


# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

<b>PRODUCT NAME:</b> Mitsubishi SLM - O E Deletion Fluid		<b>DATE:</b> August 11, 2010	
<b>PRODUCT NUMBER:</b>		<b>DATE:</b> August 11, 2010	
<b>TRADE NAME:</b> Mitsubishi SLM - O E Deletion Fluid <b>GENERAL USE:</b> Deletion solution for SLM/SDP <b>CHEMICAL FAMILY:</b> <b>PRODUCT DESCRIPTION:</b> Pinkish opaque viscous solution, weak hot-springlike odor.			
<b>MANUFACTURER</b> <b>Mitsubishi Paper Mills Ltd.</b>		<b>DATE PREPARED:</b> August 11, 2010	
		<b>SUPERSEDES:</b> December 16, 2008	
<b>ADDRESS (NUMBER, STREET, P.O. BOX)</b> <b>4-2 Marunouchi 3-Chome</b>		<b>TELEPHONE NUMBER FOR INFORMATION / Customer Service</b> <b>03-3213-3641</b>	
<b>(CITY, STATE AND ZIP CODE)</b> COUNTRY <b>Chiyoda-ku, Tokyo 100-005</b> Japan		<b>24-HOUR EMERGENCY TELEPHONE NUMBER</b> <b>Chemtrec</b> (800) 424-9300 (703) 527-3887 North America Toll Free International	
<b>DISTRIBUTOR</b> <b>Mitsubishi Imaging (MPM), Inc.</b>		<b>TELEPHONE NUMBER FOR INFORMATION / Customer Service</b> <b>(914) 925-3200</b>	
<b>ADDRESS (NUMBER, STREET, P.O. BOX)</b> <b>555 Theodore Fremd Avenue</b>		<b>24-HOUR EMERGENCY TELEPHONE NUMBER</b> <b>Chemtrec</b> (800) 424-9300 (703) 527-3887 North America Toll Free International	
<b>(CITY, STATE AND ZIP CODE)</b> COUNTRY <b>Rye, NY 10580</b> USA			

## SECTION 2 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES (Full Text Section 15)
<b>Thiomalic Acid</b>	<b>7 - 13</b>	<b>70-49-5</b>	<b>200-736-4</b>	<b>Xn</b>	<b>R-22, 36/37/38</b>
<b>Silica gel</b>	<b>5 - 20</b>	<b>7631-86-9</b>	<b>231-545-4</b>	<b>NC</b>	<b>Not classified</b>
<b>Hydrochloric Acid (b,c,d)</b>	<b>1 - 5</b>	<b>7647-01-0</b>	<b>231-595-7</b>	<b>C</b>	<b>R-34,37</b>
<b>2-Mercaptoethylamine hydrochloride</b>	<b>1 - 5</b>	<b>156-57-0</b>	<b>205-858-1</b>	<b>Xn</b>	<b>R-22,37</b>
<b>Methyl Alcohol (a,c,e)</b>	<b>1 - 5</b>	<b>67-56-1</b>	<b>200-659-6</b>	<b>F, T</b>	<b>R-11, 23/24/25, 39</b>

(a,c) See Section 15

(b) A "C" in the OSHA PEL or ACGIH TWA column indicates ceiling limits, the concentration that should not be exceeded during any part of the working exposure.

(d) OSHA proposed a regulation (29 CFR 1910.119) to monitor and control safety at certain types of industrial facilities. Compliance is triggered by specified quantities of specific chemicals. Minimum threshold quantity for this Highly Hazardous Chemical is 5000 lbs.

(e) Indicates that the Resource Conservation and Recovery Act (RCRA) has determined the waste for this chemical is listed as hazardous and must be handled according to regulations in 40 CFR 260-281.

**NOTES:** This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS), and European Union Directives. Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS) or the European (GHS) directives and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directives.

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## SECTION 3 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Corrosive acidic liquid, contact with skin or eyes will cause chemical burns or irritation. Ingestion may cause chemical burns to the digestive tract in addition to gastric distress. Hazard symbols for this product - **C, Xn** Risk Phrases - **R 22, 34**

### POTENTIAL HEALTH EFFECTS

#### INHALATION:

Remove affected person to fresh air; if breathing has not returned to normal within a few minutes after exposure, get medical attention.

#### SKIN:

Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

#### EYES:

Remove contact lenses. Immediately flush eyes for 15 minutes in clear running water while holding eyelids open; seek medical attention immediately.

#### INGESTION:

Drink two glasses of water followed by milk, milk of magnesia or other non-alcoholic liquids; DO NOT induce vomiting; seek medical attention immediately.

