

Material Safety Data Sheet



**PI 2611**

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name PI 2611  
 MSDS Number 130000024521  
 Product Use Polyimide coating for semi-conductor industry  
 Manufacturer HD Microsystems™  
 250 Cheesequake Road  
 Parlin, New Jersey 08859  
 Product Information 800-346-5656  
 Transport Emergency CHEMTREC 1-800-424-9300 (outside the U.S. 1-703-527-3887)

**SECTION 2. HAZARDS IDENTIFICATION**

Potential Health Effects  
 Skin May cause skin irritation.  
 Eyes Contact with eyes may cause irritation  
 Inhalation Altered respiratory rate  
 Ingestion Effects due to ingestion may include: altered blood chemistry, Kidney effects, Respiratory tract damage  
 Repeated exposure The material may be absorbed through the skin  
 Target Organs Respiratory system, Kidney  
 Carcinogenicity None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No	Concentration
N-Methyl-2-pyrrolidone	872-50-4	85 - 90 %
Proprietary Polymer		10 - 15 %

**SECTION 4. FIRST AID MEASURES**

Skin contact : Take off all contaminated clothing immediately. Wash off immediately with plenty of water.  
 Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist  
 Inhalation : Move to fresh air.  
 Ingestion : Immediately give plenty of water (if possible charcoal slurry). Call a physician immediately.  
 General advice : Never give anything by mouth to an unconscious person.

**SECTION 5. FIREFIGHTING MEASURES**

Flammable Properties  
 Flash point : 93 °C (199 °F)  
 Method : closed cup  
 Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, Dry powder, Foam, Carbon dioxide (CO2)  
 Unsuitable extinguishing media : High volume water jet, (contamination risk)

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Firefighting Instructions: Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Safeguards (Personnel): Wear personal protective equipment. Avoid contact with skin and eyes.

Spill Cleanup: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel): To avoid spills during handling keep bottle on a metal tray. Avoid contact with skin and eyes. Wash hands before breaks and immediately after handling the product.

Storage: Keep containers tightly closed in a cool, well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Ensure adequate ventilation.

Personal protective equipment: Respiratory protection: In the case of vapour formation use a respirator with an approved filter. Mask with gas filter, type A (EN 141).

Hand protection: Material: butyl-rubber. Glove thickness: 0.5 mm. Wearing time: 480 min. Additional protection: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is

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Eye protection: used, such as the danger of cuts, abrasion, and the contact time. Tightly fitting safety goggles

Exposure Guidelines: Exposure Limit Values: N-Methyl-2-pyrrolidone AEL\* (DUPONT) 5 ppm 8 & 12 hr. TWA, Skin

Biological Exposure Indices

N-Methyl-2-pyrrolidone BEI (ACGIH) 100 mg/l 5-Hydroxy-N-methyl-2-pyrrolidone/Urine. Sampling time: End of shift.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid. Color: brown. Odor: amine-like. Viscosity: 11,500 - 13,000 mPa.s at 25 °C (77 °F)

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions

Conditions to avoid: Temperature 32.2 °C (90.0 °F)

Incompatibility: Oxidizing agents. Strong acids. Strong bases

Hazardous decomposition products: Hazardous decomposition products: Carbon monoxide, Carbon dioxide (CO2), nitrogen oxides (NOx)

Hazardous reactions: Conditions leading to polymerization include exposure to ultraviolet (UV) light.

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excessive heat or to incompatible materials.

**SECTION 11. TOXICOLOGICAL INFORMATION**

PI 2611	Further information	No data is available on the product itself. May cause eye or skin irritation with susceptible persons.
N-Methyl-2-pyrrolidone	Dermal LD50	> 5,000 mg/kg, rat
	Oral LD50	4,150 mg/kg, rat
	Inhalation 4 h LC50	> 5 l mg/l, rat Target Organs: Respiratory Tract Respiratory tract irritation
	Skin irritation	Skin irritation, rabbit
	Eye irritation	Eye irritation, rabbit
	Skin sensitization	Patch test on human volunteers did not demonstrate sensitization properties, human
	Repeated dose toxicity	Oral rat
		Reduced body weight gain
	Carcinogenicity	Overall weight of evidence indicates that the substance is not carcinogenic.
	Mutagenicity	Did not show mutagenic effects in animal experiments. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
	Reproductive toxicity	Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
	Teratogenicity	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity. Reduced embryo-foetal viability

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Foetal malformations

**SECTION 12. ECOLOGICAL INFORMATION**

Aquatic Toxicity	
N-Methyl-2-pyrrolidone	
96 h LC50	: Oncorhynchus mykiss (rainbow trout) > 500 mg/l
72 h EC50	: Algae > 500 mg/l
Environmental Fate	
N-Methyl-2-pyrrolidone	
Biodegradability	: Readily biodegradable, according to appropriate OECD test
Bioaccumulation	: Accumulation in aquatic organisms is unlikely
Additional ecological information	: No data is available on the product itself

**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal	: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities
Environmental Hazards	: If recycling is not practicable, dispose of in compliance with local regulations

**SECTION 14. TRANSPORT INFORMATION**

Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR

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**SECTION 15. REGULATORY INFORMATION**

TSCA Status	On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	N-Methyl-2-pyrrolidone
California Prop. 65	<b>WARNING!</b> This product contains a chemical known to the State of California to cause birth defects or other reproductive harm: N-Methyl-2-pyrrolidone
PA Right to Know Regulated Chemical(s)	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): N-Methyl-2-pyrrolidone

**SECTION 16. OTHER INFORMATION**

Do not use for medical-clinical purposes.  
For further information contact the local DuPont office or DuPont's nominated distributors.

Contact person: HD Microsystems™, Customer Service, 800-346-5656

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