Section 1: Product and Company Identification

Product Name: Mikrostik™
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:

GHS Categories:
GHS02 Flame
   Flam. liq. 2 H225: Highly flammable liquid and vapor.
GHS08 Health Hazard
   Resp. Sens. 1 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
   Repr. 2 H361d: Suspected of damaging the unborn child.
GHS07 Irritant
   Acute Tox. 4 H302: Harmful if swallowed.
   Eye Irrit. 2 H319: Causes serious eye irritation.
   STOT SE 3 H336: May cause drowsiness or dizziness.

2.2 Label Elements

Signal Word: DANGER

Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard Pictograms:
Hazard-determining components of labeling:
Methyl Ethyl Ketone
Polyvinyl Chloride Resin
Toluene

Hazard statements
H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361d Suspected of damaging the unborn child.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P210 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.

Results of PBT and vPvB assessment:
PBT: NA
vPvB: NA

Emergency overview:
Appearance: Clear to hazy viscous liquid
Immediate effects: ND

Potential health effects
Primary Routes of entry: Dermal, inhalation, ingestion
Signs and Symptoms of Overexposure: ND
Eyes: Severe irritation, redness, tearing blurred vision
Skin: Moderate irritation, defatting dermatitis
Ingestion: Gastrointestinal irritation, nausea, vomiting, and diarrhea
Inhalation: Nasal and respiratory irritation, dizziness, fatigue, nausea, headache and narcosis. Prolonged or repeated breathing of high concentrations may cause liver, kidney damage, and neural dysfunction
Chronic Exposure: ND
Chemical Listed As Carcinogen Or Potential Carcinogen: Toluene
See Toxicological Information (Section11)

Potential environmental effects
See Ecological Information (Section 12)
Section 3: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)</th>
<th>%</th>
<th>OSHA PEL mg/m³</th>
<th>ACGIH TLV mg/m³</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA regulated Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Ethyl Ketone (78-93-3) EINECS: 201-159-0</td>
<td>78-80%</td>
<td>590</td>
<td>200 ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Polyvinyl Chloride Resin (9002-86-2)</td>
<td>12-14%</td>
<td>NE</td>
<td>NE</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Isobutyl Acetate (110-19-0) EINECS: 203-745-1</td>
<td>4-6%</td>
<td>700</td>
<td>20 ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Toluene (108-88-3) EINECS: 203-625-9</td>
<td>2-4%</td>
<td>200</td>
<td>50 ppm</td>
<td>No</td>
<td>3</td>
<td>No</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

If accidental overexposure is suspected

General information: Symptoms of poisoning may even occur after several hours; therefore, medical observation for at least 48 hours after the accident.

Eye(s) Contact: Flush with water for at least 15 minutes. Get medical attention.

Skin Contact: Wash thoroughly with soap and water. Remove all contaminated clothing.

Inhalation: Remove to fresh air. If breathing difficult administer oxygen. If breathing has stopped give artificial respiration. Call a physician.

Ingestion: Do not induce vomiting. Call a physician.

Section 5: Fire Fighting Measures

Flash Point: -6 °C

Flammable Limits: LEL: 1.2
Auto-ignition point: Product is not self-igniting.


Unusual Fire and Explosion Hazards: Closed containers may explode if exposed to temperatures exceeding the boiling point. Use water spray to keep closed containers cool. Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Special firefighting procedures: Wear positive pressure self-contained breathing apparatus.

Hazardous combustion products: Carbon dioxide and carbon monoxide

DOT Class: Flammable

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:
Wear protective gloves and glasses.  
Do not allow to enter sewers/surface or ground water.  
Eliminate all ignition sources immediately. Dike large spills. Collect with vermiculite or other absorbent material. If TLV is exceeded personnel should wear air supplied respirator or for large spills impervious clothing and boots are advised.  
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:  
Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols. Protect against electrostatic charges.  
Keep container tightly sealed. Store in cool, dry conditions in well-sealed receptacles. Protect from heat and direct sunlight. Keep away from heat, sparks, flame.  
Storage temperature: Room temperature  
Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection  
Engineering Controls  
Ventilation required: Sufficient mechanical ventilation should be provided to maintain exposure below TLV.  
Control parameters:  

