

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**SECTION 1. IDENTIFICATION**

Product name : ELECTROPURE COPPER SULFATE SOL

Product code : 2200364-0055-4-000

**Manufacturer or supplier's details**

Company name of supplier : Atotech Deutschland GmbH

Address : Erasmusstrasse 20  
Berlin 10553  
Germany

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Company name of supplier : Atotech USA

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ROCK HILL, SC, USA 29730

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Company name of supplier : Atotech Canada

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Prepared by  
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Questions about content of Safety Data Sheets: [product-safety@atotech.com](mailto:product-safety@atotech.com)

Emergency telephone number : CHEMTREC +18004249300

Transport Medical : Rocky Mountain Poison Control Center: 303-623-5716

**Recommended use of the chemical and restrictions on use**Recommended use : **Plating agents and metal surface treating agents**  
**Surface treatment**

Restrictions on use : For industrial use only.

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Oral) : Category 4

Serious eye damage : Category 1

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H410 Very toxic to aquatic life with long lasting effects.Precautionary statements : **Prevention:**  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.  
**Response:**  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.  
P391 Collect spillage.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

Chemical nature : Aqueous solution

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**Hazardous ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
Copper sulfate	7758-98-7	>= 10 - < 25
Sulfuric acid	7664-93-9	>= 0.1 - < 1

This product may contain component(s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above deminimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS 2015 regulations and or guidelines. Please refer to other sections of the SDS for information on safety, health and environmental guidelines and precautions.

**SECTION 4. FIRST AID MEASURES**

- General advice : Call a physician or poison control center immediately.  
Show this safety data sheet to the doctor in attendance.
- If inhaled : Move to fresh air.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Take off contaminated clothing and shoes immediately.  
Wash contaminated clothing before re-use.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water  
for at least 30 minutes.  
Consult a physician.
- If swallowed : If swallowed, call a poison control centre or doctor immediately.  
Never give anything by mouth to an unconscious person.  
Do not induce vomiting without medical advice.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed.  
Causes serious eye damage.
- Protection of first-aiders : First Aid responders should pay attention to self-protection  
and use the recommended protective clothing
- Notes to physician : For specialist advice physicians should contact the Poison  
Control Center.

**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Hazardous combustion prod- : Sulfur oxides

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

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Specific extinguishing methods : Use a water spray to cool fully closed containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions : Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Avoid formation of aerosol. Dam up. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

**SECTION 7. HANDLING AND STORAGE**

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing mist or vapors.

Conditions for safe storage : Do not freeze. Keep containers tightly closed in a dry, cool and well-ventilated place.

Recommended storage temperature : 7 - 40 °C

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Copper sulfate	7758-98-7	TWA	1 mg/m3 (Copper)	NIOSH REL
Sulfuric acid	7664-93-9	TWA (Thoracic fraction)	0.2 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Remarks : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Follow the instructions for use issued by the producer.

Eye protection : Tightly fitting safety goggles  
Face-shield  
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Impervious clothing  
Boots

Hygiene measures : Avoid contact with skin, eyes and clothing.  
Wash hands before breaks and immediately after handling the product.  
When using do not eat, drink or smoke.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid  
Color : blue  
Odor : No information available.  
Odor Threshold : No data available  
pH : 2.5 - 5.0

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

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Melting point/freezing point	:	not determined
Initial boiling point and boiling range	:	not determined
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	ca. 23 hPa (20 °C)
Relative vapor density	:	No data available
Density	:	1.13 - 1.23 g/cm <sup>3</sup>
Solubility(ies) Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	Not applicable

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	None under normal processing.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Gives off hydrogen by reaction with metals. Potential for exothermic hazard
Conditions to avoid	:	To avoid thermal decomposition, do not overheat.
Incompatible materials	:	Metals
Hazardous decomposition products	:	Sulfur oxides

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Eye contact

**Acute toxicity**

Harmful if swallowed.

**Product:**Acute oral toxicity : Acute toxicity estimate: 1,950 mg/kg  
Method: Calculation methodAcute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

Remark: The acute toxicity estimate (ATE) of the ingredients are derived using the LD50/LC50 values where available.

**Ingredients:****Copper sulfate:**

Acute oral toxicity : LD50 Oral (Rat): 308 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): 2,002 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Product:**

Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization****Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

**Product:**

Remarks: The IARC has classified "Strong inorganic acid mists containing sulfuric acid" as a Category 1 carcinogen, a substance that is "carcinogenic to humans". This classification is for strong inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions.

**IARC**

Group 1: Carcinogenic to humans

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

	Sulfuric acid	7664-93-9
<b>ACGIH</b>	Suspected human carcinogen	
	Sulfuric acid	7664-93-9
	Suspected human carcinogen	
<b>OSHA specified</b>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
<b>NTP</b>	Known to be human carcinogen	
	Sulfuric acid	7664-93-9

**Reproductive toxicity**

Not classified based on available information.

