Section 1: Product and Company Identification

Product Name: Graphite Extender
Synonym: 2-Propanol, Isopropanol, sec-Propyl alcohol, Isopropyl alcohol.

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](image) ![GHS07](image)

GHS Categories

<table>
<thead>
<tr>
<th>GHS Code</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS02</td>
<td>Flammable</td>
<td>Flammable liquid and vapor.</td>
</tr>
<tr>
<td></td>
<td>Flamm. Liq. 2</td>
<td>H225: Highly flammable liquid and vapor.</td>
</tr>
<tr>
<td>GHS07</td>
<td>Irritant</td>
<td>Eye irritation 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H319: Causes serious eye irritation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H336: May cause drowsiness or dizziness.</td>
</tr>
</tbody>
</table>

2.2 Label elements

Hazard Pictograms

![GHS02](image) ![GHS07](image)

Signal word: DANGER

Hazard statements

H225  Highly flammable liquid and vapor.
H319  Causes serious eye irritation.
H336  May cause drowsiness or dizziness.

Precautionary statements

P210  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233  Keep container tightly closed.
P240  Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other Hazards

Hazards not otherwise classified (HNOC) or not covered by GHS
May form explosive peroxides.

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: Assessment not available, as chemical safety assessment not required/not conducted.
PBT: ND
vPvB: ND

Emergency overview
Appearance: Clear liquid
Immediate effects: Causes serious eye irritation. May cause drowsiness or dizziness.

Potential health effects
Primary Routes of entry: Inhalation, Ingestion and eye and skin contact.
Signs and Symptoms of Overexposure: Central nervous system depression, prolonged or repeated exposure can cause: Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects. Aspiration may lead to Lung oedema, Pneumonia. Kidney - Irregularities (Based on Human Evidence)
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.
Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin: Wash off with soap and plenty of water. Consult a physician
Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
Chronic Exposure: Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects.
Chemical Listed As Carcinogen Or Potential Carcinogen: None
See Toxicological Information (Section 11)

**Potential environmental effects**
See Ecological Information (Section 12)

### Section 3: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Principle Hazardous Component(s)</th>
<th>%</th>
<th>OSHA PEL mg/m³</th>
<th>ACGIH TLV mg/m³</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol (67-63-0)</td>
<td>≤100</td>
<td>980 ppm</td>
<td>491 ppm</td>
<td>No</td>
<td>3</td>
<td>No</td>
</tr>
<tr>
<td>EC-No. 200-661-7</td>
<td></td>
<td>400 ppm</td>
<td>200 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index-No. 603-117-00-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2: H225</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Irrit. 2A: H319</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 3: H336</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section 4: First Aid Measures

**If accidental overexposure is suspected**

Eye(s) Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact: Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Note to physician
Treatment: General advice, consult a physician. Show this safety data sheet to the doctor in attendance.
Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures
Flash Point: 12.0 °C - closed cup.
Flammable Limits: Upper explosion limit: 12.7 %(V), Lower explosion limit: 2 %(V).
Auto-ignition point: 425.0 °C
Fire Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special Fire Fighting Procedures: Wear self-contained breathing apparatus for firefighting if necessary. Use water spray to cool unopened containers.
Unusual Fire and Explosion Hazards: Beware of vapors accumulating to form explosive concentrations.
Hazardous combustion products: Carbon oxides.
DOT Class: Flammable

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled:
Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.
Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.
Storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and store under inert gas. Hygroscopic.
Storage temperature: Store in cool place.
Storage Pressure: NA
### Section 8: Exposure Controls / Personal Protection

#### Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>TWA 200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Central Nervous System impairment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not classifiable as a human carcinogen</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>400 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
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<th>CAS-No.</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>400.000000 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The value in mg/m³ is approximate.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-36-0</td>
<td>Acetone</td>
<td>40.0000 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

#### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
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<td>40.0000 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>
**Engineering Controls**
Ventilation required: Wear gas mask with filter type A if conc. in air > exposure limit. Use with good ventilation or use in chemical fume hood.

**Personal Protection Equipment**
Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective gloves: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Skin protection: Wear protective clothing and gloves.

Eye protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Additional equipment: Eye wash station.

