BOXCAR PRESS PHOTOPOLYMER PLATES DATA SHEET: KF95

Material: AV Waterwash Series Photopolymer, Polyester Base
Model Type: KF95
Applications: Rotary Letterpress.
Features: High Resolution, non-cracking, long press life

Available Sizes:
- A-2 (16.5” x 23.375”) 20 sheets per case
- A-3 (11.75” x 16.5”)
- A-4 (8.25” x 11.75”)

Specifications:
- Overall Thickness: .037”
- Face Relief: .027” PVA/Acrylic Photopolymer
- Substrate: .010” polyester base
- Durometer: 67 Shore D Hardness
- Surface Texture: Matte

Processing:
- Main Exposure: 1:30 – 3:00 Minutes @ 720 mj/cm² (350 nm)
- Shoulder Angle: 25-30°
- Resolution (inch/inch): 150 @ 3%
- Minimum Isolated Dot (um): 200
- Maximum Isolated Dot (um): 40
- 21 Step Exposure Scale: 17-18
- Washout: 4:00 – 5:00 Minutes
- Bath Temperature: < 23°C/ 72°F
- Dry: 10:00 - 40:00 Minutes in convection dryer
- Oven Temperature: 80°C/ 176°F
- Post Exposure: 5:00 Minutes

Effluent Data: .0025 Square Meter of 94FL Plate in ONE LITER of Water.

<table>
<thead>
<tr>
<th>Unit</th>
<th>MG/LITER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>6.0</td>
</tr>
<tr>
<td>COD</td>
<td>1941</td>
</tr>
<tr>
<td>BOD</td>
<td>44 Biochemical Demand</td>
</tr>
<tr>
<td>F- Fluoride</td>
<td>Less than 0.1</td>
</tr>
<tr>
<td>Hg- Mercury</td>
<td>Less than 0.0005</td>
</tr>
<tr>
<td>Co- Cobalt</td>
<td>Less than 0.01</td>
</tr>
<tr>
<td>Pb- Lead</td>
<td>Less than 0.05</td>
</tr>
<tr>
<td>Cu- Copper</td>
<td>0.07</td>
</tr>
<tr>
<td>Zn- Zinc</td>
<td>0.04</td>
</tr>
<tr>
<td>Mn- Manganese</td>
<td>Less than 0.01</td>
</tr>
</tbody>
</table>

You may wish to filter waste water before discharging into sewer. Use a sub micro mesh filter. Dry filtered waste and dispose. Consult local authorities for regulations in your area.
Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION
Product Name: Printight KF-G, KM-G, KA-G, KM-A Type
SUPPLIER
Name: TOYBO Co., Ltd.
Address: Photo Functional Materials Dept., 2-8 Dojima Hama 2-chome, Kita-Ku
OSAKA 530-8230 JAPAN
Telephone No.: +81-6-6348-3059
Fax No.: +81-6-6348-3099

2. COMPOSITION, INFORMATION ON INGREDIENTS
Chemical Product Preparation: Laminated sheet containing water soluble photo-sensitive resin
Chemical Name: Laminated sheet containing water soluble photo-sensitive resin
Composition
<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyamide</td>
<td>55%</td>
</tr>
<tr>
<td>Derivative of Acrylates and Methacrylates</td>
<td>40%</td>
</tr>
<tr>
<td>Plasticizer</td>
<td>3%</td>
</tr>
<tr>
<td>Photo-initiator and other additives</td>
<td>2%</td>
</tr>
</tbody>
</table>

Components Contributing to the Hazard: Product contains following chemical substances;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Synonyms</th>
<th>Concentration</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε-caprolactam</td>
<td>2-azacycloheptanone</td>
<td>2.0% or less</td>
<td>C₆H₁₁NOCH₃OH</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>Methanol</td>
<td>3.0% or less</td>
<td>CH₂-OCH₂CH₃</td>
</tr>
<tr>
<td>Methyl acrylate</td>
<td>Methyl 2-propenoate</td>
<td>4900ppm or less</td>
<td>CH₂=CHCOOCH₃</td>
</tr>
<tr>
<td>Methyl methacrylate</td>
<td>Methyl 2-methyl-2-propenoate</td>
<td>2000ppm or less</td>
<td>CH₂=C(CH₃)COOCH₃</td>
</tr>
</tbody>
</table>

CAS No.: 105-60-2 67-56-1 96-33-3 80-62-6

3. HAZARDS IDENTIFICATION
Most Important Hazards: Eye contact or skin contact with the material may cause some irritation.
Dermatitis may occur in some serious case.
The material contains small amount of hazardous ingredients
or the ingredients of insufficient investigation of hazards.
Inflammable with the existence of ignition sources
Specific Hazards: Prolonged inhalation of fumes or gases generated from the material
during the processing operations may cause headache, respiratory irritation.
Main Symptoms: Dizziness, Headache, Irritation to eyes and skin

4. FIRST-AID MEASURES
Inhalation: In case of irritation by inhaling fumes or gases generated from the material
during the processing operations, remove victim to fresh air and await recovery.
Seek immediate medical attention if irritation persists.

Skin Contact: If the material or wash-out solution contacts the skin,
wash the affected area thoroughly with water and soap.
Seek medical attention if necessary.

Eye Contact: If some irritation is felt in eyes or wash-out solution enters the eyes,
immediately flush eyes with plenty of clean water for at least 15 minutes.
Seek medical attention if irritation persists.

