

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

<b>PRODUCT NAME:</b> Mitsubishi SLM - E A C Activator		<b>DATE:</b> May 12, 2009	
<b>PRODUCT NUMBER:</b> SLM - EAC			
TRADE NAME: Mitsubishi SLM - E A C Activator			
GENERAL USE: Activator for SLM ECO - SYSTEM			
CHEMICAL FAMILY:			
PRODUCT DESCRIPTION: Clear pale yellowish solution, amine odor.			
<b>MANUFACTURER</b> <b>Mitsubishi Imaging (MPM), Inc.</b>		DATE PREPARED: <b>May 12, 2009</b>	
ADDRESS (NUMBER, STREET, P.O. BOX) <b>555 Theodore Fremd Avenue</b>		SUPERSEDES: <b>October 20, 2007</b>	
(CITY, STATE AND ZIP CODE) <b>Rye, NY 10580</b>		TELEPHONE NUMBER FOR INFORMATION / Customer Service <b>(914) 925-3200</b>	
COUNTRY <b>USA</b>		<b>Chemtrec 24-HOUR EMERGENCY TELEPHONE NUMBER</b>	
		<b>1-800-424-9300</b>	
		<b>01-703-527-3887</b>	
		North America Toll Free International	

## SECTION 2 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES (Full Text Section 15)
<b>Sodium Hydroxide (a,b)</b>	<b>1 - 5</b>	<b>1310-73-2</b>	<b>215-185-5</b>	<b>C</b>	<b>R-35</b>
<b>Potassium Hydroxide (a,b)</b>	<b>1 - 5</b>	<b>1310-58-3</b>	<b>215-181-3</b>	<b>C</b>	<b>R-35</b>
<b>n-Aminoethyl Ethanolamine</b>	<b>1 - 5</b>	<b>111-41-1</b>	<b>203-867-5</b>	<b>C</b>	<b>R-21/22, 34, 43</b>
<b>Triethylenetetramine-N,N,N',N'',N''',N''''-Hexaacetic Acid, Hexasodium Salt (c)</b>	<b>1 - 5</b>	<b>18719-04-5</b>	<b>Not Found</b>	<b>NC</b>	<b>Not Classified</b>

(a) 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.

(c) Triethylenetetramine-N,N,N',N'',N''',N''''-Hexaacetic Acid, Hexasodium Salt (18719-04-5) is NOT listed on the Canadian DSL or NDSL. All other components of this product identified by CAS number are listed on the DSL or NDSL. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

**NOTES:** Note: 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 Directive 91/155/EEC. 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) directive 91/155/EEC and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directive 67/548/EEC.

## SECTION 3 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Corrosive alkaline liquid, moderately toxic, contact with eyes or skin may cause chemical burns and severe irritation. Ingestion may cause gastric distress and chemical burns to the digestive tract. Hazard symbols for this product - **C** Risk Phrases - **R 34, 36/37/38**

### POTENTIAL HEALTH EFFECTS

#### INHALATION:

Corrosive and irritating to upper respiratory tract and mucous membranes.

#### SKIN:

Corrosive and irritating; chemical burns may result from contact; severe irritant.

#### EYES:

**CORROSIVE:** Contact with eyes is painful and irritating and will cause chemical burns.

#### INGESTION:

Corrosive and irritating to digestive tract; may cause gastric distress, stomach pains and vomiting.

#### 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>

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## SECTION 4 - FIRST AID MEASURES

**INHALATION:**

Remove affected person to fresh air; wash mouth and nasal passages with water repeatedly; if breathing difficulties persist 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.

**SKIN:**

Wash contacted area with soap and water; DO NOT attempt to neutralize with chemical agents; if irritation persists, seek medical attention.

**INGESTION:**

Drink large quantities of water or milk; give diluted vinegar or lemon juice to conscious person; 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, nitrogen 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:**

None

**HAZARDOUS COMBUSTION PRODUCTS:**

Smoke, fumes, oxides of carbon, oxides of nitrogen.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

