900 / +1 (952) 937-7979

2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	This product is classified as a hazardous substance but and as dangerous goods according to the classification criteria of [NOHSC: 1088 (2004)] and ADG Code (Australia). WARNING! MAY BE HARMFUL IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. Classification: Acute Tox. Dermal 5; Skin Irrit. 2; Eye Irrit. 2A	
2.2	Label Elements:	<p>Hazard Statements (H): H313 – May be harmful in contact with skin. H315 – Causes skin irritation. H319 – Causes serious eye irritation.</p> <p>Precautionary Statements (P): P261 Avoid breathing mist/sprays. P272 – Contaminated work clothing should not be allowed out of the workplace. P280 – Wear protective gloves/eye protection. P302+P352 – IF ON SKIN: Wash with plenty of soap and water. P333+P313 – If skin irritation or rash occurs: Get medical advice/attention. P321 – Specific treatment – see section 4 of this Safety Data Sheet. P363 - Wash contaminated clothing before reuse. P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 - Dispose of contents/container to licenses treatment, storage and disposal facility (TSDF).</p>	
2.3	Other Warnings:	In the event of an exposure or medical inquiry involving this product, please contact a physician or local poison control center, who may seek advice from the U.S. manufacturer, and show them this SDS. Keep out of reach of children.	

3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
WATER	7732-18-5	NA	231-791-2	60-100	NE	NE	NF	NF	NF	NE	NE	NE		
CUPRIC SULFATE	7758-99-8	GL8900000	231-847-6	5-10	NA	NA	NF	NF	NF	(1)	NA	NA	(1) NIOSH	
ACETIC ACID	64-19-7	AF1225000	200-580-7	1-5	NA	NA	NF	NF	NF	NA	NA	NA		

Flam. Liq. 3; Skin Corr. 1A; H226, H314

4. FIRST AID MEASURES

4.1	First Aid:	<p>Ingestion: DO NOT INDUCE VOMITING. Contact ChemTrec +1 (800) 424-9300 or the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p>Eyes: If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If the eyes or face become swollen during or following use, consult a physician or emergency room immediately.</p> <p>Skin: Remove contaminated clothing and wash affected areas with soap and water. If discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p>Inhalation: Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial respiration. Seek immediate medical attention.</p>
4.2	Effects of Exposure:	<p>Eyes: Severe irritation and possible burns.</p> <p>Skin: Severe irritation and possible burns. Possible sensitization with certain individuals.</p> <p>Ingestion: Severe burns of mouth, throat and stomach. Copper poisoning may cause kidney and liver damage. Possible symptoms include nausea, vomiting, abdominal pain, jaundice</p> <p>Inhalation: Severe irritation of respiratory tract and mucous membranes; coughing, difficulty breathing.</p>
4.3	Symptoms of Overexposure:	<p>Eyes: Redness, burning, irritation, and swelling around eyes. Possible burns.</p> <p>Skin: Redness, burning, itching, rash, and scaling of the skin (dermatitis).</p> <p>Ingestion: Nausea, vomiting, severe abdominal pain.</p> <p>Inhalation: Coughing, wheezing, swelling of throat, irritation in mucous membranes, difficulty breathing.</p>
4.4	Acute Health Effects:	Irritation or possible burns upon direct skin contact. Possible irreversible damage to eyes. Irritation and possible sensitization with certain individuals.

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4. FIRST AID MEASURES – cont'd

4.5	Chronic Health Effects:	Irritation and possible skin sensitization with certain individuals. Prolonged or repeated skin exposure may cause dermatitis.				
4.6	Target Organs:	Eyes, skin, lungs (severe irritant).				
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system).	HEALTH		2	
			FLAMMABILITY		0	
			PHYSICAL HAZARDS		0	
			PROTECTIVE EQUIPMENT			B
			EYES	SKIN		

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Non-flammable. Use media as appropriate for surrounding fire.	
5.2	Extinguishing Methods:	Carbon dioxide, foam, water spray, Halon (if permitted), dry chemical extinguisher.	
5.3	Firefighting Procedures:	As with any fire, firefighters should wear appropriate protective equipment including a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Hazardous decomposition products may be released. Thermal degradation may produce oxides of carbon, and/or nitrogen, hydrocarbons and/or derivatives. Fire should be fought from a safe distance. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.	



