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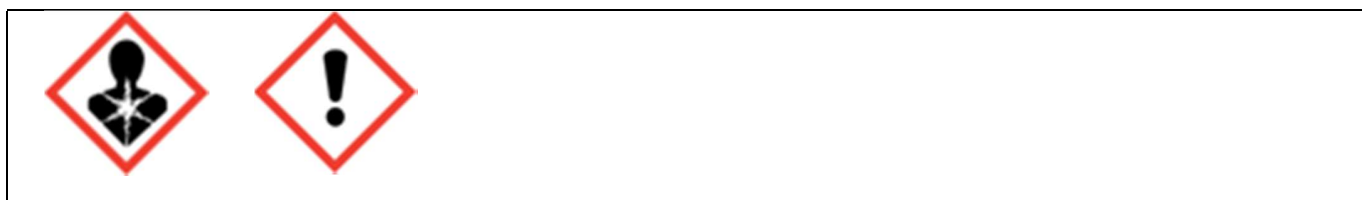
**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING****GHS product identifier****Product Name** : FLEXFINER-30EM-L (TR74717)**Other means of identification****SDS Number** : MS-7471701-US**Synonyms** : None**Recommended use of the chemical and restrictions on use****Recommended Use** : Printed circuit board applications**Uses advised against** : No information available**Supplier's details****Manufacturer Name** : TAIYO INK MFG. CO., Ltd.**Manufacturer Address** : 900 Hirasawa, Ranzan-machi, Hiki-gun, Saitama, 355-0215 Japan  
TEL: 81-493-61-2731**Emergency telephone number** : 81-493-61-2733 (FPC Project)(8:30~17:00 Japan Time)**2. HAZARDS IDENTIFICATION****Classification**

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage / irritation	Category 2
Skin sensitization	Category 1
Reproductive toxicity	Category 2

**GHS Label elements, including precautionary statements****Emergency Overview**

Signal Word	Warning
<b>Hazard Statements</b>	
	<ul style="list-style-type: none"><li>• Causes skin irritation</li><li>• May cause an allergic skin reaction</li><li>• Causes serious eye irritation</li><li>• Suspected of damaging fertility or the unborn child</li></ul>



### Precautionary Statements

#### Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Wash hands/eyes thoroughly after handling.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves/protective clothing/eye protection/face protection.

#### General Advice

- IF ON SKIN: Wash with plenty of soap and water.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.

#### Fire

- Store locked up.

#### Storage

- Store locked up.

#### Disposal

- Dispose of contents/container to an approved waste disposal plant.

### Hazard Not Otherwise Classified (HNOC)

Not applicable

### Other information

74.4% of the mixture consists of ingredient(s) of unknown acute toxicity

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
ALUMINUM HYDROXIDE (AL(OH) <sub>3</sub> )	21645-51-2	5 - 10	*
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane	25068-38-6	3 - 5	*

Poly(oxy-1,2-ethanediyl), $\alpha,\alpha'$ -[(1-methylethylidene)di-4,1-phenylene]bis[ $\omega$ -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	41637-38-1	3 - 5	*
$\epsilon$ -Caprolactone, oligomers, esters with acrylic acid and 2,2,2',2'-tetrakis(hydroxymethyl)-3,3'-oxydipropan-1-ol	89800-10-2	3 - 5	*
2-Propenoic acid, (tetrahydro-2-furanyl)methyl ester	2399-48-6	1 - 3	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

#### 4. FIRST AID MEASURES

##### Description of necessary first-aid measures

<b>General Advice</b>	: If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
<b>Eye Contact</b>	: Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
<b>Skin Contact</b>	: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary.
<b>Inhalation</b>	: Move to fresh air. If symptoms persist, call a physician. If breathing is difficult, give oxygen.
<b>Ingestion</b>	: Rinse mouth. Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.
<b>Protection of First-aiders</b>	: Use personal protective equipment. Avoid contact with skin, eyes and clothing.

##### Most important symptoms/effects, acute and delayed

**Most Important Symptoms/Effects:** : No information available.

##### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to Physician:** : Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry powder. Dry chemical.

**Unsuitable Extinguishing Media:** No information available.

##### Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

##### Explosion Data

**Sensitivity to Mechanical Impact** : None

**Sensitivity to Static Discharge** : None

##### 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.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** : Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove all sources of ignition.

### Environmental Precautions

**Environmental Precautions** : Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Avoid release to the environment. Collect spillage. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

### Methods and materials for containment and cleaning up

**Methods for Containment** : Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** : Dam up. Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Handling** : Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not take internally.

### Conditions for safe storage, including any incompatibilities

**Storage** : Keep in properly labeled containers. Keep away from heat and sources of ignition. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Under -15°C.