Ingestion: If the material or wash-out solution is swallowed, induce vomiting.
Seek immediate medical attention if indisposition persists.
Material Safety Data Sheet

5 FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Extinguishing Media</th>
<th>Carbon Dioxide, Water-Spray, Dry Chemical, Foam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Hazards</td>
<td>When subjected to prolonged high temperature or burning, this product will emit harmful gas containing carbon monoxide, nitrogen oxides, chlorine compounds and sulfur oxides.</td>
</tr>
<tr>
<td>Specific Methods</td>
<td>Extinguish the fire from windward by water or carbon dioxide.</td>
</tr>
<tr>
<td>Protection of Firefighters</td>
<td>Wear self-contained breathing apparatus and protective clothing.</td>
</tr>
</tbody>
</table>

6 ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Personal Precautions</th>
<th>The unexposed and exposed plates are solid and considered low hazard material to human body. If the material contacts the body, wash the affected area thoroughly with water and soap. Wash-out solution remained on the skin may cause some irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Precautions</td>
<td>The unexposed plate is soluble in water, that may pollute environment. The wash-out solution contains unreacted component and resin, that may pollute watercourse.</td>
</tr>
<tr>
<td>Methods for Cleaning up</td>
<td>Carefully pick up and collect the dropped plates. Wipe the area with a cloth containing soapy water to remove any adherent material. Remove all the split wash-out solution with absorbent.</td>
</tr>
</tbody>
</table>

7 HANDLING AND STORAGE

HANDLING

<table>
<thead>
<tr>
<th>Technical Measures</th>
<th>Wash hands thoroughly after handling unexposed or exposed plates. Pay attention not to contact skin and eyes with the plate material. Wear protective equipment like impervious gloves, if necessary. Use with adequate ventilation or local exhaust system especially for washing-out and drying processes. Do not inhale fumes and gases while processing the material. Do not contact skin and eyes with the wash-out solution. Do not inhale nor contact with hazardous product pieces, liquid or gases which may remain in the used containers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions</td>
<td>Pay attention not to get hurt to hands while cutting the plate. Handle with care not to get hurt to hands with outer case or edge of the plate.</td>
</tr>
</tbody>
</table>

STORAGE

<table>
<thead>
<tr>
<th>Technical Measures</th>
<th>Put the packages vertical, and not pile up. Pay attention not to fall them down.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incompatible Products</td>
<td>Oxidizers Keep away from water and alcohol in which the material is soluble.</td>
</tr>
<tr>
<td>Storage Conditions</td>
<td>Store plates in a cool (below 25°C), and dry location, away from sources of intense heat and ignition. Put and store all the unexposed plates into the particular masking bag.</td>
</tr>
<tr>
<td>Packaging Materials</td>
<td>Masking bag or corrugated board package</td>
</tr>
</tbody>
</table>
8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING MEASURES

Use with adequate ventilation or local exhaust system especially for washing-out and drying processes. Ensure eyewash/safety shower stations are available near areas where the material is used.

<table>
<thead>
<tr>
<th>Control Parameters</th>
<th>e-caprolactam</th>
<th>Methyl alcohol</th>
<th>Methyl acrylate</th>
<th>Methyl methacrylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH (year)</td>
<td>5ppm (vapor)</td>
<td>200ppm</td>
<td>2ppm</td>
<td>50ppm</td>
</tr>
<tr>
<td></td>
<td>(23mg/m3)</td>
<td>(260mg/m3)</td>
<td>(7mg/m3)</td>
<td>(410mg/m3)</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection
Wear a suitable gas mask, depending upon the task

Hand Protection
Wear impervious rubber or plastic gloves

Eye Protection
Wear safety glasses, goggles or face shield

Skin and Body Protection
Wear impervious clothing to prevent skin from contacting the material

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State, Form, Color
Solid sheet, Colorless transparent, slightly sweet odor and Odor

pH
6.4 as washing-out solution

Melting Point
110°C

Decomposition Temperature
No data available

Flash Point
No data available

Autoignition Temperature
No data available

Explosion Properties
None

Density
1.2 g/cm³

Solubility
Soluble in water and alcohol.

10 STABILITY AND REACTIVITY

Stability
Stable under normal storage and handling.

Possible Hazardous Reactions
Inflammable with the existence of ignition sources

Conditions to Avoid
Avoid high temperature, flame and heat-sources and direct sunlight

Material to Avoid
Avoid strong oxidizers

Hazardous Decomposition Products
When subjected to prolonged high temperature or burning, this product will emit harmful gas containing carbon monoxide, nitrogen oxides, chloride compounds and sulfur oxides.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity
Oral-Rat LDLo ≥ 2000mg/kg

Local Effects (skin and eye)
Skin-Rabbit test: Printight KF-G, KM-G, KA-G, KM-A type has no irritation potential under the conditions of this study.

Eye effects-Rabbit test: Printight KF-G, KM-G, KA-G, KM-A type has reversible and mild irritation potential under the conditions of this study.

Mutagenicity
Ames test: Printight KF-G, KM-G, KA-G, KM-A type is not mutagenic under the test conditions employed.
12 ECOLOGICAL INFORMATION

Mobility

Unexposed plate and washed-out solution of exposed plate are soluble in water, and are possible to diffuse in watercourse.

13 DISPOSAL CONSIDERATIONS

Waste from Residues
Dispose of in accordance with all applicable local and national laws/regulations.

Contaminated Packaging
Dispose of as well as the waste material.

14 TRANSPORT INFORMATION

International Regulations

UN Classification Number: Not applicable
Specific Precautionary: When loading the package, pay attention not to fall it down nor drop it.
Transport Measures and Conditions: Keep it dry and handle with care.

15 REGULATORY INFORMATION

Follow all the laws and regulations in your country.

16 OTHER INFORMATION

Notice
The information in this MSDS, to the best of our knowledge, is accurate and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information. The MSDS is subject to revision as new information becomes available.