

Safety Data Sheet

Product No. 16055 PELCO® Conductive Nickel Paint

Issue Date (09-23-15)

Review Date (08-31-17)

Section 1: Product and Company Identification

Product Name: PELCO® Conductive Nickel Paint

Synonym: None

Company Name

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

Inside USA and Canada 1-800-237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Outside USA and Canada 1-530-243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

CHEMTREC USA and Canada Emergency Contact Number 1-800-424-9300 24 hours a day

CHEMTREC Outside USA and Canada Emergency Contact Number +1-703-741-5970 24 hours a day

Section 2: Hazard Identification

2.1 Classification of the substance or mixture

GHS Pictograms



GHS02 GHS08 GHS07

GHS Categories

GHS02 Flammable

Flam. Liq. 2: H225

GHS08 Health Hazard

Carcinogenicity 2: H351

Rep. Tox. 2: H361

Spec. Organ Tox., Single exposure 3: H372

GHS07 Irritant

Spec. Target Organ Tox., Repeated exposure 1,2: H336

Eye irritation 2: H319

Sensitization 1: H317

Skin irritation 3: H315

Environmental hazard: Chronic Aquatic Toxicity 3: H412

2.2 Label elements

Signal word: DANGER

Hazard statements

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H317 May cause allergic skin reaction.

H319 Causes serious eye irritation.

H336	May cause drowsiness and dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damages to organs (lungs, central nervous system, inner ear) through prolonged or repeated exposure by inhalation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P201	Keep away from heat, hot surfaces, sparks, flames, and other ignition sources. No Smoking.
P202	Do not handle until all safety precautions have been read and understood.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P243	Take action to prevent static discharges.
P260	Do not breathe mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P364+P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance to local/regional/international regulations.

2.3 Other Hazards

Hazards not otherwise classified

Defats skin: Repeated exposure may cause skin dryness or cracking.

HMIS Hazard Rating: Health: 2; Flammability: 3 Physical Hazard: 0

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

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

Emergency overview

Appearance: Steel grey

Immediate effects: If inhaled: Dizziness, drowsiness, headaches, nausea, cough, blurred vision, fatigue. Eye contact: Irritation, redness, pain, blurred vision. Skin contact: Irritation, pain, redness. If swallowed: Nausea, vomiting, abdominal cramps, irritation, burning sensation, or dizziness.

Potential health effects

Primary Routes of entry: Eyes, ingestion, inhalation, and skin.

Signs and Symptoms of Overexposure: ND

Eyes: Liquid in contact with eyes may cause permanent eye damage.

Skin: May cause skin irritation and possible pain and stinging if the skin is abraded.

Ingestion: May cause respiratory and digestive tract irritation.

Inhalation: Solvents may cause respiratory tract irritation, headache, and possible dizziness.

Chronic Exposure: Prolonged and repeated exposure may cause dermatitis, defatting of the skin, liver and kidney damage, and adverse central nervous system effects.

Chemical Listed As Carcinogen Or Potential Carcinogen: Nickel

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 mg/m ³	ACGIH TWA mg/m ³	NTP	IARC	OSHA regulated
Nickel (7440-02-0)	30-60	1.0	1.5	Yes	2B	Yes
Toluene (108-88-3)	7-13	200ppm	20ppm	No	Group 3	No
Acetone (67-64-1)	5-10	1000ppm	500ppm	No	No	No
Isobutyl acetate (110-19-0)	1-5	NE	NE	No	No	No
Heptan-2-one (110-43-0)	1-5	NE	NE	No	No	No
Ethanol (64-17-5)	1-5	1000ppm	1000ppm	No	No	No
Talc (14807-96-6)	1-5	20mppcf	2	No	No	No
Ethyl acetate (141-78-6)	1-5	NE	400ppm	No	No	No
1-Methoxy-2-propanol acetate (108-65-6)	0.5-1.5	NE	NE	No	No	No

mppcf: Millions of particles per cubic foot of air for talc not containing asbestos

Section 4: First Aid Measures

If accidental overexposure is suspected

Exposure Condition, GHS Code: Precautionary Statement

Eye(s) Contact:

Symptoms: Immediate: irritation, redness.

Response: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. If eye irritation persists: Get medical attention.

Skin Contact:

Symptoms: Immediate: irritation, pain, redness; Delayed: dry skin, rash.

Response: Take off contaminated clothing and wash it before reuse. Wash with plenty of water.

