

TOYOBO**Material Safety Data Sheet****1. PRODUCT AND COMPANY IDENTIFICATION**Product Name **Printight KF-G, KM-G,KA-G Type****SUPPLIER**

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2. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Product **Preparation**
 Chemical Name **Laminated sheet containing water soluble photo-sensitive resin**

Composition	Generic Name	Concentration
	Polyamide	55%
	Derivative of Acrylates and Methacrylates	40%
	Plasticizer	3%
	Photo-initiator and other additives	2%
Components Contributing to the Hazard	Product contains following chemical substances;	

Chemical Name	ϵ -caprolactam	Methyl alcohol	Methyl acrylate	Methyl methacrylate
Synonyms	2-azacycloheptanone	Methanol	Methyl 2-propenoate	Methyl 2-methyl-2-propenoate
Concentration	2.0% or less	3.0% or less	4900ppm or less	2000ppm or less
Chemical Formula	$C_6H_{11}NO$	CH_3OH	$CH_2=CHCOOCH_3$	$CH_2=C(CH_3)COOCH_3$
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.**



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5 FIRE-FIGHTING MEASURES

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

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions	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.
Environmental Precautions	The unexposed plate is soluble in water, that may pollute environment. The wash-out solution contains unreacted component and resin, that may pollute watercourse.
Methods for Cleaning up	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 spilt wash-out solution with absorbent.

7 HANDLING AND STORAGE

HANDLING

Technical Measures	Wash hands thoroughly after handling unexposed or exposed plates. Pay attention not to contact skin and eyes with the plate material.
Precautions	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.
Safe Handling Advice	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.

STORAGE

Technical Measures	Put the packages vertical, and not pile up. Pay attention not to fall them down.
Incompatible Products	Oxidizers
Storage Conditions	Keep away from water and alcohol in which the material is soluble. 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.
Packaging Materials	Masking bag or corrugated board package



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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.

Control Parameters

	ϵ -caprolactam	Methyl alcohol	Methyl acrylate	Methyl methacrylate
ACGIH	5ppm(vapor)	200ppm	2ppm	50ppm
TLV-TWA	(23mg/m ³)	(260mg/m ³)	(7mg/m ³)	(410mg/m ³)
(year)	1998	1998	1997	1999

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 and Odor	Solid sheet, Colorless transparent, slightly sweet 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/cm ³
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, chlorine compounds and sulfur oxides.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity	Oral-Rat LDLo \geq 2000mg/kg
Local Effects (skin and eye)	Skin-Rabbit test: Printight KF-G, KM-G,KA-G type has no irritation potential to the rabbit skin under the conditions of this study. Eye effects-Rabbit test: Printight KF-G, KM-G,KA-G type has reversible and mild irritation potential to the eyes of rabbits under the conditions of this study.
Mutagenicity	Ames test: Printight KF-G, KM-G,KA-G type is not mutagenic under the test conditions employed.



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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 because of its heavy weight.

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.

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