**Incompatible Products** : Strong oxidizing agents. Strong acids. Strong bases.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name (CAS No.)	ACGIH TLV	OSHA PEL	NIOSH IDLH
ALUMINUM HYDROXIDE (AL(OH) <sub>3</sub> ) (21645-51-2)	TWA(8h): 1 mg/m <sup>3</sup> (as Al)	TWA is: 5 mg/m <sup>3</sup> .(respirable) TWA is: 15 mg/m <sup>3</sup> .(total dust)	-
Aluminate (Al(OH) <sub>63</sub> -), (OC-6-11)-, magnesium carbonate hydroxide (2:6:1:4) (11097-59-9)		TWA is: 2 mg/m <sup>3</sup> .(as Al)	

### Appropriate engineering controls

**Engineering Measures** : Showers, Eyewash stations, Ventilation systems.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	: Safety glasses with side-shields.
<b>Skin and Body Protection</b>	: Lightweight protective clothing. Protective gloves.
<b>Respiratory Protection</b>	: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
<b>Hygiene Measures</b>	: When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>Physical State</b>	Thin film	<b>Appearance</b>	Black
<b>Odor</b>	Mild	<b>Odor Threshold</b>	No information available

Property	Values	Remarks/ - Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	No data available	None known
Flash Point	No data available	Gelation
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Auto ignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

**Other information**

VOC Content : 0 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Incompatible products. Heat, flames and sparks. Sunlight and UV light.

### Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

### Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Sulfur oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	: There is no data available for this product.
<b>Eye Contact</b>	: Causes serious eye irritation
<b>Skin Contact</b>	: Causes skin irritation
<b>Ingestion</b>	: There is no data available for this product.

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** : No information available.

### Delayed and immediate effects and also chronic effects from short and long term exposure

<b>Sensitization</b>	: May cause an allergic skin reaction
<b>Mutagenic Effects</b>	: No information available.
<b>Carcinogenicity</b>	: No information available.
<b>Reproductive Toxicity</b>	: Suspected of damaging fertility or the unborn child
<b>STOT - single exposure</b>	: No information available.
<b>STOT - repeated exposure</b>	: No information available.
<b>Aspiration Hazard</b>	: No information available.

### Numerical measures of toxicity - Product

**Acute Toxicity** : 74.4% of the mixture consists of ingredient(s) of unknown toxicity.

*The following values are calculated based on chapter 3.1 of the GHS document:*

**LD50 Oral** : 3,286 mg/kg; Acute toxicity estimate

**LD50 Dermal** : 2,466 mg/kg; Acute toxicity estimate

## 12. ECOLOGICAL INFORMATION

### Eco toxicity

No data available.

**Persistence and Degradability** : No information available.

**Bioaccumulation** : No information available.

**Other Adverse Effects:** No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** : Dispose of in accordance with federal, state, and local regulations

**Contaminated Packaging** : Do not re-use empty containers

**US EPA Waste Number** : No information available.

## 14. TRANSPORT INFORMATION

**Note** : No information available.

**DOT** : Not regulated

**IATA** : Not regulated

**IMDG/IMO** : Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

**TSCA** : Does not comply  
 ※This product contains nine new substances that are not listed in the TSCA registered inventory. Four of them have been approved by LVE notification.

**DSL/NDSL** : Does not comply

### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

### U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

### SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

### Clean Water Act

This product does contain the substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40CFR 122.42):

This product contains the substances which are regulated the Clean Water Act section 304(a)(1)

Chemical Name (CAS No.)	Generics group name	Freshwater Criterion Maximum Concentration (CMC) (acute):	Freshwater Criterion Continuous Concentration (CCC) (chronic):
[carbonato(2-)]hexadecahydroxy bis (aluminum) hexamagnesium (11097-59-9)	Aluminum	750 ug/L.	87 ug/L.

Aluminum hydroxide (21645-51-2)	Aluminum	750 ug/L.	87 ug/L.
Pigment Blue15:3/29H,31H- Phthalocyaninato(2-)- N29,N30,N31,N32copper (147-14-8)	Copper	4.8 ug/L.	3.1 ug/L.

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Pigment Blue15:3/29H,31H-Phthalocyaninato(2-)-N29,N30,N31,N32copper(147-14-8)  
: Generics group name: COPPER COMPOUNDS

**U.S. State Regulations**

**California Proposition 65:** This product does not contain Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

This product contains the substances under the U.S. State Right-to-Know Regulations  
"X" designates that the ingredients are listed on the state right to know list.

Chemical Name (CAS No.)	New Jersey	Massachusetts	Pennsylvania	New York	Rhode Island
Aluminate (Al(OH)63-),(OC-6-11)-, magnesium carbonate hydroxide(2:6:1:4)- (CAS No.11097-59-9)	-	-	x	-	-
ALUMINUM HYDROXIDE (AL(OH)3) (CAS No.21645-51-2)	-	-	-	-	x
Pigment blue 15:3 (CAS No.147-14-8)	-	-	x	x	-

**U.S. EPA Label Information**

**EPA Pesticide Registration Number:** Not applicable

**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazard 1</b>	<b>Flammability 0</b>	<b>Instability 0</b>	<b>Physical and Chemical Hazard -</b>
<b>HMIS</b>	<b>Health Hazard 1*</b>	<b>Flammability 0</b>	<b>Physical Hazard 0</b>	<b>Personal Protection X</b>

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Added "(TR74717) to correct Product Name.

**General Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

**End of Safety Data Sheet**