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Not classified based on available information.

**Aspiration toxicity**

Not classified based on available information.

**Further information****Product:**

Remarks: No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Ingredients:****Copper sulfate:**Toxicity to fish : LC50: 0.11 mg/l  
Exposure time: 96 hToxicity to daphnia and other : EC50: 0.02 mg/l  
aquatic invertebrates Exposure time: 48 h**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**Mobility in soil**

No data available

**Other adverse effects****Product:**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**Waste from residues : Dispose of in accordance with local regulations.  
Dispose of wastes in an approved waste disposal facility.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA-DGR**UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
Technical name(s) : (Copper sulfate)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964**IMDG-Code**UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
Technical name(s) : N.O.S.  
(Copper sulfate)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****DOT / 49 CFR**UN/ID/NA number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Copper sulfate)  
Class : 9

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

Packing group : III  
 Labels : CLASS 9  
 ERG Code : 171  
 Marine pollutant : yes (Copper sulfate)  
 Remarks : Above applies only to containers with a net weight above RQ value stated in chapter 15. Not regulated if shipped in packages less than or equal to RQ value stated in chapter 15.

**SECTION 15. REGULATORY INFORMATION**

**TSCA 5a** : No substances are subject to a Significant New Use Rule.

**TSCA\_12b** : No substances are subject to TSCA 12(b) export notification requirements.

**DEA** : Not applicable

**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulfuric acid	7664-93-9	1000	*
Copper sulfate	7758-98-7	10	63*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulfuric acid	7664-93-9	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 311/312 Hazards** : Acute toxicity (any route of exposure)  
 Serious eye damage or eye irritation

**SARA 302** : The following components are subject to reporting levels established by SARA Title III, Section 302:

Sulfuric acid 7664-93-9

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper sulfate 7758-98-7

**US State Regulations****Massachusetts Right To Know**

Copper sulfate	7758-98-7	10 - 25 %
Sulfuric acid	7664-93-9	0.1 - 1 %

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**Pennsylvania Right To Know**

Copper sulfate	7758-98-7	10 - 25 %
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**New Jersey Right To Know**

Copper sulfate	7758-98-7	10 - 25 %
Sulfuric acid	7664-93-9	0.1 - 1 %

**California Prop. 65**

WARNING! This product contains a chemical known to the State of California to cause cancer.  
 WARNING: This product can expose you to chemicals including Sulfuric acid, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Remarks: Components which are only displayed in Section 15 are being reported for local regulatory purposes. These components are not displayed in Section 3 due to one or more of the following conditions being met: being present in the product at concentration(s) below threshold limit values for reporting, not considered hazardous materials, health hazards or because they do not contribute to the overall GHS Classification of the final product as required by OSHA HazCom 2012 final rule ( 29 CFR 1910.1200).

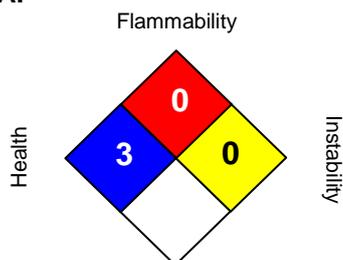
**Substances currently restricted by WEEE/RoHS (European Directive 2012/19/EC , 2011/65/EC) or ELV (European Directive 2000/53/EC):**

PBDE	PBB	CrVI	Hg	Pb	Cd
-	-	-	-	-	-

Please note: Current legislation restricting the use of certain substances applies to „homogeneous material“ in finished articles being supplied to the market. Substances deposited during surface finishing may have a composition (weight percent) higher than the weight percent of the substance in the operating solution from which the deposit is made. Atotech encourages its customers to implement systems to ensure their finished products comply with the regulations in force.

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

**SECTION 16. OTHER INFORMATION****Further information****NFPA:****Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
NIOSH REL : USA. NIOSH Recommended Exposure Limits  
OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants -  
1910.1000  
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-  
its for Air Contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour  
workday during a 40-hour workweek  
OSHA P0 / TWA : 8-hour time weighted average  
OSHA Z-1 / TWA : 8-hour time weighted average  
(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing  
of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx -  
Concentration associated with x% response; ELx - Loading rate associated with x% response;  
EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response;  
GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA -  
International Air Transport Association; IBC - International Code for the Construction and Equip-  
ment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentra-  
tion; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous  
Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardi-  
zation; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a  
test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of  
Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect  
Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect  
Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Of-  
fice of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic  
substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the  
Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals;  
SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United  
Nations; vPvB - Very Persistent and Very Bioaccumulative; CERCLA - Comprehensive Environ-  
mental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS -  
Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA -  
Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Re-

**ELECTROPURE COPPER SULFATE SOL**Version 4.0  
SDS\_US\_GHSSDS Number: 2200364-0055-4-  
000

Revision Date: 01/17/2018

source Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

Revision Date : 01/17/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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