1. PRODUCT IDENTIFICATION

PRODUCT NAME: #514 UV Non-Porous Ink
PRODUCT USE: Coding and Marking
PANNIER P/N IU514-UV4K
PRODUCT COLOR: Invisible

Manufacturer/Supplier:
PANNIER CORPORATION
207 SANDUSKY STREET
PITTSBURGH, PA 15212-5823 U.S.A.

24 Hr Emergency Telephone Number: INFOTRAC 1-800-535-5053

2. HAZARDS IDENTIFICATION

Classification:
- Flammable Liquids Category 3
- Acute toxicity, Oral Category 5
- Acute toxicity, Inhalation Category 4
- Skin corrosion/Irritation Category 3
- Serious Eye Damage/eye irritation Category 1
- Reproductive toxicity Category 1B
- Skin Sensitization Category 1
- Aspiration hazard Category 1
- Specific target organ toxicity (single exposure) Category 3

Labeling: Symbols:

Signal Word: Danger
Hazard statements:
- H226 Flammable liquid and vapor
- H303 May be harmful if swallowed
- H316 Causes mild skin irritation
- H318 Causes serious eye damage
- H332 Harmful if inhaled
- H336 May cause drowsiness or dizziness
- H360 May damage fertility or the unborn child

Precautionary statements:
- P201 Obtain special instruction before use
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P305+P351+338 if in eyes: Rinse continuously with water for several minutes.
- Remove contact lenses if present and easy to do and continue rinsing.
- P308+P313 If exposed or concerned. Get medical advice/attention
- P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Wt. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methoxy-2-propanol</td>
<td>107-98-2</td>
<td>15-30</td>
</tr>
<tr>
<td>4-Hydroxy-4-methyl-2-pentanone</td>
<td>123-42-2</td>
<td>15-30</td>
</tr>
<tr>
<td>2-propanol</td>
<td>67-63-0</td>
<td>15-30</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Ingestion: if swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Eye contact: rinse thoroughly with plenty of water for at least 15 minutes and consulting position.

Skin contact: wash off with soap and plumbing of water. Consult a physician.

Inhalation: if three thin, move person into fresh air. If not breathing, if artificial respiration. Consult a physician.

most important symptoms and effects

Symptoms: causes eye damage. May be harmful if absorbed through skin. Harmful if inhaled. Causes respiratory tract irritation. Papers may cause drowsiness and dizziness. May be harmful if swallowed.

Indication of any immediate medical attention and special treatment needed

Notes to physician: treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: water fog, multipurpose foam, dry chemical, CO2.

Specific hazards in case of fire: fight as volatile liquid fire vapors are dense and may travel to remote ignition source.

Hazardous composition products: carbon oxides nitrogen oxides organic combustion products which may be toxic and/or irritating.

Protective equipment and precautions for firefighters: as in any fire, where self-contained breathing apparatus pressure demand. MSHA/N OSH (as approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: where chemical goggles, gloves, boots and protective clothing. Wear respirator if necessary. Avoid breathing vapors, missed or gas. Ensure adequate ventilation. Remove all sources of ignition and heat.

Environmental precautions: prevent additional discharge of material. Prevent material from entering sewers or water courses.

Methods and materials for containment and cleaning up: absorb small spills with San, filter grade, vermiculite or other inert absorb material. In place and they chemical waste container. For large spills. Contain with Sand or earth dikes. Dispose of waste in accordance with applicable government regulations.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with eyes. Wash face, hands, and any other exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing and eye/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Unscrew SLOWLY. Do not unscrew entirely until all pressure has been completely released area keep away from heat/sparks/open flames/hot surfaces. Empty containers may contain residues. Precautions apply to empty containers.
Conditions for safe storage:
Keep container tightly closed and store in a cool, dry and well ventilated place. Keep storage temperature between 4 – 32° C (40 – 90° F). Incompatible with strong oxidizing agents, strong acids, strong bases, alkali metals and halogens.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure guidelines:

<table>
<thead>
<tr>
<th>Chemical Name and CAS#</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDHL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol 107-98-2</td>
<td>TWA 100 ppm STEL 150 ppm</td>
<td>TWA 100 ppm TWA 360 mg/m³ STEL 150 ppm STEL 540 mg/m³</td>
<td>TWA 100 ppm TWA 360 mg/m³ STEL 150 ppm STEL 540 mg/m³</td>
</tr>
<tr>
<td>2-Hydroxy-4-methyl-2-pentanone 123-42-2</td>
<td>TWA 50 ppm TWA 240 mg/m³</td>
<td>IDLH 1800 ppm TWA 50 ppm TWA 240 mg/m³</td>
<td></td>
</tr>
<tr>
<td>2-Propanol 67-63-0</td>
<td>TWA 200 ppm TWA 980 mg/m³ STEL 500 ppm STEL 1225 mg/m³</td>
<td>IDLH 2000 ppm TWA 400 ppm TWA 980 mg/m³ STEL 500 ppm STEL 1225 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ethyl Alcohol 64-17-5</td>
<td>TWA 1000 ppm TWA 1900 mg/m³</td>
<td>IDLH 3000 ppm TWA 1000 ppm TWA 1900 mg/m³</td>
<td></td>
</tr>
<tr>
<td>2(2-Ethoxyethoxy)ethanol 111-90-0</td>
<td>Not Established</td>
<td>Not Established</td>
<td>IDLH ppm TWA ppm TWA mg/m³ STEL ppm STEL mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls
Apply technical measures to comply with the occupational exposure limits. Local exhaust and mechanical ventilation's are recommended to be used as engineering controls.

