MATERIAL SAFETY DATA SHEET

TAEC-WS 020

Prepared in accordance with ISO 11014-1/ANSI standard Z400.1-2004

Date: 02/2013  Replaced version:  
Date of impression: 04.02.2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: TAEC-WS 020
Product category: Ink Product

Manufacturer or supplier's details: PANNIER CORPORATION
412-323-4900
www.pannier.com
E-mail: sales@pannier.com

Emergency Telephone Number: Infotrac 24-hour telephone # 800-535-5053

2. HAZARDS IDENTIFICATIONS

This product is a preparation. Health hazard information is based on its components.

Appearance: Colored liquid
Flammable Properties: EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.
Eye Contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Emergency Overview: Irritant. May cause drowsiness and dizziness.
Eyes: Moderately irritating to the eyes.
Skin: May cause skin irritation and/or dermatitis.
Inhalation: May cause irritation of respiratory tract. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>141-78-6</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation develops and persists.
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Skin Contact
Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention.

Inhalation
If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion
If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flammable Properties
EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.

Suitable Extinguishing Media
Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that is appropriate to local circumstances and the surrounding environment.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Burning produces obnoxious and toxic fumes. Keep product and empty container away from heat and sources of ignition. Risk of ignition.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Remove all sources of ignition. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Methods for Cleaning Up
Contain spillage, soak up with non-combustible absorbent material. (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools.

Environmental Precautions
Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using, do not smoke. Do not take internally. Harmful or fatal if swallowed. Take notice of the directions of use on the label.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Ontario TWAEV</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>TWA: 500 ppm</td>
<td>TWA: 750 ppm</td>
<td>2500 ppm (10% LEL)</td>
<td>TWA: 500 ppm</td>
<td>TWA/LMPE-PPT: 1000 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 750 ppm</td>
<td>STEL: 2400 mg/m³</td>
<td>STEL: 750 ppm</td>
<td>STEL: 750 ppm</td>
<td>TWA/LMPE-PPT: 2400 mg/m³</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³ (total dust)</td>
<td>5000 mg/m³</td>
<td>TWA: 10 mg/m³ (total dust)</td>
<td>TWA/LMPE-PPT: 10 mg/m³ (as Ti)</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>STEL: 1000 ppm</td>
<td>TWA: 1000 ppm</td>
<td>3300 ppm (10% LEL)</td>
<td>STEL: 1000 ppm</td>
<td>TWA/LMPE-PPT: 1000 ppm</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>TWA: 400 ppm</td>
<td>TWA: 400 ppm</td>
<td>2000 ppm (10% LEL)</td>
<td>TWA: 400 ppm</td>
<td>TWA/LMPE-PPT: 1400 mg/m³</td>
</tr>
</tbody>
</table>

Engineering Measures
Use ventilation adequate to keep exposures below recommended exposure limits. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal Protective Equipment

Respiratory Protection
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapor filter.

Eye Protection
Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields, Goggles, Face-shield.

Skin Protection
Wear protective gloves/clothing. Solvent-resistant apron and boots.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colored liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/Boiling Range</td>
<td>&gt;149 °C / &gt;300 °F</td>
</tr>
<tr>
<td>Freezing Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>-20 °C/ -4 °F</td>
</tr>
<tr>
<td>Method</td>
<td>Closed cup</td>
</tr>
<tr>
<td>Weight Per Gallon (lbs/gal)</td>
<td>7.93</td>
</tr>
<tr>
<td>VOC by weight % (less water)</td>
<td>72.47</td>
</tr>
<tr>
<td>VOC lbs/gal (less water)</td>
<td>5.75</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.95</td>
</tr>
<tr>
<td>VOC by volume % (less water)</td>
<td>85.39</td>
</tr>
<tr>
<td>VOC grams/liter (less water)</td>
<td>688.93</td>
</tr>
<tr>
<td>VOC lbs/gal as defined by SCAQMD Rule 1171</td>
<td>3.96</td>
</tr>
<tr>
<td>VOC grams/liter as defined by SCAQMD Rule 1171</td>
<td>473.94</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions.
Conditions to Avoid Heat, flames and sparks.
Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO2). Carbon monoxide.
Possibility of Hazardous Reactions None, under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>5800 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>&gt;10000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>7060 mg/kg (Rat)</td>
<td></td>
<td>124.7 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>5620 mg/kg (Rat)</td>
<td>&gt;18000 mg/kg (Rabbit)</td>
<td>&gt;20 mL/kg (Rabbit)</td>
</tr>
</tbody>
</table>