If skin irritation or rash persists, get medical attention.

Inhalation:

Symptoms: Immediate: dizziness, drowsiness, headaches, nausea, cough, blurred vision, fatigue.

Response: Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell, call a POISON CENTER/doctor. If exposed or concerned: Get medical advice.

Ingestion:

Symptoms: Immediate: nausea, sore throat, diarrhea, drowsiness, or dizziness.

Response: Call a POISON CENTRE/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If exposed or concerned: Get medical advice.

Note to physician

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures

Flash Point: -17°C. Lower bound FP estimate is based on the closed cup value for the acetone component.

Flammable Limits: LFL 1% UFL 12% (in volume %)

Auto-ignition point: $\geq 315^{\circ}\text{C}$. Values based on 1-methoxy-2-propanol acetate, which is the component with the lowest auto-ignition value.

Fire Extinguishing Media: Use dry chemical, carbon dioxide, or chemical foam to extinguish

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full fire-fighting turn-out gear for fire-fighting

Unusual Fire and Explosion Hazards: Will burn if involved in a fire. The liquid may float on water and ignite. Vapors are heavier than air, and may travel to sources of ignition near the ground. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion. Produces irritating and toxic fumes in fires or in contact with hot surfaces. May produce very toxic nickel carbonyl gas in the presence of carbon monoxide in a reducing atmosphere.

Hazardous combustion products: Produces CO, CO₂, nitrous oxides, nickel oxides, and smoke. May produce a very toxic nickel carbonyl gas in presence of CO.

DOT Class: Flammable

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection.

Precautions for response: Do not breathe the mist/spray/vapors. Remove or keep away all sources of extreme heat or open flames.

Cleaning: Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound (such as soil, sand, vermiculite) onto spill, then sweep into the container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water to remove the last traces of residue.

Environmental precautions: Avoid releasing to the environment. Prevent spill from entering drains and waterways.

Recommendation: A metal container is suggested. Dispose of spill waste according to Section 13

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.

Prevention: Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe mist/vapors/spray. Do not eat, drink, or smoke when using this product. Store in well-ventilated place. Store locked up.

Handling: Wear protective gloves/protective clothing/eye protection. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Avoid release to the environment.

Storage temperature: Keep cool.

Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection

Substances with occupational exposure limit values

Chemical name	Country/provinces	Long term exposure limits (PEL)	Short term exposure limits (STEL)
Nickel	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	1.5 mg/m ³ 1 mg/m ³ 1.5 mg/m ³ 0.05 mg/m ³ 1 mg/m ³ 1mg/m ³	Not established Not established Not established Not established Not established Not established
Toluene	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	20 ppm 200 ppm 50 ppm 20 ppm 20 ppm 100 ppm	Not established 300 ppm Not established Not established Not established 150 ppm
Acetone	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 ppm 1000 ppm 500 ppm 250 ppm 500 ppm 750 ppm	750 ppm Not established 750 ppm 500 ppm 750 ppm 1000 ppm
Isobutyl acetate	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	150 ppm 150 ppm 150 ppm 150 ppm 150 ppm 150 ppm	Not established Not established Not established Not established Not established Not established
Heptan-2-one	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	50 ppm 100 ppm 50 ppm 50 ppm 25 ppm 50 ppm	Not established Not established Not established Not established Not established Not established
Ethanol	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	Not established 1000 ppm 1000 ppm Not established Not established 1000 ppm	1000 ppm Not established Not established 1000 ppm 1000 ppm Not established
Talc (non-asbestos fiber)	ACGIH USA OSHA PEL Canada AB Canada BC	2 mg/m ³ 20 mppcf ^{a)} 2 mg/m ³ 2 mg/m ³	Not established Not established Not established Not established

	Canada ON Canada QC	2 mg/m ³ 3 mg/m ³	Not established Not established
Ethyl acetate	ACGIH USA OSHA PEL Canada AB Canada BC Canada ON Canada QC	400 ppm 400 ppm 400 ppm 150 ppm 400 ppm 400 ppm	Not established Not established Not established Not established Not established Not established
1-methoxy-2-propanol acetate	ACGIH USA OSHA WEEL Canada AB Canada BC Canada ON Canada QC	Not established 50 ppm Not established 50 ppm 50 ppm Not established	Not established Not established Not established 75 ppm Not established Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH1, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Million particles per cubic foot of air, based on impinge samples counted by light-field technique.