Individual protection measures, such as personal protective equipment:

- **Eye/face protection:** safety glasses with side shields or chemical goggles must be worn. Wear protective gloves. Wear suitable protective clothing and footwear appropriate for the risk of exposure.
- **Skin/body protection:** if exposure limits are exceeded or irritation is experienced. NIOSH?MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
- **Respiratory protection:**
- **General hygiene:** handle in accordance with good industrial hygiene and safety practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** liquid
- **Odor:** low
- **Odor Threshold:** Not determined
- **pH:** Not determined
- **Boiling point:** Not determined
- **Melting/Freezing point:** Not determined
- **Flash Point 32 C:** 23.3° C/74° F
- **Evaporation rate (n-Butyl acetate = 1):** <1
- **Flammability (solid, gas):** Not determined
- **Upper/Lower flammable limit:** Not determined
- **Vapor pressure:** Not determined
- **Vapor density (Air = 1):** >1
- **Specific gravity (water =1):** 0.96
10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions
Chemical stability: Stable under the recommended storage conditions
Possibility of hazardous reactions: None under normal processing.
Conditions to avoid: keep out of reach of children. Keep away from heat, sparks and open flame. Keep away from contact with incompatible materials.
Incompatible materials: strong oxidizing agents
Hazardous decomposition products: carbon oxides, nitrogen oxides. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information unlikely routes of exposure
Eye contact: Causes eye irritation
Skin contact: May be harmful if absorbed through skin. Causes skin irritation
Inhalation: May be harmful if inhaled. Causes respiratory irritation. May cause drowsiness or dizziness.
Ingestion: May be harmful if swallowed

Component information:

<table>
<thead>
<tr>
<th>Chemical name and CAS#</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>11,700 mg/kg (mouse)</td>
<td>13,000 mg/kg (rabbit)</td>
<td>10,000 mg.m³ (rat) 5h</td>
</tr>
<tr>
<td>2-Hydroxy-4-methyl-2-pentanone</td>
<td>2,520 mg/kg (rat)</td>
<td>13,500 mg/kg (rabbit)</td>
<td>1,500 ppm (rat) 5h</td>
</tr>
<tr>
<td>2-Propanol 67-63-0</td>
<td>5,045 mg/kg (rat)</td>
<td>12,800 mg/kg (rabbit)</td>
<td>16,000 mg.m³ (rat) 5h</td>
</tr>
<tr>
<td>Ethyl Alcohol 64-17-5</td>
<td>7,060 mg/kg (rat)</td>
<td>No Data</td>
<td>20,000 mg.m³ (rat) 5h</td>
</tr>
<tr>
<td>2(2-Ethoxythoxy)ethanol 111-90-0</td>
<td>10,502 mg/kg (rat)</td>
<td>9,143 mg/kg (rabbit)</td>
<td>&gt; 200 mg/l (rat) 5h</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects:
Symptoms please see section 4 of this SDS for symptoms
Carcinogenicity:
2-Propanol 67-63-0 Group 3 (IARC)
IRAC (International Agency for Research on Cancer)
Group 1 - carcinogenic to humans
Group 2B - limited evidence carcinogenicity
Group 3 - IARC components are"not classified as human carcinogens"

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Component information

<table>
<thead>
<tr>
<th>Chemical Name and CAS#</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>LC50 - Pimephales promelas - 20,800 mg/l - 96 h</td>
<td></td>
<td>EC50 - Daphnia magna - 23,300 mg/l - 48 h</td>
<td></td>
</tr>
<tr>
<td>107-98-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Hydroxy-4-methyl-2-pentanone</td>
<td>LC50 - Lepomis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging: Dispose of as unused product in accordance with applicable regional, national and local laws and regulations.

SECTION 14 – TRANSPORT INFORMATION

DOT

| UN number | 1210 |
| Proper shipping name | Printing ink, Flammable |
| Hazard class | 3 |
| Packing group | III |
| ERG# | 129 |

IATA

| UN number | 1210 |
| Proper shipping name | Printing ink, Flammable |
| Hazard class | 3 |
| Packing group | III |

IMDG

| UN number | 1210 |
| Proper shipping name | Printing ink, Flammable |
| Hazard class | 3 |
| Packing group | III |
| Marine pollutant | No |

SECTION 15 – REGULATORY INFORMATION

TSCA status: All Components listed

Other Regulatory:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>SARA 302</th>
<th>SARA 311/312</th>
<th>SARA 313</th>
<th>RECP</th>
<th>CERCLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>No</td>
<td>F,A,C</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-Hydroxy-4-methyl-2-pentanone</td>
<td>No</td>
<td>F,A,C</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>No</td>
<td>F,A,C</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Ethyl Alcohol</td>
<td>No</td>
<td>F,C</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2(2-Ethoxythoxy)ethanol</td>
<td>No</td>
<td>C</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SARA 311/312 Codes:

R = Reactive Hazard
P = Pressure Hazard
F = Fire Hazard
A = Immediate/Acute
C = Delayed/Chronic
California Pop. 65 Components: Chemicals known to the state of California to cause birth defects or other reproductive harm
This product does not contain any chemicals known to the state of California to cause cancer, birth defects or other reproductive harm

SECTION 16 – OTHER INFORMATION

HMIS:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>*</td>
</tr>
<tr>
<td>Flammability</td>
<td>3</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
</tbody>
</table>

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