

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 |
|-----------|------------|

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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
H319
H412
H351

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

Precautionary statement(s)

P264
P280
P302+P352
P321
P332+P313
P362+P364
P305+P351+P338

P337+P313
P273
P501
P201
P202
P308+P313
P405

Wash ... thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of water/...
Specific treatment (see ... on this label).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Avoid release to the environment.
Dispose of contents/container to ...
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF exposed or concerned: Get medical advice/attention.
Store locked up.

2.3 Other hazards which do not result in classification

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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 |

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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, fatigue 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.

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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/m³ (ultrafine), 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)

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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/m³ (without PAHs); when PAHs are present, NIOSH considers carbon black to be a potential occupational carcinogen., See Appendix A, see 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 protection Use 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 cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

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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, chlorinated compounds

10.6 Hazardous decomposition products

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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 absorption 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

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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

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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.