Material Safety Data Sheet
Jetbest Corporation

MSDS No.: 090810 NEW ECO (Z)
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Revise: -
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1. PRODUCT IDENTIFICATION

   Product Name: NEW ECO (Z) Inks
   Product Type: Pigment

2. HAZARDS IDENTIFICATION

   - Emergency Overview
   This ink meets the criteria as “Irritating to eyes and skin” according to EU Directive 1999/45/EC. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

   Potential Health Effects
   Inhalation: Harmful by inhalation. Irritating to respiratory system.
   Eye Contact: Irritating to eyes.
   Skin Contact: Harmful in contact with skin. Irritating to skin.
   Ingestion: Harmful: may cause lung damage if swallowed.
   Carcinogens: One of the ingredients, carbon black, is classified by IARC as a 2B carcinogen, possibly carcinogenic to humans; none of the other ingredients of this product is listed by NTP, OSHA, or IARC as a carcinogen. The yellow pigment is a nickel compound that is listed by NTP and IARC as a carcinogen; none of the other ingredients in this ink is listed by OSHA, NTP or IARC as a carcinogen.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Percent</th>
</tr>
</thead>
</table>
### Resin Trade Secret 1%–5%

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethoxy Ethyl Ether</td>
<td>112-36-7</td>
<td>20%–30%</td>
</tr>
<tr>
<td>Diethylene Glycol Derivative</td>
<td>Trade Secret</td>
<td>10%–20%</td>
</tr>
<tr>
<td>Dipropylene Glycol Monomethyl Ether</td>
<td>34590-94-8</td>
<td>5%–10%</td>
</tr>
<tr>
<td>Lactone Compound</td>
<td>96-48-0</td>
<td>10%–20%</td>
</tr>
<tr>
<td>Methyl Acetoacetate</td>
<td>105-45-3</td>
<td>10%–20%</td>
</tr>
<tr>
<td>Ethylene Glycol Monobutyl Ether Acetate (in pigment dispersion)</td>
<td>112-07-2</td>
<td>10%–20%</td>
</tr>
</tbody>
</table>

Additive Trade Secret 1%–5%

### 4. FIRST AID MEASURES

**First Aid**

**Inhalation**: If inhaled, immediately remove to fresh air and keep warm and calm. If breathing irregularly or not breathing, give artificial respiration. Keep from swallowing vomit. Consult a doctor immediately. If inhaled and feeling sick, remove to fresh air, keep warm and calm and consult a doctor.

**Eye Contact**: Flush eyes with plenty of water for at least 15 minutes. Consult a doctor immediately.

**Skin Contact**: Immediately remove from skin with cloth. Flush thoroughly with plenty of water and soap or skin detergent. Do not use solvent or thinner. Consult a doctor in case of change of appearance or ache.

**Ingestion**: If swallowed, keep calm and consult a doctor immediately. Keep from swallowing vomit. Consult a doctor immediately.

**Protection To First-Aiders**: Wear a tool for appropriate protection.

### 5. FIRE FIGHTING MEASURES

Hazardous gases/vapors produced in fire are carbon monoxide, carbon dioxide, oxides of nitrogen. Extinguishing Water spray, Media CO₂, Dry Chemical or Alcohol foam.

**Fire Fighting Instructions**

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Protections**: Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Ventilate sufficiently during clean-up in
case of inside of a house.

**Environmental Precautions**: Do not flush into surface water or sanitary sewer system.

**Method for Cleaning up**: If a spill occurs, use sponges to wipe-up ink, and then rinse area with damp cloth. Place waste in closed container for disposal. Do not disposal of waste to the sewer. Wash hands with soap and water.

### 7. HANDLING AND STORAGE

**Handling**: Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink ink.

**Storage**: Store in a cool, dry place. Avoid freezing or extended storage in high temperatures. Avoid exposure to moisture.