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

**CAUTION - CORROSIVE.** Wash small spills to sanitary sewer. Large spills - confine spill, soak up with approved absorbent, shovel product into approved container for disposal. For spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to 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>Sodium Hydroxide (a,b)</b>		<b>2C</b>	—	—		<b>2C</b>	—	—
<b>Potassium Hydroxide (a,b)</b>	—	<b>2C</b>	—	—	—	<b>2C</b>	—	—
<b>n-Aminoethyl Ethanolamine</b>		<b>NE</b>				<b>NE</b>		
<b>Triethylenetetramine-N,N,N',N'',N''',N''''-Hexaacetic Acid, Hexasodium Salt (c)</b>		<b>NE</b>				<b>NE</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> Clear pale yellowish solution, amine odor.	<b>VAPOR PRESSURE</b> 17 mm Hg @ 20° C
<b>pH</b> 13.5 ± 0.3	<b>SPECIFIC GRAVITY (WATER = 1)</b> 1.088 ± 0.005
<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

**VOLATILE ORGANIC COMPOUND (VOC) INFORMATION**  
 There are no known Volatile Organic Compounds (VOCs) in this product.

## SECTION 10 - STABILITY AND REACTIVITY

<b>STABILITY</b> STABLE                      X	<b>CONDITIONS TO AVOID:</b> Extreme temperatures.
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**INCOMPATIBILITY (MATERIALS TO AVOID):**  
 Strong oxidizers, strong acids, strong alkalis.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS:**  
 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.
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## SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Sodium Hydroxide (a,b)	1310-73-2	40 mg / kg IPR - Mouse	NE
	215-185-5		
Potassium Hydroxide (a,b)	1310-58-3	273 mg / kg Oral - rat	NE
	215-181-3		
n-Aminoethyl Ethanolamine	111-41-1	3000 mg / kg Oral - rat	NE
	203-867-5		
Triethylenetetramine- N,N,N',N'',N''',N''''-Hexaacetic Acid, Hexasodium Salt (c)	18719-04-5	NE	NE
	Not Found		

(c) Triethylenetetramine-N,N,N',N'',N''',N''''-Hexaacetic Acid, Hexasodium Salt (18719-04-5) is NOT listed on the Canadian DSL or NDSL. All other components of this product identified by CAS number are listed on the DSL or NDSL. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

Do not allow undiluted and/or large quantities of product to enter sewage systems or reach ground water or bodies of water.

## 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.


## 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.

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## SECTION 14 - TRANSPORT INFORMATION

<b>PROPER SHIPPING NAME:</b> Corrosive liquid, n.o.s., (Sodium Hydroxide, Potassium Hydroxide)	
<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 1760 <b>LABEL:</b> CORROSIVE <b>HAZARD SYMBOLS:</b>	
	<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

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

<b>TSCA (USA - Toxic Substance Control Act):</b> All components of this product are listed.	
<b>SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):</b> Immediate health.	
<b>Acute Health:</b> YES	<b>Chronic Health:</b> NO <b>Reactive:</b> NO
<b>Fire:</b> NO	<b>Sudden Release of Pressure:</b> NO
<b>SARA 313 REPORTABLE INGREDIENTS:</b> None	
<b>CERCLA (USA - Comprehensive Response Compensation and Liability Act):</b> Yes, RQ = 1000 lbs.	
<b>California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:</b> No	
<b>CPR (Canadian Controlled Products Regulations):</b> WHMIS Classification: E, D2B	
<b>IDL (Canadian Ingredient Disclosure List):</b> Listed.	
<b>DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List):</b>	
<b>(c) Triethylenetetramine-N,N,N',N'',N''',N''''-hexaacetic acid, hexasodium salt (18719-04-5) is NOT listed on the Canadian DSL or NDSL. All other components of this product identified by CAS number are listed.</b>	
<b>EINECS (European Inventory of Existing Commercial Chemical Substances):</b> Referenced.	

<b>WGK Water Quality Index:</b> 1	<b>VbK Index:</b> NA	
<b>RISK PHRASES:</b> R34 Causes burns. R36/37/38 Irritating to eyes, respiratory system and skin.	<b>SYMBOL(S) REQUIRED FOR EU LABEL</b>  C - Corrosive	<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.

## SECTION 16 - OTHER INFORMATION

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

<b>HMIS HAZARD RATINGS</b>	<b>HEALTH:</b> 2 <b>FLAMMABILITY:</b> 0 <b>PHYSICAL HAZARD:</b> 0 <b>PERSONAL PROTECTIVE EQUIPMENT:</b> C	0 = INSIGNIFICANT 1 = SLIGHT 2 = MODERATE 3 = HIGH 4 = EXTREME
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**REVISION SUMMARY:** Revised to GHS/E.U. protocols 5/12/2009 supersedes 10/20/2007 issue.

**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 procedure are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.