

Safety Data Sheet

Product No. 16031, 16034 Pelco® Colloidal Silver

Issue Date (9-11-15)

Review Date (9-25-15)

Section 1: Product and Company Identification

Product Name: Pelco® Colloidal Silver

Synonym: Pelco® Conductive Liquid Silver, Pelco® Colloidal Silver Paint

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Hazard Identification

2.1 Classification of the substance or mixture

GHS Pictograms



GHS02 GHS07 GHS08

GHS Categories

GHS02 – Flammable

Flam. Liq. 2

H225: Highly flammable liquid and vapor.

GHS07 – Irritant

Skin Irrit. 2

H315: Causes skin irritation.

Eye Irrit. 2A

H319: Causes serious eye irritation.

GHS08 - Health Hazard

Repr. 2

H361: Suspected of damaging fertility or the unborn child.

STOT RE 2

H373: May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Hazard Pictograms



GHS02 GHS07 GHS08

Signal Word: DANGER

Hazard Statements

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

P201 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

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

2.3 Other hazards

Health Effects:

NFPA Hazard Rating: Health: 2; Fire: 3; Reactivity: 0

HMIS® Hazard Rating: Health: 2; Fire: 3; Reactivity: 0

(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Results of PBT and vPvB assessment

PBT: ND

vPvB: ND

Emergency overview

Appearance: Grey liquid-paste.

Immediate effects: Flammable material. Causes serious eye/skin irritation.

Potential health effects

Primary Routes of entry: Skin and eye contact.

Signs and Symptoms of Overexposure:

Eyes: Causes serious eye irritation.

Skin: Irritant to skin and mucous membranes.

Ingestion: ND

Inhalation: ND

Chronic Exposure: May cause damage to organs through prolonged or repeated exposure.

Chemical Listed As Carcinogen or Potential Carcinogen: No

See Toxicological Information (Section 11)

Potential environmental effects
See Ecological Information (Section 12)

Section 3: Composition / Information on Ingredients

| Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No) | % | OSHA PEL | ACGIH TLV | NTP Carcinogen | IARC Carcinogen | OSHA regulated Carcinogen |
|---|----------|--------------------------------------|---|-----------------------|------------------------|----------------------------------|
| Silver Powder (7440-22-4) | 50-75 | ND | ND | No | No | No |
| Toluene (108-88-3) EC-No. 203-625-9 | 10-25 | 200 ppm Ceiling: 300 ppm | 75 mg/m ³ 20 ppm | No | 3 | No |
| Ethyl acetate (141-78-6) EC-No. 205-500-4 | 5-10 | 1400 mg/m ³ 400 ppm** | 1440 mg/m ³ 400 ppm** | No | No | No |
| Ethanol, denatured (64-17-5) EC-No: 200-578-6 | 5-10 | 1900 mg/m ³ 1000 ppm** | 1880 mg/m ³ 1000 ppm* | No | 1 | No |
| Cellulose, nitrate (9004-70-0) | 5-10 | ND | ND | No | No | No |
| Propan-2-ol (67-63-0) | ≤ 2.5 | 980 mg/m ³ 400 ppm** | 984 mg/m ³ 400 ppm* 492 mg/m ³ 200 ppm** | No | 3 | No |
| Bornan-2-one (76-22-2) | ≤ 2.5 | 2 mg/m ³ ** | 19 mg/m ³ 3 ppm* 12 mg/m ³ 2 ppm** | No | No | No |

*Short Term value

**Long Term value

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: Rinse opened eye for several minutes under running water.
Skin Contact: Immediately wash with water and soap and rinse thoroughly.
Inhalation: In case of unconsciousness place patient stably in side position for transportation.
Ingestion: If symptoms persist, consult a doctor.

Note to physician

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures

Flash Point: -1° C (30° F)

Flammable Limits: Lower: 1.2 Vol % Upper: 7.0 Vol %

Auto-ignition point: Product is not self-igniting.

Fire Extinguishing Media: CO₂, extinguishing powder or sand. Do not use water or water with full jets.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective gear.