**Specific use(s)**: No information.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure controls:

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH: TWA</th>
<th>OSHA: PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Glycol Monobutyl Ether Acetate</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Components</td>
<td>ACGIH: TLV</td>
<td>OSHA: PEL</td>
</tr>
<tr>
<td>Nickel compounds</td>
<td>0.2mg/m³</td>
<td>1mg/m³</td>
</tr>
</tbody>
</table>

**Engineering Controls**
Use only with adequate ventilation.

**Personal Protective Equipment**

**EYE/FACE PROTECTION**
Wear safety glasses, or where splash potential exist wear chemical splash goggles.

**RESPIRATORS**
Where the potential exists for airborne exposure, wear NIOSH approved respiratory protection.

**PROTECTIVE CLOTHING**
Where there is potential for skin contact, have available and wear as appropriate impervious gloves, apron or smock.

**Environmental exposure control**
Not established
### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compatible plotter</td>
<td>Roland SJ and XJ Series</td>
</tr>
<tr>
<td>2</td>
<td>Color</td>
<td>Cyan, Magenta, Yellow, Black, Light Cyan,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Light Magenta</td>
</tr>
<tr>
<td>3</td>
<td>Odor</td>
<td>Slight odor</td>
</tr>
<tr>
<td>4</td>
<td>Boiling point/boiling range of ink</td>
<td>approx. 160 °C or higher</td>
</tr>
<tr>
<td>5</td>
<td>Melting Point/Melting Range</td>
<td>No data available</td>
</tr>
<tr>
<td>6</td>
<td>Flash point of ink</td>
<td>approx. 65 °C</td>
</tr>
<tr>
<td>7</td>
<td>Auto-Ignition Temperature</td>
<td>not below 170 °C</td>
</tr>
<tr>
<td>8</td>
<td>Flammability(solid, gas)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>9</td>
<td>Explosive Properties</td>
<td>Flammable point: 2.2% to 33.0%</td>
</tr>
<tr>
<td>10</td>
<td>Vapour Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>11</td>
<td>Specific Gravity</td>
<td>0.980±0.01(25°C)</td>
</tr>
<tr>
<td>12</td>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>13</td>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>14</td>
<td>Viscosity</td>
<td>4.5 ± 0.5 cps</td>
</tr>
<tr>
<td>15</td>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>16</td>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>17</td>
<td>Vapor Density</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

The Physical and chemical data given in Section 9 are typical values for this product and are not intended to be product specifications.

### 10. STABILITY AND REACTIVITY

**Chemical Stability**

**Stability:** Stable at normal temperatures

**Conditions to avoid:** High and freezing temperatures

**Materials to avoid:** Oxidizers and explosives
**Decomposition**
Thermal decomposition may produce carbon dioxide, carbon monoxide.

### 11. TOXICOLOGICAL INFORMATION

**Routes of Overexposure:** Eye, skin, inhalation, and oral ingestion

**Acute Health Hazards:** Overexposure of the eye surface to ink may be mildly irritating. Overexposure of ink contact with the skin may cause irritation and in some people, swelling and redness. Intentional inhalation to ink vapors may result in respiratory tract irritation. Intentional or accidental oral ingestion may cause an upset stomach.

**Chronic Health Hazards:** No information available

**Mutagenicity:** No information available

**Carcinogenicity:**
This product contains Ni-compound (Yellow pigment). But this Ni-compound is not listed on the IARC carcinogenicity substances lists. Also, this Ni-compound shows the negative result on AMES test.