6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment (PPE). Use safety glasses or safety goggles and face shield; use gloves and other protective clothing (e.g., apron, boots, etc.) to prevent skin contact.</p> <p><u>Small Spills:</u> Wear appropriate protective equipment including gloves and protective eyewear. Use a non-combustible, inert material such as vermiculite or sand to soak up the product and place into a container for later disposal.</p> <p><u>Large Spills:</u> Keep incompatible materials (e.g., organics such as oil) away from spill. Stay upwind and away from spill or release. Isolate immediate hazard area and keep unauthorized personnel out of area. Stop spill or release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant. Recover as much free liquid as possible and collect in acid-resistant container. Use absorbent to pick up residue. Avoid discharging liquid directly into a sewer or surface waters.</p>	
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7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid breathing mists or spray. Avoid eye and skin contact. Wear protective equipment when handling product. Keep out of the reach of children. Do not eat, drink or smoke when handling this product. Wash thoroughly after handling. Immediately clean-up and decontaminate any spills or residues.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans) away from heat and direct sunlight. Keep away from incompatible substances (see Section 10). Protect containers from physical damage.
7.3	Special Precautions:	Empty containers may retain hazardous product residues.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

.8.1	Exposure Limits: ppm (mg/m ³)	CHEMICAL NAME(S)	ACGIH		NOHSC			OSHA			OTHER
			TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
		CUPRIC SULFATE	(1)	NA	NF	NF	NF	(1)	NA	1000	
8.2	Ventilation & Engineering Controls:	Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the handling of this product. Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).									
8.3	Respiratory Protection:	In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member States, or Australia (e.g., NIOSH approved respirator with full or half-face N95 cartridge)									
8.4	Eye Protection:	Safety glasses with side shields must be used when handling or using this product. A protective face shield is also recommended.									
8.5	Hand Protection:	Wear protective, chemical-resistant gloves (e.g., butyl rubber, neoprene, nitrile) when using or handling this product.									
8.6	Body Protection:	Not required under normal conditions of use are recommended when handling or using large quantities (e.g., > 5 gallons (18.9 L)) of this product.									

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Clear blue liquid.
9.2	Odor:	Vinegar-like odor.
9.3	Odor Threshold:	NA
9.4	pH:	1.0
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	> 100 °C (> 212 °F)
9.7	Flashpoint:	NA
9.8	Upper/Lower Flammability Limits:	LEL: NA; UEL: NA
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	> 1.0 (air = 1.0)
9.11	Relative Density:	1.06
9.12	Solubility:	Complete (water)
9.13	Partition Coefficient (log P _{ow}):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	Evaporation Rate: < 1.0 (ethyl ether = 1.0)

10. STABILITY & REACTIVITY

10.1	Stability:	Stable under normal storage and use conditions.
10.2	Hazardous Decomposition Products:	Thermal decomposition may produce carbon, potassium, sulfur and nitrogen oxides.
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Avoid high temperatures and incompatible materials.
10.5	Incompatible Substances:	Strong acids, water-reactive substances and metals such as aluminum and zinc.

11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: YES	Absorption: YES	Ingestion: NO
11.2	Toxicity Data:	Cupric Sulfate: LD ₅₀ (oral, rat) = 300 mg/kg; LD ₅₀ (dermal, rabbit) > 2,000 mg/kg; Acetic Acid: LD ₅₀ (oral, rat) = 525 mg/kg		
11.3	Acute Toxicity:	See Section 4.4		
11.4	Chronic Toxicity:	See Section 4.5		
11.5	Suspected Carcinogen:	NA		
11.6	Reproductive Toxicity:	This product is not reported to cause reproductive toxicity in humans.		
	Mutagenicity:	This product is not reported to produce mutagenic effects in humans.		
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.		
	Teratogenicity:	This product is not reported to cause teratogenic effects in humans.		
	Reproductive Toxicity:	This product contains Phenolphthalein suspected human reproductive toxicant.		
11.7	Irritancy of Product:	See Section 4.2		
11.8	Biological Exposure Indices:	NE		
11.9	Physician Recommendations:	Treat symptomatically.		

12. ECOLOGICAL INFORMATION


12.1	Environmental Stability:	Phosphates may persist indefinitely if released into groundwater.
12.2	Effects on Plants & Animals:	No data available.
12.3	Effects on Aquatic Life:	No data available.

13. DISPOSAL CONSIDERATIONS


13.1	Waste Disposal:	Review current local, state and federal laws, codes, statutes and regulations to determine current status and appropriate disposal method for the ingredients listed in Section 2. Any disposal practice must be in compliance with local, state, and federal laws and regulations. Contact the appropriate agency for specific information. Treatment, transport, storage and disposal of hazardous waste must be provided by a licensed facility or waste hauler.
13.2	Special Considerations:	U.S. EPA Waste Number D010.