**Exposure Guidelines**
See Composition/Information on Ingredients (Section 3)

---

**Section 9 Physical and Chemical Properties**
Appearance and Physical State: Colorless liquid
Odor (threshold): Alcohol-like (ND)
Specific Gravity (H₂O=1): 0.785 g/mL at 25 °C
Vapor Pressure (mm Hg): 43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F)
Vapor Pressure (mm Hg): 58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F)
Vapor Density (air=1): ND
Percent Volatile by volume: ND
Evaporation Rate (butyl acetate=1): 3.0
Boiling Point: 82 °C (180 °F)
Melting point/range: -89.5 °C
pH: ND
Solubility in Water: Completely soluble
Formula: C₃H₈O
Molecular Weight: 60.10 g/mo
Surface tension: 20.8 mN/m at 25.0 °C (77.0 °F)

---

**Section 10: Stability and Reactivity**
Stability: Stable under normal conditions. Test for peroxide formation before distillation or evaporation or discard after 1 year.
Conditions to Avoid: Heat, sparks and flame.
Materials to Avoid (Incompatibility): Oxidizing agents, Acid anhydrides, Aluminum, Halogenated compounds, Acids
Possibility of hazardous reactions: Vapors may form explosive mixture with air.
Hazardous Decomposition Products: ND
Hazardous Polymerization: ND
Section 11: Toxicological Information
Results of component toxicity test performed:
Acute toxicity
  LC50 Inhalation - rat - 8 h - 16000 ppm.
  LD50 Dermal - rabbit - 12,800 mg/kg.
Skin corrosion/irritation: Skin – rabbit Result: Mild skin irritation.
Serious eye damage/eye irritation: Eyes – rabbit: Result: Eye irritation - 24 h.
Respiratory or skin sensitisation: No data available.
Germ cell mutagenicity: No data available.
Reproductive toxicity: No data available.
Specific target organ toxicity - single exposure: Inhalation, Oral - May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure: No data available.
Aspiration hazard: No data available.
RTECS: NT8050000.
Human experience: Central nervous system depression, prolonged or repeated exposure can cause: nausea, headache, vomiting, narcosis, drowsiness. Overexposure may cause mild, reversible liver effects. Aspiration may lead to lung oedema, pneumonia.
Kidney – Irregularities.
This product does not contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information
Toxicity:
  Toxicity to fish          LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h
  Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
     other aquatic           Immobilization EC50 - Daphnia magna (Water flea) - invertebrates
     6,851 mg/l - 24 h
  Toxicity to algae    EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h
                      EC50 - Algae - > 1,000.00 mg/l - 24 h
Persistence and degradability: ND
Bioaccumulative potential: No bioaccumulation is to be expected (log Pow <= 4).
Mobility in soil: ND
Chemical Fate Information: ND

Section 13 Disposal Considerations
RCRA 40 CFR 261 Classification: ND
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
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: Isopropanol
Hazard Class: 3
Packaging group: II
UN Number: UN1219
IATA: Proper shipping name: Isopropanol
Hazard Class: 3
Section 15: Regulatory Information

United States Federal Regulations
SARA Title III: Listed on SARA Section 313 (Specific toxic chemical listings).
RCRA: ND
TSCA: Listed on the United States TSCA (Toxic Substances Control Act) inventory.
CERCLA: ND

State Regulations
Massachusetts Right To Know Components
2-Propanol CAS-No. 67-63-0 Revision Date: 1987-01-01

Pennsylvania Right To Know Components
2-Propanol CAS-No. 67-63-0 Revision Date: 1987-01-01

New Jersey Right To Know Components
2-Propanol CAS-No. 67-63-0 Revision Date: 1987-01-01

California Proposition 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

International Regulations
Canada WHMIS: Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Europe EINECS Numbers: 200-661-7

Section 16: Other Information
Label Information: Flammable, Irritant.
European Risk and Safety Phrases: F, Xi, R11 - R36 - R67
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

Full text of H-Statements referred to under sections 2 and 3.
Eye Irrit. Eye irritation
Flam. Liq. Flammable liquids
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
STOT SE Specific target organ toxicity - single exposure
Full text of R-phrases referred to under sections 2 and 3
F Highly flammable
Xi Irritant
R11 Highly flammable.
R36 Irritating to eyes.
R67 Vapors may cause drowsiness and dizziness
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 0013F1 V3