Safety Data Sheet
Copper Conductive Paint

CASWELL INC

SECTION 1: Identification

1.1 Product identifier

Product name	Copper Conductive Paint
Product number	CCP
Brand	Caswell

1.3 Recommended use of the chemical and restrictions on use

Metallizing Paint

1.4 Supplier's details

Name	Caswell Inc
Address	7696 Route 31 Lyons, NY 14489 USA
Telephone	315 946 1213
Fax	315 946 4456
email	sales@caswellplating.com

Australian Supplier

Registered company name	CASWELL AUSTRALIA P/L
Address	FACTORY 1 51 ELM PARK DRIVE HOPPERS CROSSING 3029 VICTORIA Australia
Telephone	03 97417103
Fax	
Website	www.caswellplating.com.au
Email	sales@caswellplating.com.au

1.5 Emergency phone number(s)

USA Office Hours (9-4ET): 315 946 1213
24 Hour: CHEMTEL US# 1-800-255-3924 Intl# +01-813-248-0585

Australia **000**

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

- Carcinogenicity (chapter 3.6), Cat. 2
- Skin corrosion/irritation (chapter 3.2), Cat. 2
- Eye damage/irritation (chapter 3.3), Cat. 2
- Hazardous to the aquatic environment - long-term hazard (chapter 4.1), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects
H351	Suspected of causing cancer

Precautionary statement(s)

P264	Wash … thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P321	Specific treatment (see … on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it 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.
P337+P313	If eye irritation persists: Get medical advice/attention.
P273	Avoid release to the environment.
P501	Dispose of contents/container to …
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.

2.3 Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

1. WATER

Concentration	40 - 50 %
Other names / synonyms	DIHYDROGEN OXIDE; h2o; HYDROGEN OXIDE; ICE; SNOW; STEAM; WATER, DISTILLED
CAS no.	7732-18-5

2. Copper

Concentration	25 - 40 %
CAS no.	65357-62-2

3. TITANIUM DIOXIDE

Concentration	5 - 10 %
Other names / synonyms	1700 WHITE; A-FIL CREAM; ANATASE; ATLAS WHITE TITANIUM DIOXIDE; AUSTIOX; AUSTIOX R-CR 3; BAYERITIAN; BAYERTITAN; BAYERTITAN A; BAYERTITAN R-U-F; BAYTITAN; BROOKITE; C.I. 77891; C.I. PIGMENT WHITE 6; CAB-O-TI; CALCOTONE WHITE T; COSMETIC WHITE C47-5175; COSMETIC WHITE C47-9623; FLAMENCO; HOMBITAN; HOMBITAN R 101D; HOMBITAN R 610K; HORSE HEAD A-410; HORSE HEAD A-420; HORSE HEAD R-710; KH360; KRONOS; KRONOS 2073; KRONOS CL 220; KRONOS RN 40P; KRONOS RN 56; KRONOS TITANIUM DIOXIDE; LEVANOX WHITE RKB; NCI-CO4240; OCTAHEDRITE; P 25; P 25 (OXIDE); R 680; RAYOX; RO 2; RUNA ARH 20; RUNA ARH 200; RUNA RH20; RUTILE; RUTIOX CR; TI-PURE; TI-PURE R 101; TI-PURE R 900; TI-PURE R 901; TI-PURE R 915; TIOFINE; TIONA T.D.; TIOXIDE; TIOXIDE AD-M; TIOXIDE R-CR; TIOXIDE R-SM; TIOXIDE R.XL; TIOXIDE RHD; TIOXIDE RSM; TIPAQUE; TIPAQUE R 820; TITAFRANCE; TITAN WHITE; TITANIA; TITANIC ACID ANHYDRIDE; TITANIC ANHYDRIDE; TITANIC OXIDE; TITANIUM OXIDE; Titanium oxide (TiO2); TITANIUM PEROXIDE; TITANIUM WHITE; TITANIUM(IV) OXIDE; TITANIUMDIOXIDE; TITANOX; TITANOX 2010; TITANOX RANC; TRIOXIDE(S); TRONOX; UNITANE; UNITANE O-110; UNITANE O-220; UNITANE OR 450; UNITANE OR 572; UNITANE OR 650; UNITANE OR- 150; UNITANE OR-340; UNITANE OR-342; UNITANE OR-350; UNITANE OR-540; UNITANE OR-640; ZOPAQUE; ZOPAQUE LDC
CAS no.	13463-67-7