14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 5.0 L)	
14.2	IATA (AIR):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 0.5 L)	
14.3	IMDG (OCN):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 5.0 L)	
14.4	TDGR (Canadian GND):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 5.0 L)	
14.5	ADR/RID (EU):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 5.0 L)	
14.6	SCT (MEXICO):	UN1760, LIQUIDOS CORROSIVOS, N.E.P. (acido acetico), 8, III, CANTIDAD LIMITADA (IP VOL ≤ 5.0 L)	
14.7	ADGR (AUS):	UN1760, CORROSIVE LIQUIDS, N.O.S. (acetic acid), 8, III, LTD QTY (IP VOL ≤ 5.0 L)	

15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product contains <u>Cupric Sulfate</u> , a substance subject to SARA Title III, section 313 reporting requirements.	
15.2	SARA TPQ:	NA	
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.	
15.4	CERCLA Reportable Quantity:	<u>Cupric Sulfate</u> : RQ 10 lbs (4.54 kg)	
15.5	Other Federal Requirements:	NA	
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDL. None of the components of this product are listed on the Priorities Substances List. WHMIS Class E (Corrosive Material). WHMIS Class D1 (Materials Causing Immediate and Serious Toxic Effects).	
15.7	State Regulatory Information:	<p><u>Acetic Acid</u> is found on the following state criteria lists: Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), Pennsylvania Right-to-Know List (PA), and Washington Permissible Exposures List (WA).</p> <p><u>Cupric Sulfate</u> is found on the following state criteria lists: MA, NJ, PA.</p> <p>None of the ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).</p> <p>WARNING! This product contains a chemical known to the State of California to cause cancer (phenolphthalein).</p>	
15.8	Other Requirements:	NA	

16. OTHER INFORMATION

16.1	Other Information:	<p>WARNING! MAY BE HARMFUL IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. Avoid breathing mist/sprays. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment – see section 4 of this Safety Data Sheet. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.</p> <p>WARNING! This product contains a chemical known to the State of California to cause cancer (phenolphthalein).</p>	
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.	
16.3	Disclaimer:	<p>This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & Birchwood Technologies' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.</p>	
16.4	Prepared for:	<p>Birchwood Technologies 7900 Fuller Road Eden Prairie, MN 55344 USA Tel: +1 (952) 937-7900 Fax: +1 (952) 937-7979 http://www.birchwoodtechnologies.com</p>	
16.5	Prepared by:	<p>ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com</p>	

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number
RTECS No.	Registry of Toxic Effects of Chemical Substances Number
EINECS No.	European Inventory of Existing Commercial Chemical Substances Number

EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
IDLH	Immediately Dangerous to Life and Health
NOHSC	National Occupational Health and Safety Commission (Australia)
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average

FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard

HEALTH
FLAMMABILITY
PHYSICAL HAZARDS
PERSONAL PROTECTION

PERSONAL PROTECTION RATINGS:

A	
B	
C	
D	
E	
F	

G	
H	
I	
J	
K	
X	Consult your supervisor or SOPs for special handling directions.

Safety Glasses	Splash Goggles	Face Shield & Protective Eyewear	Gloves
Boots	Protective Apron	Protective Clothing & Full Suit	Dust Respirator
Full Face Respirator	Dust & Vapor Half-Mask Respirator	Full Face Respirator	Airline Hood/Mask or SCBA

OTHER STANDARD ABBREVIATIONS:

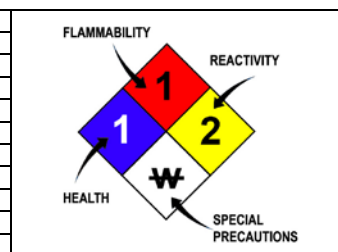
Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity – Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:	
Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

HAZARD RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
ACD	Acidic
ALK	Alkaline
COR	Corrosive
W	Use No Water
OX	Oxidizer
TREFOIL	Radioactive



TOXICOLOGICAL INFORMATION:

LD₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC₅₀	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD₁₀	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD₁₀, LD₁₀, & LD₀ or TC, TC₀, LC₁₀, & LC₀	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL_m	Median threshold limit
log K_{OW} or log K_{OC}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System
DOT	U.S. Department of Transportation
TC	Transport Canada
EPA	U.S. Environmental Protection Agency
DSL	Canadian Domestic Substance List
NDSL	Canadian Non-Domestic Substance List
PSL	Canadian Priority Substances List
TSCA	U.S. Toxic Substance Control Act
EU	European Union (European Union Directive 67/548/EEC)
WGK	Wassergefährungsklassen (German Water Hazard Class)

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

Class A	Class B	Class C	Class D1	Class D2	Class D3	Class E	Class F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

CLP/GHS (1272/2008/EC) PICTOGRAMS:

GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment