

SAFETY DATA SHEET

This SDS complies with REACH 1907/2006 and 2001/58/EC, GHS, OSHA 29CFR 1910.1200

Section 1: Chemical Product and Company Identification

CHEMICAL SUPPLIER COMPANY NAME

Reactive Metals Studio, Inc.

P.O. Box 890

Clarkdale, Arizona 86324

Safety Data Sheet Competent Person:

DATE PREPARED: July 18, 2014

PRODUCT NAME:

Baldwin's Patina

FORMULA:

Preparation/Mixture

PRODUCT USE:

Patination of copper and copper alloys

EMERGENCY TELEPHONE

3E: 855-280-2838

3E: Account number 4864

Information: 928-634-3434

Fax: 928-634-6734

Other: 760-602-8703

info@reactivemetals.com

REVISION DATE: September 9, 2014**Section 2: Hazards Identification****GHS Hazard Class**

Signal word:

Skin Corrosive -- Category 1

Hazard Statement:

Danger

Precautionary Statements:

Prevention

Causes serious eye damage

Response

Wear eye/face protection

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

Storage

Immediately call a POISON CENTER or doctor/physician.

Disposal

Store locked up.

Dispose of contents/container by following the waste disposal requirements of your country, state, or local authorities.

Hazard(s) Not Otherwise Classified (HNOC): Not classified



HAZARD CLASSIFICATION:

Classified as hazardous based on IATA, IMDG, and DOT.

FIRE AND EXPLOSION:

Not considered flammable or combustible, but this product will burn if involved in a fire.

Product emits toxic fumes when burned.

POTENTIAL HEALTH EFFECTS:

<0 % of mixture consists of ingredients of unknown acute toxicity

INGESTION:

Swallowing this material may be harmful and cause chemical burns, nausea, and vomiting.

INHALATION:

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

SKIN CONTACT:

Causes skin burns and permanent skin damage.

EYE CONTACT:

Causes burns and severe eye burns..

OTHER:

None

CHRONIC EFFECTS OF OVEREXPOSURE:

None

APPEARANCE:

Blue liquid

NFPA Rating:

Component	Health (Blue)	Flammability (Red)	Reactivity (Yellow)	Special (White)
Baldwin's Patina	3	0	0	----

Section 3: Composition, Information on Ingredients

PRODUCT COMPOSITION	APPRX %	ACGIH TLV	OSHA PEL	NIOSH REL	CAS NO.	EINECS/ELINCS	DANGER SYMBOL	RISK PHRASE	DSL CANADA
Water	>85	-----	-----	-----	7732-18-5	231-18-5	-----	-----	Y
Ammonium Hydroxide	<5	-----	-----	-----	1336-21-6	215-647-6	-----	-----	Y
Copper Salts	<10	-----	-----	¹ mg/m ³	7447-39-4	231-210-2	-----	-----	Y

Trade Secret (TS) Some items on this MSDS may be designated as trade secrets. Bonafide requests for disclosure of trade secret information to medical personnel must be made in accordance with the provisions contained in 29 CFR 1910.1200 I 1-13. The full text for all R-Phrases is shown in Section 16.

Section 4: First Aid Measures

INHALATION:	Remove to fresh air. If not breathing, provide CPR (cardio pulmonary resuscitation). Get immediate medical attention.
SKIN CONTACT:	Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing.
EYE CONTACT:	Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.
INGESTION:	If swallowed do not induce vomiting, give large quantities of water to drink. Never give anything to an unconscious person. Get immediate medical attention.

Section 5: Fire-fighting Measures

FLASH POINT:	Not applicable
FLAMMABLE LIMITS IN AIR (% by vol):	Not applicable
EXTINGUISHING MEDIA:	None
SPECIAL FIREFIGHTING PROCEDURES:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Material does not burn. Use extinguishing agent suitable for the type of surrounding fire.

Section 6: Accidental Release Measures

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Wear proper protective equipment as specified in Section 8: Exposure Controls/Personal Protection
Warn other workers of spill. Contain spills. Place in a chemical waste container.

DISPOSAL METHOD:

Disposal of this container: Reference Section 13 of this MSDS.

Section 7: Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Warning: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.
Keep container closed when not in use.
Wear proper protective equipment when handling this material.
Avoid contact with skin, eyes or clothing.
Avoid breathing vapor.
Wash hands and face after handling this material.
Keep out of reach of children.
Follow all applicable local regulations for handling and storage.
Utilize chemical segregation.