4. Silver

Concentration	1 - 5 %
Other names / synonyms	ARGENTUM; C.I. 77870; L-3; SHELL SILVER; SILVER ATOM
CAS no.	7440-22-4

5. Carbon black (airborne, unbound particles of respirable size)

Concentration	1 - 5 %
Other names / synonyms	acetylene black; Carbon Black; channel black; furnace black; lamp black; lampblack; Oil Black (Lampblack); thermal black
CAS no.	1333-86-4

6. N-METHYL-2-PYRROLIDONE

Concentration	1 - 5 %
Other names / synonyms	1-METHYL-2-PYRROLIDINONE; 1-METHYL-5-PYRROLIDINONE; 2-Pyrrolidinone, 1-methyl-; METHYLPYRROLIDONE; METHYLPYRROLIDONE,N-,2-; N-METHYLPYRROLIDINONE; N-METHYLPYRROLIDONE; NMP
EC no.	212-828-1
CAS no.	872-50-4
Index no.	606-021-00-7

- Eye damage/irritation (chapter 3.3), Cat. 2
- Skin corrosion/irritation (chapter 3.2), Cat. 2

H315	Causes skin irritation
H319	Causes serious eye irritation

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
In case of skin contact	Wash off with soap and plenty of water. Get medical attention if symptoms occur.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Personal protective equipment for first-aid responders
Wear PPE per section 8

4.1 Most important symptoms/effects, acute and delayed

Can cause moderate respiratory irritation, dizziness, weakness, fatique nausea and headaches. May cause metal fume, resulting in flu-like symptoms. Nasal perforation is possible from a single large or repeated smaller inhalation exposures. Suspect Cancer Hazard.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Use extinguishing media appropriate for surrounding fire.

5.2 Specific hazards arising from the chemical
May combust into CO2, CO and Nitrogen containing gasses.

5.3 Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. For precautions see section 2.2.

6.2 Environmental precautions
Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up
Use sand, kitty litter or absorbant cloth. Place in closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Titanium dioxide - Total dust (CAS: 13463-67-7)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. Titanium dioxide - Total dust (CAS: 13463-67-7)
PEL (Inhalation): See PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Titanium dioxide - Total dust (CAS: 13463-67-7)
REL (Inhalation): Ca, (ultrafine particles), 2.4 mg/m3Ęfine), 0.3 mg/m3(ultrafine), See Appendix A, See Appendix C (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

4. SILVER (CAS: 7440-22-4 EC: 231-131-3)
PEL-TWA (Inhalation): 0.01 mg/m3 (OSHA)
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants

5. SILVER (CAS: 7440-22-4 EC: 231-131-4)

PEL-TWA (Inhalation): 0.1 mg/m3 (ACGIH)
USA. ACGIH Threshold Limit Values
(TLV)

6. Silver, metal and soluble compounds (as Ag) (CAS: 7440-22-4)
PEL (Inhalation): 0.01 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

7. Silver, metal and soluble compounds (as Ag) (CAS: 7440-22-4)
PEL (Inhalation): 0.01 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

8. Silver, metal and soluble compounds (as Ag) (CAS: 7440-22-4)
REL (Inhalation): 0.01 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

9. Carbon black (CAS: 1333-86-4)
PEL (Inhalation): 3.5 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

10. Carbon black (CAS: 1333-86-4)
PEL (Inhalation): 3.5 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

11. Carbon black (CAS: 1333-86-4)
REL (Inhalation): 3.5 mg/m3Ę without PAHs); when PAHs are present, NIOSH considers carbon black to be a potential occupational carcinogen., See Appendix A,ƀee Appendix C (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

8.3 Individual protection measures, such as personal protective equipment (PPE) Eye/face protectionUse equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Wear chemical resistant gloves and clothing.

