

Safety Data Sheet

Bright Copper Reducer Solution – C1218

SDS Revision Date:

05/24/2017

1. Identification

1.1. Product identifier

Product Identity Bright Copper Reducer Solution – C1218
Alternate Names Bright Copper Reducer Solution – C1218

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use Commercial mirroring. .

1.3. Details of the supplier of the safety data sheet

Company Name Angel Gilding
1945 Gardner Road
Broadview IL 60155 USA

Emergency

24 hour Emergency Telephone No. 708-383-3340

Customer Service: Angel Gilding 708-383-3340

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Acute Tox. 5;H303	May be harmful if swallowed. (Not adopted by US OSHA)
Acute Tox. 5;H313	May be harmful in contact with skin. (Not adopted by US OSHA)
Acute Tox. 4;H332	Harmful if inhaled.
Skin Irrit. 2;H315	Causes skin irritation.
Eye Irrit. 2;H319	Causes serious eye irritation.
Skin Sens. 1;H317	May cause an allergic skin reaction.
Muta. 2;H341	Suspected of causing genetic defects.
Carc. 1B;H350	May cause cancer.
STOT SE 3;H335	May cause respiratory irritation.

2.2. Label elements



Danger

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H303 May be harmful if swallowed.
H313 May be harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer.

[Prevention]:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P308+313 IF exposed or concerned: Get medical advice / attention.
P321 Specific treatment (see information on this label).
P331 Do NOT induce vomiting.
P333+313 If skin irritation or a rash occurs: Get medical advice / attention.
P337+313 If eye irritation persists: Get medical advice / attention.
P362 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before reuse.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.
P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

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3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Formaldehyde CAS Number: 0000050-00-0	10 - 25	Carc. 1B;H350 Muta. 2;H341 Acute Tox. 3;H301 Acute Tox. 3;H311 Acute Tox. 3;H331 Skin Corr. 1B;H314 Skin Sens. 1;H317 >0.2 %	[1][2]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Overview	Potential Acute Health Effects: Hazardous in case of eye contact (irritant), of ingestion, . Slightly hazardous in case of skin contact (irritant, sensitizer, permeator). Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs. Severe over-exposure can result in death. Potential Chronic Health Effects: Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde gas]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Formaldehyde gas]. Mutagenic for bacteria and/or yeast. [Formaldehyde gas]. Mutagenic for mammalian somatic cells. [Methyl alcohol]. Mutagenic for bacteria and/or yeast. [Methyl alcohol]. TERATOGENIC EFFECTS: Classified POSSIBLE for human [Methyl alcohol]. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Methyl alcohol]. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce
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	general deterioration of health by an accumulation in one or many human organs. Reproductive or genetic defect hazard. See section 2 for further details.
Inhalation	Harmful if inhaled. May cause respiratory irritation.
Eyes	Causes serious eye irritation.
Skin	May be harmful in contact with skin. May cause an allergic skin reaction. Causes skin irritation.
Ingestion	May be harmful if swallowed.

5. Fire-fighting measures

5.1. Extinguishing media

Not Applicable

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: May form formaldehyde gas, carbon oxides, hydrogen, formic acid and various hydrocarbons. Incomplete combustion may also produce irritating smoke and toxic and/or irritating gases or fumes.

Avoid breathing dust / fume / gas / mist / vapors / spray.

Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters

Flammability of the Product: Non-flammable.

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Special Remarks on Explosion Hazards: Reaction with peroxide, nitrogen dioxide, and permformic acid can cause an explosion. (Formaldehyde gas).

ERG Guide No. ---

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Poisonous liquid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance

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on disposal. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the SDS and with local authorities.

DO NOT USE COMBUSTIBLE MATERIALS.

7. Handling and storage

7.1. Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

Keep locked up.. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

Incompatible materials: Slightly reactive to reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000050-00-0	Formaldehyde	OSHA	TWA 0.75 ppm STEL 2 ppm
		ACGIH	STEL: 0.3 ppm Ceiling: 1 ppm S, A2, 1
		NIOSH	Ca TWA 0.016 ppm C 0.1 ppm [15-minute]
		Supplier	No Established Limit

8.2. Exposure controls

Respiratory

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified vapor respirators.

Eyes

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin

Wear PVC or rubber gloves to keep skin contact to a minimum. Refer to the manufacturer's recommendations regarding the suitability of any gloves used.

