Material Safety Data Sheet

HD-8820

HD8820 Revised 3-FEB-2006 Printed 12-APR-2006

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Tradenames and Synonyms

HD-880-AD12

Company Identification

MANUFACTURER/DISTRIBUTOR
HD MicroSystems(TM)
Cheesequake Road
Parlin
New Jersey
United States
08859

PHONE NUMBERS
Product Information : (800) 346-5656
Transport Emergency : (800) 424-9300 (Outside the US (703)527-3887)
Medical Emergency : (800) 441-7515 (Outside the US (302)774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
Polyamide		30-40
Gamma-butyrolactone	96-48-0	40-60
Propylene Glycol Monomethyl Ether Acetate	108-65-6	1-10
Organosilan Compound(s)		1-5
Photoinitiator		1-10
Proprietary Ingredient(s)		1-10

Components (Remarks)

The specific identities of the following are withheld as trade secrets:

Organosilan Compound(s)
Photoinitiator
Proprietary Ingredient(s)

HAZARDS IDENTIFICATION

Emergency Overview

WARNING
Flammable Liquid
Irritating to eyes, skin, and respiratory tract.

Potential Health Effects

This product is a physical mixture. The health effects information about this product is based on the individual ingredients:

<<Polyamide:Toxic effects unknown.

<<Gamma-butyrolactone:
Skin contact may initially include: skin irritation with discomfort or rash. There are reports in the literature that, after excessive contact, this compound may be absorbed through the skin, producing the effects of systemic toxicity.

Eye contact may initially include: severe eye irritation with discomfort, tearing, or blurring of vision.

Higher exposures may lead to these effects: irritation of the upper respiratory passages, with coughing and discomfort upon inhalation; or temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness upon inhalation or ingestion.

<<PGMEA
Skin contact may initially include: skin irritation with discomfort or rash.

Eye contact may initially include: eye irritation with discomfort, tearing, or blurring of vision.

Inhalation may initially include: nonspecific discomfort, such as nausea, headache, or weakness. Prolonged excessive inhalation exposures may cause irritation of the upper respiratory passages, with coughing and discomfort. Data to evaluate the skin permeation hazard of this compound are insufficient. There are no reports of human sensitization.

<<Organosilan compound(s)
Eye contact: Vapors may cause immediate or delayed severe eye irritation. Liquid can cause severe conjunctivitis and corneal damage.

Skin contact: May produce irritation or contact dermatitis which may be delayed several hours.

(HAZARDS IDENTIFICATION - Continued)

Inhalation: Inhalation of vapors or particulates will irritate the respiratory tract. Overexposure may produce coughing, headache and nausea.

<<Photoinitiator
No information available.

<<Proprietary Ingredient(s)
May cause eye, skin, digestive tract, and respiratory tract irritation.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 74 C (165 F)

Large fires are best controlled by foam.
Solid streams may be ineffective.

(FIRE FIGHTING MEASURES - Continued)

Vapor forms explosive mixture with air.

Hazardous combustion products: Carbon monoxide, smoke, and fumes.

Extinguishing Media

Foam, Dried sand, Dry Chemical, Carbon Dioxide.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear full protective equipment. Apply extinguishent from a distance to prevent splashing of personnel. Isolate area. Wear self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.

Initial Containment

Prevent material from entering sewers, waterways, or low areas. Dike spill with earth or sand.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Place in a chemical waste container using non-sparking tools.

For large spills, dike for later disposal, cover spills with foam, then place in a chemical waste container using non-sparking tools.

HANDLING AND STORAGE

Handling (Personnel)

Avoid contact with eyes, skin or clothing. Avoid inhalation. Wash thoroughly after handling. Wash clothing after use. Use with sufficient ventilation to keep employee exposure below recommended limits.

Shut off gas pilot and electrical igniters and other sources of ignition during use and until all vapors are gone.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Keep away from heat, sparks and flames. Store in a well ventilated place. Store below -18 C (0 F). Keep container closed to prevent contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use sufficient ventilation to keep employee exposure below recommended limits.

Personal Protective Equipment

EYE/FACE PROTECTION: Wear safety glasses or coverall chemical splash goggles.

RESPIRATORS: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Additional Respiratory Protection: Chemical cartridge respirator with an organic vapor cartridge. Airline respirator for high vapor concentration.

Additional Hand Skin and Body Protection: Natural rubber or Butyl rubber are recommended.

Exposure Guidelines

Applicable Exposure Limits
Propylene Glycol Monomethyl Ether Acetate

PEL	(OSHA)	: None Established
TLV	(ACGIH)	: None Established
AEL *	()	: 100 ppm, 15 minute TWA
WEEL	(AIHA)	: 100 ppm, 8 Hr. TWA

* AEL is 's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water	: Insoluble
Odor	: (slight), Aliphatic.
Form	: Liquid.
Color	: Red.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and recommended storage conditions.

Conditions to Avoid

Reducing agents; Oxidizing agents; Bases; Acids; Strong Acids; Strong Oxidizers; Inert gases; Direct Sunlight.

Incompatibility with Other Materials

Reducing agents; Oxidizing agents; Bases; Acids; Strong Acids; Strong Oxidizers; Inert gases; Direct Sunlight.

Decomposition

Carbon monoxide (CO); Nitrogen oxides; Carbon dioxide; water; Various hydrocarbons

Polymerization

Will not violently polymerize or give off heat under normal storage conditions or when being used as a photoresist. The material may slowly polymerize if nitrogen inerted or heated.

TOXICOLOGICAL INFORMATION

Animal Data

May cause absorption in the body by inhalation, dermal and oral.

Corrosive and irritant properties: This material is irritating to eyes, skin, mucous membrane and respiratory tract. Repeated and prolonged contact may cause dermatitis. The inhalation of high vapor concentrations causes dizziness, headache, unconsciousness and weakness.

Gamma-butyrolactone
Inhalation 4 hour LC50: > 5.1 mg/L in rats
Skin absorption LD50: > 10 mL/kg in guinea pigs
Oral LD50: 800 - 1600 mg/kg in rats

PGMEA
Inhalation LC50: no information found
Skin absorption LD50: 5000 mg/kg in rabbits
Oral LD50: 8532 mg/kg in female rats

Polyamide
No data available.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Gamma-butyrolactone is biodegradable.

No relevant data found for the polyamide.

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in general careful matter as highly flammable liquids.

OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : HD MicroSystems(TM)
Telephone : (800) 346-5656

# Indicates updated section.

End of MSDS