Body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
NIOSH/MSHA approved air purifying respirator with an organic vapor cartidge or canister may be permissable under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	Copper/Beige Colored Liquid
Odor	Slight
Odor threshold	
pH	
Melting point/freezing point	32 deg F
Initial boiling point and boiling range	212 deg F
Flash point	
Evaporation rate	Slower than n-butyl Acetate
Flammability (solid, gas)	None
Upper/lower flammability limits	
Upper/lower explosive limits	
Vapor pressure	
Vapor density	Heavier Than Air
Relative density	1.318
Solubility(ies)	Partial In Water
Partition coefficient: n-octanol/water	
Auto-ignition temperature	
Decomposition temperature	
Viscosity	
Explosive properties	
Oxidizing properties	

Other safety information

VOC 0.30 lbs/Gl as packed

SECTION 10: Stability and reactivity

10.1 Reactivity
Not Reactive

10.2 Chemical stability
Stable

10.4 Conditions to avoid
Sparks. Open Flame. Elevated Temperatures. Contamination

10.5 Incompatible materials
Strong oxidizers, ammonia, peroxides, acids, chlorintated compounds

10.6 Hazardous decomposition products

CO2, CO, Nitrogen

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Oral LD50: 3914 mg/kg (rat)
Suspect Cancer Hazard

Skin corrosion/irritation
Possible Irritant

Serious eye damage/irritation
Possible Irritant

Respiratory or skin sensitization
Silver compounds are toxic if absorbed through skin. May cause system damage. The absorbtion of silver through breaks in the skin may result in local pigmentation.

Carcinogenicity
Suspect Cancer Hazard (IARC)

STOT-repeated exposure
Respiratory system, liver, kidneys, eyes, skin, bone marrow, cardiovascular system, lymphatic system

SECTION 12: Ecological information

Toxicity
Copper is a marine pollutant. Specific data on this mixture is not available. Avoid release into environment.

SECTION 13: Disposal considerations

Disposal of the product
SMALL SPILLS: Contain and absorb with absorbent material and place into containers for later disposal. Wash site of spillage thoroughly with water. LARGE SPILLS: Dike far ahead of spill to prevent further movement. Recover by pumping or by using a suitable absorbent material and place into containers for later disposal. Dispose in suitable waste container.

Disposal of contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Massachusetts Right To Know Components
Chemical name: Copper
CAS number: 65357-62-2

New Jersey Right To Know Components
Common name: TITANIUM DIOXIDE
CAS number: 13463-67-7

Pennsylvania Right To Know Components
Chemical name: Titanium oxide
CAS number: 13463-67-7

Massachusetts Right To Know Components
Chemical name: Silver
CAS number: 7440-22-4

New Jersey Right To Know Components
Common name: SILVER
CAS number: 7440-22-4

Pennsylvania Right To Know Components
Chemical name: Silver
CAS number: 7440-22-4

New Jersey Right To Know Components
Common name: CARBON BLACK
CAS number: 1333-86-4

Pennsylvania Right To Know Components
Chemical name: Carbon black
CAS number: 1333-86-4

California Prop. 65 components
Chemical name: Carbon black (airborne, unbound particles of respirable size)
CAS number: 1333-86-4
02/21/2003 - cancer

Massachusetts Right To Know Components
Chemical name: N-Methyl-2-pyrrolidone
CAS number: 872-50-4

New Jersey Right To Know Components
Common name: 1-METHYL-2-PYRROLIDONE
CAS number: 872-50-4

Pennsylvania Right To Know Components
Chemical name: 2-Pyrrolidinone, 1-methyl- 2,beta-butoxyethoxyethyl Chloride
CAS number: 872-50-4

California Prop. 65 components
Chemical name: N-METHYL-2-PYRROLIDONE

CAS number: 872-50-4
06/15/2001 - developmental

HMIS Rating

Copper Conductive Paint	
HEALTH	* 2
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

NFPA Rating

SECTION 16: Other information

16.1 Further information/disclaimer

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Caswell Inc be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Caswell Inc has been advised of the possibility of such damages.