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Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

9. Physical and chemical properties

Appearance	Clear, Colorless Liquid
Odor	Not Available
Odor threshold	Not determined
pH	(1% soln/water): Basic.
Melting point / freezing point	May start to solidify at -97.8°C (-144°F) based on data for: Methyl alcohol.
Initial boiling point and boiling range	The lowest known value is 64.5°C (148.1°F) (Methyl alcohol). Weighted average: 99.53°C (211.2°F)
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	The highest known value is 12.3 kPa (@ 20°C) (Methyl alcohol). Weighted average: 2.43 kPa (@ 20°C)
Vapor Density	The highest known value is 1.11 (Air = 1) (Methyl alcohol). Weighted average: 0.63 (Air = 1)
Specific Gravity	Weighted average: 1 (Water = 1)
Solubility in Water	Easily soluble in cold water, hot water. Soluble in diethyl ether, acetone. Insoluble in methanol, n-octanol.
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
Odor Threshold	The highest known value is 100 ppm (Methyl alcohol)
Coefficient of Water/Oil Distribution	The product is much more soluble in water.

9.2. Other information

No other relevant information.

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10. Stability and reactivity

10.1. Reactivity

Incompatible with urea, phenol, isocyanates, anhydrides, amines, AZO compounds, carbonyl compounds, oxides (e.g. nitrogen dioxide), performic acid, dithiocarbmates, or peroxides. Polymerization can be inhibited by the addition of methanol or stabilizers such as hydroxypropyl methyl cellulose, methyl ethyl celluloses, or isophthalobisguanamine.

10.2. Chemical stability

Stable under the recommended storage and handling conditions prescribed. At higher temperatures, product may form formic acid and methanol.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Excess heat (high temperatures), incompatible materials.

10.5. Incompatible materials

Slightly reactive to reactive with oxidizing agents, reducing agents, acids, alkalis.
Corrosivity: Non-corrosive in presence of glass.

10.6. Hazardous decomposition products

May form formaldehyde gas, carbon oxides, hydrogen, formic acid and various hydrocarbons. Incomplete combustion may also produce irritating smoke and toxic and/or irritating gases or fumes.

11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Formaldehyde - (50-00-0)	260.00, Guinea Pig - Category: 3	270.00, Rabbit - Category: 3	No data available	No data available	No data available

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000050-00-0	Formaldehyde	OSHA	Regulated Carcinogen: Yes
		NTP	Known: Yes; Suspected: Yes
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

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Classification	Category	Hazard Description
Acute toxicity (oral)	5	May be harmful if swallowed. (Not adopted by US OSHA)
Acute toxicity (dermal)	5	May be harmful in contact with skin. (Not adopted by US OSHA)
Acute toxicity (inhalation)	4	Harmful if inhaled.
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	2	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	1	May cause an allergic skin reaction.
Germ cell mutagenicity	2	Suspected of causing genetic defects.
Carcinogenicity	1B	May cause cancer.
Reproductive toxicity	---	Not Applicable
STOT-single exposure	3	May cause respiratory irritation.
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Formaldehyde - (50-00-0)	1.41, Oncorhynchus mykiss	5.80, Daphnia pulex	0.00 (96 hr),

12.2. Persistence and degradability

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Methanol in water is rapidly biodegraded and volatilized. Aquatic hydrolysis, oxidation, photolysis, adsorption to sediment, and bioconcentration are not significant fate processes. The half-life of methanol in surfact water ranges from 24 hrs. to 168 hrs. Based on its vapor pressure, methanol exists almost entirely in the vapor phase in the ambient atmosphere. It is degraded by reaction with photochemically produced hydroxyl radicals and has an estimated half-life of 17.8 days. Methanol is physically removed from air by rain due to its solubility. Methanol can react with NO₂ in polluted to form methyl nitrate. The half-life of methanol in air ranges from 71 hrs. (3 days) to 713 hrs. (29.7 days) based on photooxidation half-life in air. (Methyl alcohol).

12.3. Bioaccumulative potential

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Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards			
IMDG	Marine Pollutant: No;		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS 1988 Classification	D2A
US EPA Tier II Hazards	Fire: No Sudden Release of Pressure: No Reactive: No Immediate (Acute): Yes Delayed (Chronic): Yes

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EPCRA 302 Extremely Hazardous:

Formaldehyde

EPCRA 313 Toxic Chemicals:

Formaldehyde

Proposition 65 - Carcinogens (>0.0%):

Formaldehyde

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

16. Other information

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H331 Toxic if inhaled.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

IMPORTANT NOTE: This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or any process. Final determination of suitability of any material is the sole responsibility of the user.

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