Unusual Fire and Explosion Hazards: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

Hazardous combustion products: Carbon dioxide/carbon monoxide.

DOT Class: Flammable liquid.

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Remove persons from danger area. Ensure adequate ventilation. Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective clothing.

Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/surface or ground water.

Methods and materials for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust.) Dispose contaminated material as waste according to section 13. Ensure adequate ventilation.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be taken in Handling and Storage:

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective clothing.

Environmental precautions: Prevent seepage into sewage system, work pits and cellars. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and clean up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents.

Storage temperature: Ambient or lower.

Storage Pressure: ND

Section 8: Exposure Controls / Personal Protection

Ingredients with biological limit values:

108-88-3 toluene

BEI 0.02 mg/L

Medium: blood

Time: Prior to last shift of workweek

Parameter: toluene

0.03 mg/L

Medium: urine

Time: end of shift

Parameter: toluene

0.3 mg/g creatinine

Medium: urine

Time: End of shift

Parameter: o-Cresol with hydrolysis (background)

67-63-0 propan-2-ol

BEI 40 mg/L

Medium: urine

Time: End of shift at end of workweek

Parameter: Acetone (background, nonspecific)

Engineering Controls

Ventilation required: Ensure adequate ventilation.

General: Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work. Avoid contact with the skin. Avoid contact with the eyes and skin.

Personal Protection Equipment

Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation. Filter A2B2P3.

Protective gloves: Only use chemical protective gloves with CE-labeling of category III. Check protective gloves prior to each use for their proper condition. After use of gloves apply skin-cleaning agents and skin cosmetics.

Skin protection: Appropriate protective clothing.

Eye protection: Tightly-sealed goggles.

Additional equipment: Eye wash facility available.

Exposure Guidelines

See Composition/Information on Ingredients (Section 3)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Grey liquid-paste.

Odor (threshold): Aromatic (ND)

Specific Gravity (H₂O=1): ND

Vapor Pressure (mm Hg): 29 hPa (22 mm Hg)

Vapor Density (air=1): ND

Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): ND

Boiling Point: 75 °C (167 °F)

Freezing point / melting point: ND

pH: ND

Solubility in Water: Not miscible or difficult to mix.

Molecular Weight: ND

Viscosity: Dynamic at 20 °C (68 °F): 20000 mPas; Kinematic: Not determined

Solvent content: Organic solvents: 32.8 %, Water: 0.0%

Section 10: Stability and Reactivity

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Incompatible materials.

Materials to Avoid (Incompatibility): Strong oxidizers, acids, and alkalis.

Hazardous Decomposition Products: Carbon dioxide/carbon monoxide.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

LD/LC50 values that are relevant for classification:

| 108-88-3 toluene | | |
|-------------------------------------|-----------|--|
| Dermal | LD50 | 12124 mg/kg (rbt) |
| Inhalative | LC50/4 h | 28.1 mg/l (rat) |
| 141-78-6 ethyl acetate | | |
| Oral | LD50 | 11300 mg/kg (rat) 5620 mg/kg (rbt) |
| Dermal | LD50 | > 18000 mg/kg (rabbit) |
| Inhalative | LC50/1 h | 200 mg/l (rat) |
| | LC50/4 h | 1600 mg/l (rat) |
| 64-17-5 ethanol denatured | | |
| Oral | LD50 | 5560 mg/kg (guinea pig) 3450 mg/kg (mouse) 6300 mg/kg (rabbit) 7060 mg/kg (rat) |
| Inhalative | LC50/ 4 h | 20000 mg/l (rat) |
| 9004-70-0 Cellulose, nitrate | | |
| Oral | LD50 | > 2000 mg/kg (rat) |
| 67-63-0 propan-2-ol | | |
| Oral | LD50 | 5045 mg/kg (rat) |
| Dermal | LD50 | 12800 mg/kg (rbt) |
| Inhalative | LC50/4 h | 30 mg/l (rat) |

Primary irritant effect:

On the skin: Irritant to skin and mucous membranes.