Engineering Controls

Ventilation required: Keep airborne concentrations below exposure limits given in Section 3.

Recommendation: Respect the time weighted average of 20 ppm for toluene.

Personal Protection Equipment

Respiratory protection: For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges. Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus. RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional. Recommendation: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

Protective gloves: For likely contacts, use of protective butyl rubber, fluorinated rubber, or other chemically-resistant gloves. For incidental contacts, use nitrile, neoprene, PVC gloves, or other chemically-resistant gloves.

Skin protection: Wear appropriate protective clothing to prevent skin contact.

Eye protection: Wear appropriate protective eyeglasses or chemical safety goggles. Recommendation: Use safety glasses with lateral protection (side shields).

General hygiene considerations: Wash hands thoroughly with water and soap after handling.

Additional clothing and/or equipment: ND

Exposure Guidelines

See Composition/Information on Ingredients (Section 3)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Steel grey liquid.

Odor (threshold): Benzene like, sweetish (2 ppm)

Specific Gravity (H₂O=1): 1.67 @25°C

Vapor Pressure (mm Hg): 100 hPa [75 mmHg]

Vapor Density (air=1): >2

Percent Volatile by volume: ND

VOC (Volatile Organic Content) = 27% [466 g/L]

Evaporation Rate (butyl acetate=1): Fast

Boiling Point: ≥56 °C

Freezing point / melting point: NE

Partition Coefficient: NE

Viscosity: $\geq 34 \text{ mm}^2/\text{s}$ @40°C

pH: NE

Solubility in Water: Partial

Molecular Weight: NA

Section 10: Stability and Reactivity

Stability: Stable at normal temperatures and pressures.

Conditions to Avoid: Ignition sources, open flames, excessive heat, and incompatible substances.

Materials to Avoid (Incompatibility): Strong oxidizing agents, strong acids, strong bases, ammonium nitrate, perchlorates, phosphorus, selenium, and sulfur.

Reactivity: The nickel can react vigorously with acids and liberate hydrogen, which can form an explosive mixture in air. Nickel may react with carbon monoxide in a reducing atmosphere to form a very toxic nickel carbonyl gas.

Hazardous Decomposition Products: Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of exposure: eyes, ingestion, inhalation, and skin.

Symptoms summary

Eyes	Cause eye redness and severe irritation.
Skin	May cause skin redness and mild irritation.
Inhalation	May cause drowsiness, dizziness, cough, headaches, nausea, unconsciousness.
Ingestion	May cause nausea, sore throat, and diarrhea (see inhalation symptoms).
Chronic	Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin. Chronic inhalation exposure to nickel dust or mist may affect the central nervous system, damage lungs, and lead to hearing loss with co-exposure to loud noises. Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.

Results of component toxicity test performed

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation a)
Nickel	5,000 mg/kg Rat	NE	NE	10 mg/m ³ 2 h Mouse
Toluene	636 mg/kg Rat	12,124 mg/kg Rabbit	49 g/m ³ 4h Rat	200 ppm Human
Acetone	5,800 mg/kg Rat 5,340 mg/kg Rabbit	>9 400 µL/kg Guinea pig	44 g/m ³ 4 h Rat 50.1 g/m ³ 8 h Rat	10 mg/m ³ 6 h Human 30 g/m ³ 2 h Rat
Isobutyl acetate	13,400 mg/kg Rat	>17 400 mg/kg Rabbit	NE	8 000 ppm 4h Rat LCLo b)
2-heptanone	1,670 mg/kg Rat 730 mg/kg Mouse	12,600 µL/kg Rabbit	NE	7,000 mg/m ³ 4 h Guinea pig
Ethanol	7,060 mg/kg Rat 3,450 mg/kg Mouse	NE	20,000 ppm 10 h Rat 39 g/m ³ 4 h Mouse	2,500 mg/m ³ 20 min Human 50,000 mg/m ³ 2 h Mouse
Talc	NE	NE	NE	17 mg/m ³ 6 h 26 d Rat
Ethyl Acetate	5,620 mg/kg Rat 4,100 mg/kg Mouse	>20,000 µL/kg Rabbit	45 g/m ³ 2 h Mouse	1,105 mg/m ³ 4 h Rat
1-methoxy-2-propanol acetate	8,532 mg/kg Rat >5,000 mg/kg Mouse	>5 g/kg Rabbit	NE	400 ppm Human

a) Lowest published lethal concentration

b) Lethal concentration low

Human experience

Skin corrosion/irritation: The toluene component is a known severe skin irritant. Prolonged or repeated skin contact may cause dermatitis.

Serious eye damage/irritation: Acetone, ethanol, and ethyl acetate cause serious eye irritations. Contains mechanically abrasive particles.

Sensitization (allergic reactions): Nickel may cause skin sensitization in humans.

Carcinogenicity (risk of cancer): Nickel is classified as a suspect carcinogen based on animal intratracheal instillation (intubation) or interperitoneal (in body cavity) injection studies. A reliable 2008 study by Oller et al. shows no carcinogenicity for the nickel metal via normal inhalation route. Evidence of carcinogenicity of ethanol relates to excessive alcoholic beverage consumption, and doesn't relate to exposure risks when used in the workplace or as a non-comestible consumer product.

Elemental Nickel [7440-02-0]

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A5: Not suspected as human carcinogen

CA Prop 65: Listed as a carcinogen

NTP: Reasonably anticipated to be a human carcinogen

Ethanol [CAS# 64-17-5]

IARC Group 1: Possibly carcinogenic to humans in the form of alcoholic beverages (not ethanol)

ACGIH A4: Not classified as a human carcinogen

CA Prop 65: Listed as a carcinogen when consumed as a beverage

NTP: When in alcoholic beverage consumption, it is listed as a known carcinogen

Mutagenicity (risk of heritable genetic effects): Not known

Reproductive Toxicity (risk to sex functions): Toluene, ethanol, and acetone present reproductive and developmental hazards at high doses (>13,000 µg/day).

Teratogenicity (risk of fetus malformation): Harmful to unborn fetus in large doses.

STOT-single exposure: Inhalation of toluene may affect the central nervous system.

STOT-repeated exposure: Nickel particles can damage the respiratory tract leading to inflammation, lung fibrosis, and accumulation of nickel particles in a rat study. Contains 12% toluene, which is a Cat 2 STOT repeated exposure hazard for the central nervous system and cochlear systems. Toluene is an ototoxic chemical according to rat studies: inhalation exposure in the presence of noise may lead to cochlear impairment.

Aspiration hazard: Viscosity at 40 °C is >20.5 mm²/s, thus not classified as aspiration hazard.

This product **does** contain compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information

Acute ecotoxicity: Harmful to aquatic life with long lasting effects.

Chronic Ecotoxicity: Harmful to aquatic life with long lasting effects. Avoid release to the environment. Collect spillage.

Biodegradability: The nickel content is not biodegradable.

Note: Nickel can be recovered from the waste to reclaim the value of the nickel.

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: ND

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

Classified as Consumer Commodity. Ground USA: - 4L size and smaller

US DOT Information: Proper shipping name: Paint

Hazard Class: 3

Packaging group: II
UN Number: UN1263
IATA: Proper shipping name: Paint
Hazard Class: 3
Packing group: II
UN Number: UN1263
Marine Pollutant: None listed
Canadian TDG:
Proper shipping name: Paint
Hazard class: 3
Packing group: II
UN Number: UN1263

Section 15: Regulatory Information

United States Federal Regulations

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

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product contains toluene (CAS# 108-88-3), which is listed as hazardous air pollutants.

SARA: (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

SARA Title III: This product contains Toluene (CAS# 108-88-3, 13%) and Nickel (CAS #7440-02-0 (45%), toxic chemicals subject to the reporting requirements of section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372

RCRA: ND

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product contains toluene (CAS# 108-88-3) and nickel (CAS# 7440-02-0) subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA: (Toxic Substances Control Act of 1976, USA) All substances are TSCA listed.

CERCLA: The following components are listed: Toluene (CAS# 108-88-3) RQ is 1000lbs, Acetone (67-64-1)RQ is 5000 lbs, Nickel (CAS #7440-02-0) RQ is 100 lbs, Ethyl acetate (141-78-6) RQ is 5000lbs.

State Regulations

California Proposition 65: Warning! This product is or contains chemical(s) known to the state of California to cause cancer or reproductive harm. This product contains Nickel,(metallic), which is listed as a carcinogen. This product contains toluene, which is listed as reproductively toxic.

International Regulations

Canada WHMIS: Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Europe EINECS Numbers: ND

Europe:

RoHS: This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

Section 16: Other Information

Label Information:

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.

MSDS Form 0013F1 V2