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>78-93-3 Methyl Ethyl Ketone</strong></td>
</tr>
<tr>
<td>WEL</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>110-19-0 Iso-butyl Acetate</strong></td>
</tr>
<tr>
<td>WEL</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>108-88-3 Toluene</strong></td>
</tr>
<tr>
<td>WEL</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredients with biological limit values:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>78-93-3 Methyl Ethyl Ketone</strong></td>
</tr>
<tr>
<td>BMGV</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

Personal Protection Equipment  
General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Avoid contact with the eyes and skin. Eyewash advised. Remove any contaminated clothing. Wash hands thoroughly before eating or smoking.  
Respiratory protection: If the TLV is exceeded a NIOSH/MSHA approved air supplied respirator is advised.  
Protective gloves: The glove material has to be impermeable and resistant to the product/the substance/the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Material of gloves: natural rubber or neoprene. Penetration of glove material: The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.  
Skin protection: Gloves and protective clothing.  
Eye protection: Tightly sealed goggles; chemical splash goggles are advised.

Exposure Guidelines
Section 9 Physical and Chemical Properties
Appearance and Physical State: Clear to hazy viscous liquid
Odor (threshold): Sharp pungent
Specific Gravity (H₂O=1): 0.85 g/cm³
Vapor Pressure (mm Hg): 71 mm Hg
Vapor Density (air=1): >1
Percent Volatile by volume: ND
Evaporation Rate (butyl acetate=1): >2
Boiling Point: 79 °C
Freezing point / melting point: ND
pH: ND
Solubility in Water: Partial
Molecular Weight: NA

Section 10: Stability and Reactivity
Stability: Stable
Conditions to Avoid: Temperatures exceeding 65 °C
Materials to Avoid (Incompatibility): Oxidizing agents
Hazardous Decomposition Products: Fire conditions, carbon dioxide and carbon monoxide
Hazardous Polymerization: Will not occur

Section 11: Toxicological Information
Results of component toxicity test performed:

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-93-3 Methyl Ethyl Ketone</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>616 mg/kg (mouse)</td>
</tr>
<tr>
<td>2737 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>6480 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Inhalarative</td>
</tr>
<tr>
<td>LC50/4 h</td>
</tr>
<tr>
<td>32 mg/l (mouse)</td>
</tr>
<tr>
<td>108-88-3 Toluene</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>636 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>14100 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
<tr>
<td>LC50/4 h</td>
</tr>
<tr>
<td>5320 mg/l (mouse)</td>
</tr>
<tr>
<td>110-19-0 Iso-butyl Acetate</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>13400 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>LD50</td>
</tr>
<tr>
<td>17400 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

On the skin: Irritant to skin and mucous membranes.
On the eye: Irritating effect.
Sensitization: May cause sensitizing effects.
Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant
This product DOES contain compounds listed by NTP or IARC or regulated by OSHA as a carcinogen. Toluene (108-88-3)
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction): Repr. 2
Section 12: Ecological Information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Additional ecological information:
General notes:
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: ND
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
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: Flammable liquid, n.o.s. (Methyl Ethyl Ketone solution)
Hazard Class: 3
Packaging group: III
UN Number: UN1993
IATA: Proper shipping name: Flammable liquid, n.o.s. (Methyl Ethyl Ketone solution)
Hazard Class: 3
Packaging group: III
UN Number: UN1993
IMO: Proper shipping name: Flammable liquid, n.o.s. (Methyl ethyl Ketone solution)
Class: 3
UN Number: UN1993
Packaging group: III
Marine Pollutant: No
Canadian TDG: Flammable liquid, n.o.s. (Methyl ethyl Ketone solution)
IMDG Page:
Limited quantities: 1L
Excepted quantities:
Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

Section 15: Regulatory Information

United States Federal Regulations
SARA: Components No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313: Toluene CAS-No. 108-88-3 Revision Date 2007-07-01
SARA Title III: SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard, Chronic Health Hazard
RCRA: ND
TSCA: All components are listed

**State Regulations**
California Proposition 65: This product contains Chemical(s) known to the State of California to cause reproductive harm: Toluene (108-88-3)

**International Regulations**
Canada WHMIS: ND
Europe EINECS Numbers: See Section 3.

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### Section 16: Other Information

- Label Information: Harmful by inhalation, ingestion and skin contact
- European Risk and Safety Phrases: ND
- European symbols needed: ND
- Canadian WHMIS Symbols: ND
- Hazard rating: Health: 2; Fire: 3; Reactivity: 0
- Estimated Hazard Rating.
  (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

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### 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