

PI 2610

Version 2.0

Revision Date 11/10/2011

Ref. 130000024520

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 2610
MSDS Number : 130000024520

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) closed cup
- Fire and Explosion Hazard : Vapours may form explosive mixtures with air.
- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet

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Firefighting Instructions : In the event of fire, wear self-contained breathing apparatus.
Do not allow run-off from fire fighting to enter drains or water courses.
Evacuate personnel to safe areas.

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) : Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Wear respiratory protection.
- Spill Cleanup : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).
- Accidental Release Measures : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. Prevent further leakage or spillage if safe to do so.
Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. Take precautionary measures against static discharges. Smoking, eating and drinking should be prohibited in the application area. Avoid inhalation of vapour or mist.
Avoid contact with skin and eyes. Wash hands before breaks and immediately after handling the product.
- Handling (Physical Aspects) : Keep away from heat and sources of ignition.
- Storage : Keep away from sources of ignition - No smoking. Keep away from direct sunlight. Keep container closed to prevent contamination.

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Storage temperature : > -20 - < -10 °C (> -4 - < 14 °F)

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 used, such as the danger of cuts, abrasion, and the contact time.

Eye protection

: 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

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Odor : amine-like
Viscosity : 2,500 - 3,000 mPa.s at 25 °C (77 °F)

SECTION 10. STABILITY AND REACTIVITY

Stability : Stable at normal temperatures and storage conditions.

Incompatibility : Oxidizing agents Reducing agents, Strong acids, Strong bases

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

Hazardous reactions : Conditions leading to polymerization include exposure to ultraviolet (UV) light, excessive heat or to incompatible materials.

SECTION 11. TOXICOLOGICAL INFORMATION

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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 : > 5.1 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

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	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 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

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- 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, ADN, IMDG-Code, ICAO/IATA-DGR

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

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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.

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