On the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Human experience: ND

This product **does** contain compounds listed by NTP or IARC or regulated by OSHA as a carcinogen: toluene (108-88-3): IARC 3, ethanol denatured (64-17-5): IARC 1, propan-2-ol, (67-63-0): IARC 3

Section 12: Ecological Information

Ecological Information:

Aquatic toxicity:

| | |
|-------------------------------------|--|
| 7440-22-4 Silver powder | |
| LC50/96 h | 0.0102 mg/l (fish) (anguilla anguilla)(valid for particle size <1mm) |
| 108-88-3 toluene | |
| EC50/30 min | 20 mg/l (bak) |
| EC50/48 h | 6 mg/l (daphnia) |
| IC50/72 h | 12 mg/l (algae) |
| LC50/96 h | 5.8 mg/l (fish) |
| 141-78-6 ethyl acetate | |
| EC10/18 h | 2900 mg/l (bak) |
| EC50/48 h | 717 mg/l (daphnia) |
| IC50/48 h | 3300 mg/l (algae) |
| LC50/48 h | 333 mg/l (fish) |
| LC50/96 h | 230 mg/l (fish) |
| 64-17-5 ethanol denatured | |
| LC50/24 h | > 100 mg/l (daphnia) |
| LC50/48 h | 8140 mg/l (fish) |
| 9004-70-0 Cellulose, nitrate | |
| EC50 | > 50000 mg/l (bak) |
| EC50/48 h | 10000 mg/l (daphnia) |
| EC50/72 h | 9000 mg/l (algae) |
| LC0/96 h | > 5000 mg/l (fish) |
| LC50/96 h | > 7500 mg/l (fish) |
| 67-63-0 propan-2-ol | |
| EC50/72 h | 1000 mg/l (algae) |
| LC50/96 h | 9640 mg/l (fish) |

Remark: Very toxic for fish.

Water hazard class 2: Hazardous for water, do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms.

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: Ethyl Acetate (141-78-6): U112; Toluene (108-88-3):

U220. Can be recycled to recover precious metal. Federal, State and local laws governing disposal of materials can differ. Must not be disposed of together with household garbage. Do not allow product to enter sewage system. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

US DOT Information: Proper shipping name: Flammable liquids, n.o.s. (Toluene, Ethyl acetate)

Hazard Class: 3

Packaging group: II

UN Number: UN1993

IATA: Proper shipping name: Flammable liquids, n.o.s. (Toluene, Ethyl acetate)

Hazard Class: 3

Packing group: II

UN Number: UN1993

EMS: F-E, S-E

Marine Pollutant: Yes

Canadian TDG: Flammable liquids, n.o.s. (Toluene, Ethyl acetate)

IMDG: Flammable liquid, n.o.s. (toluene, ethyl acetate), marine pollutant

Section 15: Regulatory Information

United States Federal Regulations

SDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.

SARA (Section 355): No ingredient is subject to reporting.

SARA (Section 313): Silver powder (7440-22-4) is listed. Toluene (108-88-3) is listed. Propan-2-ol (67-63-0) is listed.

RCRA: Ethyl Acetate (141-78-6): U112; Toluene (108-88-3): U220

TSCA: All components are listed on the TSCA public inventory.

CERCLA: Silver: RQ = 1000 lbs. Ethyl Acetate (141-78-6): RQ = 5000 lbs (2270 kg); Toluene (108-88-3): RQ = 1000 lbs (454 kg).

State Regulations

California Proposition 65:

Chemicals known to cause reproductive toxicity for females: toluene (108-88-3)

Chemicals known to cause developmental toxicity: toluene (108-88-3), ethanol (64-17-5)

International Regulations

Canada WHMIS: ND

Europe EINECS Numbers: See section 3

Section 16: Other Information

Label Information: Flammable

European Risk and Safety Phrases: ND

European symbols needed: ND

Canadian WHMIS Symbols: ND

Abbreviations used in this document

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

SDS Form 0013F1V4