**Toxicity Data:**

<table>
<thead>
<tr>
<th>Compound</th>
<th>LD50/LC50 Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethoxy Ethyl Ether</td>
<td>Draize test, rabbit, eye: 50 mg Moderate; Oral, rat: LD50 = 4970 mg/kg; Skin, rabbit: LD50 = 6700 uL/kg.</td>
</tr>
<tr>
<td>Methyl Acetoacetate</td>
<td>LD50/LC50: Draize test, rabbit, eye: 2 mg Severe; Draize test, rabbit, skin: 500 mg/24H Mild; Oral, rat: LD50 = 3228 mg/kg.</td>
</tr>
<tr>
<td>Dipropylene Glycol Monomethyl Ether</td>
<td>LD50/LC50: Oral, rat: LD50 = 5130 mg/kg; Dermal, rabbit: LD50 = 9500 mg/kg</td>
</tr>
<tr>
<td>Diethylene Glycol Derivative</td>
<td>Oral LD50 &gt;6,500mg/kg (Rats), Dermal LD50 &gt;7,070mg/kg (Rabbit)</td>
</tr>
<tr>
<td>Lactone Compound</td>
<td>LD50/LC50: Dermal, guinea pig: LD50 = &gt;5 gm/kg; Draize test, rabbit, skin: 500 uL Severe; Inhalation, rat: LC50 = &gt;5100 mg/m3/4H; Oral, mouse: LD50 = 1460 mg/kg; Oral, rat: LD50 = 1540 mg/kg.</td>
</tr>
<tr>
<td>Ethylene Glycol Monobutyl Ether Acetate</td>
<td>LD50/LC50: Draize test, rabbit, eye: 500 mg/24H Mild; Oral, mouse: LD50 = 3200 mg/kg; Oral, rat: LD50 = 2400 mg/kg; Skin, rabbit: LD50 = 1500 mg/kg.</td>
</tr>
</tbody>
</table>

**Inhalation:**
Not available

**Irritating:**
Ethylene Glycol Monobutyl Ether Acetate:
Eye irritating: 500mg/24hrs (Rabbit OECD405) mild irritating.
Skin irritating: 500mg/24hrs (open@ Rabbit OECD404) mild irritating.

Diethylene Glycol Derivative:
Eye irritating: moderate irritant (P.I.I=2.5 Draize)

Lactone Compound:
Irritating to eyes. (rabbit eyes, OECD Guideline 405)

Sensitization:
Not available

Mutagenicity:
Not available

The information shown in SEccion 3, Hazards identification, is based on toxicity profiles of similar materials or on the components present in this material.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Mobility: No data available
Persistence and Degradability: No data available
Bioaccumulative Potential: No data available
Result of PBT assessment: Has not carried out PBT assessment
Other Adverse Effects: Disclosure of ink and abandonment have a possibility of affecting environment. Then, cautions are required for handing. It is necessary to cope with it so that especially a product or washing water may not flow to the ground, a river, and a drain.

13. DISPOSAL CONSIDERATIONS

Waste Disposal
Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14. TRANSPORT INFORMATION

General: Not a regulated article under United States DOT, IATA, ADR, IMDG, or RID
IATA
Proper shipping name: Not applicable
Hazard class: Not applicable
Packaging exceptions: None
Identification number: None (UN)
Packing group: N/A

15. Regulatory Considerations

US Regulation:
TSCA Section 4(a) Final Test Rules Regulated: Not regulated.
TSCA Section 8(a) Preliminary Assessment Information Rule (PAIR): Not regulated.
TSCA Section 8(a) Inventory Update Rule: All components on TSCA INVENTORY
TSCA Section 8(d) Health and Safety Study Reporting: Not regulated.
TSCA Section 12(b) One-Time Export Notification Regulated: Not regulated.
California Proposition 65: Nickel Compound in Yellow Pigment

SARA TITLE III:
Section 313: Toxic Chemical: De minimis concentration

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene Glycol Diethyl Ether</td>
<td>1.0 % N230</td>
</tr>
<tr>
<td>Ethylene Glycol Monobutyl Ether Acetate</td>
<td>1.0 % N230</td>
</tr>
</tbody>
</table>

Label element according to the Global Harmonized System (GHS).
Pictogram or symbol

Warning

Working of Risk and Safety Phase:
R22: Harmful if swallowed.
R36/38: Irritating to eyes and skin.
S24: Avoid contact with skin.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16. OTHER INFORMATION
The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.