TED PELLA, INC.
Microscopy Products for Science and Industry

Material Safety Data Sheet
Product No. 16053, 16053-20, 16053-SPC PELCO® Colloidal Graphite
Issue Date (12-21-09)
Review Date (04-12-12)

Section 1: Product and Company Identification

Product Name: 16053 PELCO® Colloidal Graphite
Synonym: Dag 154
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: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA TWA mg/m3	ACGIH TWA mg/m3	NTP	IARC	OSHA regulated
Isopropanol (67-63-0)	60-100	400 PPM 980mg/m3	200 PPM	No	No	No
Graphite (7782-42-5)	10-30	15 mppcf	2	No	No	No
n-Butyl Alcohol (71-36-3)	1-5	100 PPM 300mg/m3	20 PPM	No	No	No
Propylene Glycol Methyl Ether (107-98-2)	1-5	ND	100 PPM	No	No	No

Section 3: Hazard Identification

Emergency overview
Appearance: Viscous black fluid.
Immediate effects: Irritant. Harmful if swallowed, Flammable.
Potential health effects
Primary Routes of entry: Inhalation, ingestion.
Signs and Symptoms of Overexposure: Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.
Eyes: Will cause eye irritation. The vapor and the liquid may cause burning, intense irritation and excessive watering of the eye.

Skin: Repeated or prolonged shin contact may result in mild irritation. May be absorbed through the skin. Repeated or prolonged contact may cause defatting of the skin resulting in dryness, cracking and dermatitis.
Ingestion: May cause irritation of mouth, throat and digestive tract and depression of the central nervous system. Slightly toxic. Ingestion may cause signs of alcoholic intoxication, the symptoms of which include impaired sensory function: muscular incoordination; changes in mood, personality and behavior and impaired metal activity. High levels will produce deep coma and possibly death. May cause nausea, vomiting and diarrhea. Aspiration into the lungs may cause chemical pneumonitis which can be fatal.
Inhalation: Vapors may be an irritant to the respiratory tract. The vapor has anesthetic properties and when inhaled at concentration above the occupational exposure limit, it may cause respiratory tract irritation, headaches, nausea, dizziness and loss of coordination are indications that vapor and/or mist levels are too high. Vapors and mists generated from this product may be harmful if inhaled. Dusts generated from sanding and grinding on surfaces coated with this product may be harmful if inhaled.
Chronic Exposure: This product contains isopropyl alcohol. Long term exposures to isopropyl alcohol vapors have produced liver, kidneys and testicular effects in experimental animals. This product contains graphite which can accumulate in lung tissue after long-term exposure to the dust. The potential for such exposure from the use of this product is very limited.
Chemical Listed As Carcinogen or Potential Carcinogen: No
See Toxicological Information (Section11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: If this product is splashed into the eyes, flush eyes immediately with plenty of water for at least 15 minutes. Obtain immediate medical attention
Skin Contact: If skin contact occurs with this product, flush immediately with plenty of water, followed by washing with soap and water. If symptoms develop, obtain medical attention.
Inhalation: If excessive amounts of vapors or mists from this product are inhaled, remove to fresh air. Apply artificial respiration and other supportive measures as required. Consult a poison center, emergency room or lung specialist for additional information and guidance.
Ingestion: Do not attempt to give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Keep at rest. Aspiration into the lungs may cause chemical pneumonitis, which can be fatal. If individual is conscious give water to dilute stomach contents. Get prompt medical attention.

Note to physician

Treatment: ND
Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures
Flash Point: 11.6 °C (52.9 °F), (Tagliabue Closed Tester)
Lower explosion limit: 2 %/vol. Upper explosion limit: 12 %/vol
Auto-ignition point: 398.8 ºC
Fire Extinguishing Media: Alcohol foam, water spray or fog, CO2, dry chemical. Do not use direct water stream on burning liquid.
Special Fire Fighting Procedures: A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Cool exposed equipment with water spray.
Unusual Fire and Explosion Hazards: Dangerous fire hazard when exposed to heat of flame. Combustion will evolve toxic and irritant vapors. The vapor of this product can form potentially explosive mixtures with the air. The vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back. Containers can build up pressure if exposed to heat (fire) and may explode. Explosive when mixed with oxidizing substances.
Hazardous combustion products: Carbon monoxide, carbon dioxide, unknown hydrocarbons.
DOT Class: Flammable

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: Spills: Shut off ignition sources; no flares, smoking or flames in hazard area. Stop leak if you can do it without risk. Water spray may reduce vapor; but it may not prevent ignition in closed spaces. Isolate area until vapors have dispersed.
Small Spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal.
Large spills: Dike far ahead of liquid spill for later disposal.
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: Keep away from heat, sources of ignition and direct sunlight. Keep container properly sealed when not in use. Keep in well ventilated place. Store in a cool, dry area away from heat, sparks or fire. All handling equipment must be properly grounded. Keep away from oxidizing agents. Empty containers may retain hazardous properties. Follow all MSDS/label warnings even after container is emptied.
Sensitivity to static electricity: Yes, ground large containers securely when transferring contents. Wear low static or properly grounded shoes. All handling equipment must be properly grounded.
Storage temperature: Less than 90 ºF.
Storage Pressure: Atmospheric.