#### CARCINOGENICITY:

NTP? <b>NO</b>	IARC MONOGRAPHS? <b>NO</b>	OSHA REGULATED? <b>NO</b>
CALIFORNIA, Prop.65? <b>NO</b>		ESIS NOTATION? <b>NO</b>

## SECTION 4 - FIRST AID MEASURES

#### INHALATION:

Remove affected person to fresh air; if breathing has not returned to normal within a few minutes after exposure, get medical attention.

#### EYES:

Remove contact lenses. Immediately flush eyes for 15 minutes in clear running water while holding eyelids open; seek medical attention immediately.

#### SKIN:

Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

#### INGESTION:

Drink two glasses of water followed by milk, milk of magnesia or other non-alcoholic liquids; DO NOT induce vomiting; seek medical attention immediately.

## SECTION 5 - FIRE FIGHTING MEASURES

#### GENERAL HAZARDS:

Product is corrosive. Products of combustion include compounds of carbon, hydrogen and oxygen, including Carbon Monoxide.

#### EXTINGUISHING MEDIA:

Carbon Dioxide, water, water fog, dry chemical, chemical foam.

#### FIRE FIGHTING PROCEDURES:

Keep containers cool with water spray to prevent container rupture due to steam buildup; **CAUTION** - material is corrosive.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Contact with B:C extinguisher powder may produce large amounts of Carbon Dioxide.

#### HAZARDOUS COMBUSTION PRODUCTS:

Smoke, fumes, oxides of carbon.

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## SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

**CAUTION - CORROSIVE.** Wash small spills to sanitary sewer. Confine large spill, soak up with approved absorbent, shovel product into approved container; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to SARA Title III, Section 313 40 CFR 372, and CERCLA 40 CFR 302 for detailed instructions concerning reporting requirements.

## SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures. Separate from oxidizing materials, metallic powders and other easily oxidized organic materials and reducing agents. **CAUTION** - material is corrosive. Keep this and other chemicals out of reach of children.

## SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

HAZARDOUS COMPONENTS	NIOSH				ACGIH		OSHA	
	TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3	TLV/TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3
<b>Thiomalic Acid</b>		<b>NE</b>				<b>NE</b>		
<b>Silica gel</b>		<b>10</b>				<b>15</b>		
<b>Hydrochloric Acid (b,c,d)</b>	<b>5 C</b>	<b>7 C</b>	-	-	<b>5 C</b>	<b>7.5 C</b>	<b>5 C</b>	<b>7.5 C</b>
<b>2-Mercaptoethylamine hydrochloride</b>		<b>NE</b>				<b>NE</b>		
<b>Methyl Alcohol (a,c,e)</b>	-	-	-	-	<b>200</b>	<b>262</b>	<b>250</b>	<b>327</b>

(b) A "C" in the OSHA PEL or ACGIH TWA column indicates ceiling limits, the concentration that should not be exceeded during any part of the working exposure.

### PERSONAL PROTECTION

RESPIRATORY PROTECTION:

None required while threshold limits (Section 2) are kept below maximum allowable concentrations; if TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.

PROTECTIVE GLOVES:

Neoprene or rubber gloves with cuffs.

EYE PROTECTION:

Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Coveralls, apron, or other equipment should be worn to minimize skin contact.

WORK / HYGIENIC PRACTICES:

Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE AND ODOR</b> Pinkish opaque viscous solution, weak hot-springlike odor.	<b>VAPOR PRESSURE</b> 17 mm Hg @ 20° C
<b>pH</b> 0.5 - 1.0	<b>SPECIFIC GRAVITY (WATER = 1)</b> 1.11 ± 0.02
<b>BOILING POINT / BOILING RANGE</b> 212° F (100° C)	<b>SOLUBILITY IN WATER</b> Complete
<b>FLASH POINT</b> Non-flammable	<b>VISCOSITY</b> Not specified
<b>FLAMMABLE LIMITS</b> LEL: NA                      UEL: NA	<b>VAPOR DENSITY (AIR = 1)</b> > 1
<b>AUTO-IGNITION TEMPERATURE</b> ND	<b>EVAPORATION RATE (WATER = 1)</b> < 1
<b>VOLATILE ORGANIC COMPOUND (VOC) INFORMATION (VOC Content Wt%)</b> VOC= 5.0% Maximum.	

## SECTION 10 - STABILITY AND REACTIVITY

<b>STABILITY</b> STABLE                      X Stable under normal conditions.	<b>CONDITIONS TO AVOID:</b> Extreme temperatures.
<b>INCOMPATIBILITY (MATERIALS TO AVOID)</b> Strong oxidizers, strong acids, strong alkalis.	
<b>HAZARDOUS DECOMPOSITION OR BYPRODUCTS:</b> Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.	
<b>HAZARDOUS POLYMERIZATION:</b> Will Not Occur.	<b>CONDITIONS TO AVOID:</b> None Related to Polymerization.

## SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Thiomalic Acid	70-49-5	200 mg / kg IPR - mouse	NE
	200-736-4		
Silica gel	7631-86-9	NE	NE
	231-545-4		
Hydrochloric Acid (b,c,d)	7647-01-0	900 mg / kg Oral - rabbit	1108 ppm / 1H Inhalation - mouse
	231-595-7		
2-Mercaptoethylamine hydrochloride	156-57-0	1352 mg / kg Oral - mouse	NE
	205-858-1		
Methyl Alcohol (a,c,e)	67-56-1	9100 mg / kg Oral - rat	145,000 ppm / 4H Inhalation - rat
	200-659-6		

## SECTION 12 - ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Based on the chemical composition of this product it is assumed that the mixture can be treated in an acclimatized biological waste treatment plant system in limited quantities. However, such treatment should be evaluated and approved for each specific biological system. None of the ingredients in this mixture are classified as a Marine Pollutant.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:**  
 According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used. Dispose of in accordance with Local, State, and Federal Regulations. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations for corrosive materials. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals.

**SECTION 14 - TRANSPORT INFORMATION**

**PROPER SHIPPING NAME:** Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric Acid - CAS# 7647-01-0)

<b>DOT HAZARD CLASS / Pack Group:</b> 8 / III <b>REFERENCE:</b> 49 CFR 173.154, .203, .241 <b>UN / NA IDENTIFICATION NUMBER:</b> UN 3264 <b>LABEL:</b> CORROSIVE <b>HAZARD SYMBOLS:</b> C	 <b>IATA HAZARD CLASS / Pack Group:</b> 8 / III <b>IMDG HAZARD CLASS:</b> 8 / III <b>RID/ADR Dangerous Goods Code:</b> 8 <b>UN TDG Class / Pack Group:</b> 8 / III <b>Hazard Identification Number (HIN):</b> 80
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Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.


**SECTION 15 - REGULATORY INFORMATION**

**TSCA (USA - Toxic Substance Control Act):** All components of this product are listed.  
**SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):** Immediate health.

Acute Health: NO	Chronic Health: NO
Fire: NO	Sudden Release of Pressure: NO
Reactive: NO	

**SARA 313 REPORTABLE INGREDIENTS:** Yes - Methyl Alcohol (CAS# 67-56-1)  
**CERCLA (USA - Comprehensive Response Compensation and Liability Act):** (c) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment in quantities greater than 24,000 pounds, based on the Reportable Quantities (RQ) of the individual components, and in agreement with US Code of Federal Regulations 40 CFR 302.  
**California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:** No  
**CPR (Canadian Controlled Products Regulations):** WHMIS Classification: E, D2B  
**IDL (Canadian Ingredient Disclosure List):** Components of this product identified by CAS number are listed.  
**DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List):** Components of this product identified by CAS number are listed on the DSL or NDSL, or are otherwise in compliance with the New Substances Notification (NSN) regulations.  
**EINECS (European Inventory of Existing Commercial Chemical Substances):** Referenced.

**WGK Water Quality Index:** 1 **VbK Index:** NA

<b>RISK PHRASES:</b> R22 : Harmful if swallowed. R34 : Causes burns.	<b>SYMBOL(S) REQUIRED FOR EU LABEL</b>  (+C): Corrosive (+Xn): Harmful	<b>SAFETY PHRASES:</b> S2 : Keep out of the reach of children. S24/25 : Avoid contact with skin and eyes. S28 : After contact with skin, wash immediately with plenty of soap and water.
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## SECTION 16 - OTHER INFORMATION

**Legend:**

- ACGIH - American Congress of Government Industrial Hygienists**
- CAS - Chemical Abstracts Service**
- EINECS - European Inventory of Existing Commercial Chemical Substances**
- HMIS - Hazardous Materials Identification System**
- IARC - International Agency for Research on Cancer**
- NA - Not Available**
- ND - Not Determined**
- NE - Not Established**
- NR - Not Reported**
- NIOSH - National Institute for Occupational Safety and Health**
- NTP - National Toxicology Program**
- OSHA - Occupational Safety and Health Administration**

HMIS HAZARD RATINGS	HEALTH: FLAMMABILITY: PHYSICAL HAZARD: PERSONAL PROTECTIVE EQUIPMENT:	<b>1</b>          <b>C</b>	0 = INSIGNIFICANT 1 = SLIGHT 2 = MODERATE 3 = HIGH 4 = EXTREME
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**REVISION SUMMARY:**

Revised to GHS/E.U. protocols 8/11/2010 supersedes 12/16/2008 issue. JTV

**MSDS Prepared by:**

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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.