INFORMATION ON EMPTIED CONTAINER

Dispose of this container according to local, state, and federal laws in your country.
Do not reuse this container. This container may be hazardous when emptied.

SPECIFIC USES:

This product is intended for Patination of copper and copper alloys

Section 8: Exposure Controls/Personal Protection

VENTILATION: Always provide good general, mechanical room ventilation where this chemical/material is used.

SPECIAL VENTILATION CONTROLS: Use this material inside totally enclosed equipment, or use it with local exhaust ventilation at points where vapors can be released into the workspace air.

RESPIRATORY PROTECTION: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

PROTECTIVE GLOVES: Wear chemical impervious gloves at all times while working with this product. Recommended glove types include: Laminate Film, Nitrile, or Tri-polymer. Check with your company's glove supplier to ensure chemical resistance.

EYE PROTECTION: Safety Glasses, Chemical goggles, face shield

PROTECTIVE CLOTHING: Wear suitable protective clothing to prevent skin contact. Use of anti-static type aprons is recommended.

OTHER EQUIPMENT: Make safety shower, eyewash stations, and hand washing equipment available in the work area.

WORK/HYGIENE PRACTICES: Avoid breathing vapor. Avoid contact with eyes. Wash hands and face after handling.

Section 9: Physical and Chemical Properties

APPEARANCE - COLOR: Blue

PHYSICAL STATE: Liquid

ODOR: Pungent, ammonia odor

PRODUCT CRITERIA

	PRODUCT CRITERIA
ODOR THRESHOLD	Not Available for product
PH	12-13
FLASH POINT:	Not Available for product
LOWER EXPLOSIVE LIMIT; UPPER EXPLOSIVE LIMIT	Not Available for product
FLAMMABILITY (Solid, gas)	Not Available for product
EXPLOSIVE PROPERTIES	Not Available for product
OXIDIZING PROPERTIES	Not Available for product
SPECIFIC GRAVITY (@25 °C):	1.0
EVAPORATION RATE:	Not Available for product
% VOLATILE by VOLUME	Not Available for product
PARTITION COEFFICIENT	Not Available for product
AUTO IGNITION TEMPERATURE	Not Available for product
DECOMPOSITION TEMPERATURE	Not Available for product
BOILING POINT:	Similar to water
MELTING POINT:	Not Established
VAPOR PRESSURE	Not Available for product
VAPOR DENSITY (AIR = 1)	Not Available for product
SOLUBILITY IN WATER:	Soluble
WATER SOLUBILITY IN THE SOLVENT	Not Available for product
FREEZING POINT:	Not Available for product
VISCOSITY	Not Available for product
VOC CONTENT	Not Available for product

Section 10: Stability and Reactivity

STABILITY:	Stable
CONDITIONS TO AVOID:	None
INCOMPATIBILITY (MATERIALS TO AVOID):	Acids
HAZARDOUS DECOMPOSITION PRODUCTS:	None
HAZARDOUS POLYMERIZATION:	Will not occur

Section 11: Toxicological Information

GHS Required Criteria	Toxicity Criteria	Toxicity Information	Comments	Chemical Constituent
Acute Toxicity	LD50 (Oral/Rat):	350 mg/kg		Ammonium Hydroxide
	LD50 (Oral/Rat):	584 mg/kg		Copper Chloride
Skin Corrosion/Irritation		No information is available.		
Serious Eye Damage / Eye Irritation		No information is available.		
Respiratory or Skin Sensitization	Eye Rabbit	Severe eye irritation		Ammonium Hydroxide
Germ Cell Mutagenicity		No information is available.		
Carcinogenicity		Not listed	NTP	
		Not listed	IARC	
		Not listed	OSHA	
Reproductive Toxicity		No information is available.		
STOST -- Single Exposure		Inhalation - May cause respiratory irritation.		Copper Chloride
STOST – Repeated Exposure		No information is available.		
Aspiration Hazard		No information is available.		

