



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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PYRALUX(R) AX Copper Clads (Vapors)
CWW00079 Revised 13-JUN-2003

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Pyralux is a registered trademark of DuPont.

Product Use

In keeping with DuPont's continuing commitment to safety and the environment, we are providing this MSDS as a service to our customers. This product is classified as non-hazardous under OSHA's Hazard Communication Standard (29 CFR 1910.1200). Pyralux(r) products do create off-gases in normal use. These off-gases are regulated, but are present at such low levels during normal use that no hazardous exposure is anticipated.

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
During lamination of this material (300C) and soldering (288C), traces of the following vapors may evolve:		
DIETHYL PHTHALATE	84-66-2	Trace
BENZOPHENONE	119-61-9	Trace
ACETONE	67-64-1	Trace
ACETONITRILE	75-05-8	Trace
OCTENE ISOMERS		Trace

(COMPOSITION/INFORMATION ON INGREDIENTS - Continued)

Components (Remarks)

The quantity of vapors is estimated to be 1 -6 lbs per 100,000 square feet of clad. Vapor evolution results are based on the percentage of weight loss measured by Thermal Gravimetric Analysis (TGA). This weight loss includes water vapor. The pounds of vapor are not all "VOC's" as "defined" by the EPA for Clean Air Act purpose.

HAZARDS IDENTIFICATION

Potential Health Effects

As a result of in-house test data, DuPont believes the potential exposure to the vapors of this product to be minimal.

POTENTIAL HUMAN HEALTH EFFECTS OF OVEREXPOSURE:

Inhalation may cause irritation of the upper respiratory passages, with sneezing, coughing and discomfort; or temporary lung irritation effects with cough, discomfort, difficulty breathing, or shortness of breath.

Inhalation, ingestion or skin contact may cause temporary mild depression of the central nervous system with dizziness, confusion, incoordination or drowsiness followed by an asymptomatic period usually ranging from 12 to 24 hours.

Skin contact may cause redness of the skin and dermatitis with itching or rash. Evidence from animal testing on some vapor components suggests that skin permeation can occur in amounts capable of producing the effects of systemic toxicity.

Eye contact with high concentrations of vapors may cause eye irritation with discomfort, tearing or blurring of vision.

Individuals with pre-existing diseases of the central nervous system, liver or kidneys may have increased susceptibility to the toxicity of excessive exposures.

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

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.

FIRE FIGHTING MEASURES

Flammable Properties

Flammable limits in Air, % by Volume

LEL : not determined

UEL : not determined

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

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

The processing of Pyralux 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 Pyralux

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Runoff from fire control may be a pollution hazard.

None required.

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.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe vapor or mist. Do not breathe dust. Wash thoroughly after handling. Do not get in eyes. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Handling (Physical Aspects)

Good industrial hygiene procedures include washing hands after handling.

Storage

Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Safe handling of "Pyralux AX" polyimide films at high temperatures (above 200 deg C; (392 deg F) requires adequate ventilation. If small quantities of "Pyralux AX" 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

(TOXICOLOGICAL INFORMATION - Continued)

ACETONE

Oral LD50, rat: 9750 mg/kg
Inhalation 4 hour, LC50, rat: 31,983 ppm
Dermal LD50, rabbit: 20,000 mg/kg

ACETONITRILE

Inhalation 4 hour LC50: 17,000 ppm in rats
Ingestion LD50: 6,500 mg/kg in rats
Skin absorption LD50: 984 mg/kg in rabbits

DISPOSAL CONSIDERATIONS

Waste Disposal

Incinerate in compliance with federal, state and local regulations.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

OTHER INFORMATION

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

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 : DuPont Electronic Technologies
Address : 14 TW Alexander Drive
Research Triangle Park, NC 27709
Telephone : 757-686-8663 or 919-248-5027

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS