



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

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"KAPTON" POLYIMIDE FILM, TITANIUM DIOXIDE FILLED, UNCOATED  
KAP00004 Revised 15-FEB-2007  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

Kapton is a registered trademark of DuPont.

Corporate MSDS Number : DU005417

Tradenames and Synonyms

"KAPTON" HY, HNY, HAY  
"KAPTON" BCL-Y

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont  
"Kapton"/"Teflon" Customer Service  
P.O. Box 89  
Circleville, OH 43113

PHONE NUMBERS

Product Information : 1-800-237-4357  
Transport Emergency : 1-800-424-9300  
Medical Emergency : 1-800-441-3637

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
INERT POLYIMIDE FILM		100

Filled types contain:

TITANIUM DIOXIDE	13463-67-7	0-6
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Exposure limits for the following may apply:

DIMETHYL ACETAMIDE (residual in film)	127-19-5	<1
POLYIMIDE POLYMER (as nuisance dust)	25038-81-7	

Components (Remarks)

All reportable ingredients are listed in the TSCA Chemical Substance Inventory.

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HAZARDS IDENTIFICATION  
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## Potential Health Effects

Before using "Kapton" Polyimide Films, read the bulletin on safe handling and use.

## POTENTIAL HEALTH EFFECTS

INHALATION: Not a probable route of exposure for film. Exposure to titanium dioxide encapsulated in the polymer is not likely.

For the polymer from which the film is made, DuPont recommends treating polymer dust as a nuisance particulate.

SKIN CONTACT: No irritation is expected from handling film. Less than 1 ppm dimethyl acetamide was extracted from film by distilled water at 40 deg C for 4 hours.

EYE CONTACT: Not a probable route of exposure for film.

INGESTION: Not a probable route of exposure for film.

## Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
TITANIUM DIOXIDE	2B			

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FIRST AID MEASURES  
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## First Aid

## INHALATION

Not a probable route of exposure for films.

## SKIN CONTACT

Wash with soap and water after handling. If skin irritation develops, consult a physician.

## EYE CONTACT

Flush eyes with water. Consult a physician if irritation persists.

## INGESTION

Not a probable route of exposure for films.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Not a fire or explosion hazard.

The flammability characteristic of polyimide film is reported as "self-extinguishing".

"Kapton" chars but does not burn in air. "Kapton" will burn in an atmosphere of 100% oxygen. The major off-gases are carbon dioxide and carbon monoxide.

The processing of "Kapton" polyimide films can cause the generation of static charge. Precautions for static charges should also be taken when removing plastic films used as protective packaging for "Kapton".

## Extinguishing Media

Water, Foam, Dry Chemical, CO2.

## Fire Fighting Instructions

None required.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

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

## Accidental Release Measures

Pick up to prevent slipping hazard.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Wash thoroughly after handling.

## Storage

Store away from flammable materials.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Safe handling of "Kapton" polyimide films at high temperatures (above 200 deg C) requires adequate ventilation. If small quantities of "Kapton" are involved, normal air circulation may be all that is needed in case of overheating. Whether or not existing ventilation is adequate at higher temperatures will depend on the combined factors of film quantity, temperature and exposure time.

## Personal Protective Equipment

Safety glasses are recommended as good industrial practice.

Respirators are not needed for normal use.

Special protective clothing is not needed for normal use. Gloves are recommended as good industrial practice.

## # Exposure Guidelines

## Applicable Exposure Limits

## TITANIUM DIOXIDE

PEL (OSHA)	: 15 mg/m3, total dust, 8 Hr. TWA
TLV (ACGIH)	: 10 mg/m3, total dust, 8 Hr. TWA, A4
AEL * (DuPont)	: 10 mg/m3, 8 & 12 Hr. TWA, total dust 5 mg/m3, 8 & 12 Hr. TWA, respirable dust

## DIMETHYL ACETAMIDE (residual in film)

PEL (OSHA)	: 10 ppm, 35 mg/m3, 8 Hr. TWA, Skin
TLV (ACGIH)	: 10 ppm, 36 mg/m3, 8 Hr. TWA, Skin, A4
AEL * (DuPont)	: 10 ppm, 8 & 12 Hr. TWA, Skin

## POLYIMIDE POLYMER (as nuisance dust)

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 10 mg/m3, 8 & 12 Hr. TWA, total dust 5 mg/m3, 8 & 12 Hr. TWA, respirable dust

\* 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.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Melting Point	: None
% Volatiles	: 1% max
Solubility in Water	: Insoluble
Odor	: No odor
Form	: Opaque film

(PHYSICAL AND CHEMICAL PROPERTIES - Continued)

Color : Yellow  
Specific Gravity : >1.4

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STABILITY AND REACTIVITY  
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Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

At temperatures above 400 deg C, the major off-gases are carbon monoxide and carbon dioxide.

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ECOLOGICAL INFORMATION  
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Ecotoxicological Information

Aquatic Toxicity

Insoluble.

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DISPOSAL CONSIDERATIONS  
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Waste Disposal

Landfill or incinerate in compliance with federal, state, and local regulations.

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TRANSPORTATION INFORMATION  
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Shipping Information

DOT  
Proper Shipping Name : NOT APPLICABLE  
Hazard Class : NOT REGULATED