STOST = Specific Target Organ Systemic Toxicity

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

		Chemical
BIODEGRADATION:	No information is available.	
BIOACCUMULATION:	No information is available.	
ECO TOXICITY:	No information is available.	
	LC50 – Daphnia magna (water flea) – 32mg/l – 50 h	Ammonium Hydroxide
	LC50 - Cyprinus carpio (Carp) - 0.12 - 0.23 mg/l - 96.0 h	Copper Chloride
	EC50 - Daphnia magna (Water flea) - 0.04 mg/l - 48 h	Copper Chloride
	EC50 - Chlorella vulgaris (Fresh water algae) - 0.2 mg/l - 96 h	Copper Chloride
MOBILITY:	No information is available.	

Note: Not all of the ingredients have been tested for Ecotoxicity.

Section 13: Disposal Considerations

WASTE FROM RESIDUES / UNUSED PRODUCTS:
Follow the waste disposal requirements of your country, state, or local authorities.

CONTAMINATED PACKAGING:
Contaminated packaging material should be disposed of as stated above for residues and unused product.

RINSATE: Do not dispose of rinse water containing product in a storm water drainage system.

Section 14: Transport Information

ROAD TRANSPORT:

ADR = International Carriage of Dangerous Goods by Road

UN NUMBER:

DOT PROPER SHIPPING NAME

UN 3266

Corrosive liquid, basic, inorganic, N.O.S. (Ammonium Hydroxide)

DOT / ADR HAZARD CLASS: Corrosive
DOT / ADR LABELS: Class 8
PLACARD: Corrosive, Class 8
DOT / ADR PACKAGING GROUP: III

SEA TRANSPORT: IMDG

PROPER SHIPPING NAME: Corrosive liquid, basic, inorganic, N.O.S. (Ammonium Hydroxide)
UN NUMBER SEA: UN 3266
CLASS: 8
PACKING GROUP: III
EmS No.: F-A, S-B
MARINE POLLUTANT: No
SEA TRANSPORT NOTES: Category A storage

AIR TRANSPORT: IATA/ICAO

UN NUMBER: UN 3266
PROPER SHIPPING NAME: Corrosive liquid, basic, inorganic, N.O.S. (Ammonium Hydroxide)
HAZARD CLASS: 8
PACKAGING GROUP: III

Section 15: Regulatory Information

Directive 67/548/EEC

LABEL FOR SUPPLY:



CORROSIVE

RISK PHRASES:

R-Phrase:	R41	Risk of serious damage to eyes
		R35 Causes severe burns
S-Phrase:	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S28	After contact with skin. Wash immediately with plenty of water.

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:

This product is in compliance with rules, regulations, and orders of TSCA. All components are listed on the TSCA Inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the Emergency Planning and Community Right To Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS's that are copied and distributed for the material.

The Section 313 toxic chemicals contained in this product are: Copper chloride

CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 chemical(s) under the statute.
The California proposition 65 chemical(s) contained in this product are: None

STATE RIGHT-TO-KNOW TOXIC SUBSTANCE OR HAZARDOUS SUBSTANCE LIST:

Florida Toxic Substance(s):	Not listed
Massachusetts's hazardous substance(s):	Ammonium Hydroxide, Copper chloride
Pennsylvania hazardous substance code(s):	Ammonium Hydroxide, Copper chloride
New Jersey	Ammonium Hydroxide, Copper chloride
Illinois	Not listed
Michigan	Not listed

CANADA:

This MSDS/SDS will be non compliant 3 years after the issue date. This MSDS contains all of the information required by the Controlled Products Regulations (CPR).

WHMIS-INFORMATION:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR), SOR/88-66, current to February 20, 2012. The classes of controlled products listed in the CPR, Section 32, Part IV, have been reviewed and based on Professional Judgment this product has been determined to be WHMIS controlled as a Class E, Corrosive Material.

EUROPEAN UNION:

This product has been reviewed for compliance with the following European Community Directives: REACH 1907/2006; Directive 1999/45/EC, Regulation (EC) No 1272/2008 on classification, labeling, and packaging (CLP) of substances and mixtures. None of the chemicals used in this product are on the EU's REACH SVHC (Substances of Very High Concern) chemicals list (last updated June 16, 2014).

Section 16: Other Information

European Community Hazards Identification:

Risk phrases	None
Safety phrases	None
Danger Symbol(s):	None

Revision Comments:	Initial version August 17, 2014
Revision Number:	0
Information Sources:	RTECS, REACH, OSHA 29CFR 1910.1200

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