

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.

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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)

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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.

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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

5 / 7

Print Date: 4 - 12 - 2012

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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

6 / 7

Print Date: 4 - 12 - 2012

Material Safety Data Sheet



PI 2611

Version 2.0

Revision Date 11/10/2011

Ref. 130000024521

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	WARNING! 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

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.