Chronic Toxicity
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<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide</td>
<td></td>
<td>Group 2B</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**IARC:** (International Agency for Research on Cancer)  
**OSHA:** (Occupational Safety & Health Administration)

**Sensitization**  
No information available

**Mutagenic Effects**  
No information available

**Reproductive Effects**  
No information available

**Developmental hazard**  
No information available

**Teratogenicity**  
No information available

**Chronic Effects**  
Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system.

**Target Organ Effects**  
Blood, Central nervous system, Eyes, Liver, Reproductive System, Respiratory system & Skin.

12. ECOLOGICAL INFORMATION

**Ecotoxicity**
We have no quantitative data concerning the ecological effects of this product. Should not be released into the environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Algae</th>
<th>Fish</th>
<th>Water Flea</th>
</tr>
</thead>
</table>
| Acetone            | 96h LC50 Oncorhynchus mykiss: 4.74 - 6.33 mL/L  
                      96h LC50 Pimephales promelas: 6210 - 8120 mg/L [static]  
                      96h LC50 Lepomis macrachrus: 8300 mg/L  
| Ethyl alcohol      | 96h LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static]  
                      96h LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through]  
                      96h LC50 Pimephales promelas: >100 mg/L [static]  
| Ethyl acetate      | 48h EC50 Desmodesmus subspicatus: 3300 mg/L  
                      96h LC50 Pimephales promelas: 220 - 250 mg/L [flow-through]  
                      96h LC50 Oncorhynchus mykiss: 352 - 500 mg/L [semi-static]  
                      96h LC50 Oncorhynchus mykiss: 484 mg/L [flow-through]  
|                     | 48h EC50 Daphnia magna: 10294 - 17704 mg/L [static]  
                      48h EC50 Daphnia magna: 12600 - 12700 mg/L  
                      48h LC50 Daphnia magna: 9268 - 14221 mg/L  
                      24h EC50 Daphnia magna: 10800 mg/L  
                      48h EC50 Daphnia magna: 560 mg/L [static]  

**Persistence and Degradability**  
No information available

**Bioaccumulation**  
No information available

**Mobility in Environmental Media**  
No information available

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>-0.24</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>-0.32</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>0.6</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS
Waste Disposal Methods
Dispose of contents/container in accordance with local regulation.

Contaminated Packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT
UN1210, Printing Ink, 3, II

ICAO/IATA
UN1210, Printing Ink, 3, II

IMDG/IMO
UN1210, Printing Ink, 3, II

15. REGULATORY INFORMATION

International Inventories
Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

U.S. Federal Regulations
SARA 313
The following components are subject to reporting levels established by SARA Title III, Section 313:
None known

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

U.S. State Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts Right To Know</th>
<th>Minnesota Right To Know</th>
<th>New Jersey Right To Know</th>
<th>Pennsylvania Right To Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

California Prop. 65
WARNING! This product contains a chemical known in the State of California to cause cancer and / or WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide</td>
<td>13463-87-7</td>
<td>10 - 30</td>
</tr>
</tbody>
</table>

Canada
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

<table>
<thead>
<tr>
<th>Component</th>
<th>WHMIS Classifications of Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>B2,D2B</td>
</tr>
</tbody>
</table>
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Titanium dioxide  D2A
Ethyl alcohol      B2,B2B
Ethyl acetate     B2

Component | NPRI - National Pollutant Release Inventory
---|---
Acetone  | Part 4 Substance
Ethyl alcohol  | Part 5 Substance
Ethyl acetate | Part 4 Substance
                   | Part 5, Individual Substance

Regulation (EC) No. 1907/2006 (REACH), Article 57
This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57)

HMIS:  | Health | Flammability | Reactivity | PPE
---|---|---|---|---
2 * | 3 | 0 | X

16. OTHER INFORMATION

Revision Date  | Feb-04-2013
Revision Note  | New MSDS format

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of MSDS