Section 8: Exposure Controls / Personal Protection
Engineering Controls

Ventilation required: Use in a well-ventilation area or chemical fume hood. Provide local exhaust ventilation system to meet published exposure limits.

Personal Protection Equipment

Respiratory protection: Where suitable engineering controls are not fitted or are inadequate, wear suitable protective equipment. NIOSH approved respirator if required. Self-contained breathing apparatus in emergency and non-routine situations.
Protective gloves: Impervious neoprene or rubber gloves are recommended.
Skin protection: Wear protective clothing, including an impermeable apron or disposable suit and gloves. This protective equipment should be constructed of materials(s) which are appropriate to prevent contact with the chemicals listed in the ingredient Section 2 of the MSDS.
Eye protection: Vapor tight chemical-type splash goggles should be worn when the possibility exists for eye contact due to splashing or spraying of liquid or the generation of airborne particles or vapors
Additional clothing and/or equipment: Eye washing equipment must be provided at handling areas.

Exposure Guidelines

See Composition/Information on Ingredients (Section 2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Viscous black fluid.
Odor (threshold): 7.5 ppm
Odor: Alcohol
Specific Gravity (H_2O=1): 0.89 g/ml
Bulk density: 7.4 lb/gal
Vapor Pressure (mm Hg): 33 mm Hg at 20°C
Vapor Density (air=1): 2.07
Volatiles: 75-85 %/wt
Volatile Organic Compounds, VOC: 710 g/liter

Evaporation Rate (butyl acetate=1): 2.9
Boiling Point: 82° C
Freezing point / melting point: -88.8° C
pH as is: NA
Solubility in Water: Miscible
Partition coefficient (n-octanol/water): -0.14
Viscosity: 200-800 cPs (25 ºC)
Molecular Weight: NA

Section 10: Stability and Reactivity

Stability: Stable. Material is stable under normal temperatures and pressures.
Conditions to Avoid: Keep away from heat, sparks and flame. Protect material from direct sunlight. Keep away from incompatible materials.
Materials to Avoid (Incompatibility): Strong oxidizers, aldehydes, strong acids.
Hazardous Decomposition Products: Thermal decomposition products are hazardous

and/or toxic. Carbon monoxide, carbon dioxide, unknown hydrocarbons.
Hazardous Polymerization: Will not occur.
Reactivity: Can form peroxides on contact with air.

Section 11: Toxicological Information
Results of component toxicity test performed:
Isopropanol (CAS# 67-73-0): Rat, Oral: LD50 = 5045 mg/kg. Rabbit, Dermal: LD50 12800 mg/kg. Rat, Inhalation LC50 (4hr) 16000 ppm.
n-Butyl alcohol (CAS# 71-36-3): Rat, oral: LD50 = 790 mg/kg. Rabbit, Dermal: LD50 3400 mg/kg. Rat, Inhalation LC50 (4hr) 8000 ppm.
Propylene Glycol Methyl Ether (CAS# 107-98-2): Rat, oral: LD50 = 6.6g/kg. Rabbit, Dermal: LD50 13 g/kg. Rat, Inhalation LC50 (4hr) 15000 ppm.
Human experience: High exposures by inhalation may produce anesthetic effects. Atmospheric concentrations in excess of the occupational exposure limit may lead to headache, nausea, and irritation of the eyes, nose, and tract.
This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen. There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use

---

Section 12: Ecological Information
Ecological Information:
Mobility: The product is soluble in water.
Ecotoxicity: Not harmful to aquatic organisms.
Persistence and degradability: Readily biodegradable.
Aquatic toxicity: NE
Chemical Fate Information: NE

Section 13 Disposal Considerations
RCRA 40 CFR 261 Classification: Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous wastes.
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information
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
IMO: Proper shipping name: Paint

Class: 3
UN Number: UN1263
Packing group: II
Marine Pollutant: None
Canadian TDG: All components of this product are listed or excluded from listing on the Canadian domestic Substances list (DLS) Inventory.

Section 15: Regulatory Information
United States Federal Regulations
MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.
SARA: Section 302, components, none listed.
SARA Title III: This product contains a chemical which is listed in Section 313 at or above DE MINIMIS concentrations. The following listed chemicals are present: See EPA Consolidated List of Chemicals (EPCRA)
n-Butyl Alcohol (71-36-3) 4.6%, Section 313
Isopropanol (67-63-0) 70.2%, Section 313
RCRA: ND
TSCA: This product is manufactured in compliance with all provisions of Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.
CERCLA: n-Butyl Alcohol (71-36-3) <5%, RQ: 5000 lbs (2270 Kg)
State Regulations
California Proposition 65: None
International Regulations
Canada WHMIS: All components of this product are listed or excluded from listing on the Canadian domestic Substances list (DLS) Inventory.
Europe EINECS Numbers: ND

Section 16: Other Information
Label Information: Flammable.
European Risk and Safety Phrases: ND
European symbols needed: ND
Canadian WHMIS Symbols: ND
HMIS® Hazard Rating: Health: **2**; Flammability: **3**; Reactivity: **0**
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)
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.