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

DuPont                        Page   1
Material Safety Data Sheet

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"BYNEL" RESINS ALL IN SYNONYM LIST BYN041
BYN041                    Revised 16-NOV-2004
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"BYNEL" is a registered trademark of DuPont.

Tradenames and Synonyms

"BYNEL" COEXTRUDABLE ADHESIVE RESIN
"BYNEL" CXA E418, CXA XEP168-3,
"BYNEL" CXA 38E536
"BYNEL" CXA 38E802
"BYNEL" CXA 38E841          #
"BYNEL" CXA XB841-1, CXA XB841-2,

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont Packaging & Industrial Polymers
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS
Product Information : 1-(800)-441-7515
Transport Emergency : 1-(800)-424-9300
Medical Emergency : 1-(800)-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

# Components

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALEIC ANHYDRIDE MODIFIED ETHYLENE COPOLYMER</td>
<td>&gt;99.7</td>
<td></td>
</tr>
<tr>
<td>BLEND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*VINYL ACETATE</td>
<td>108-05-4</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>MALEIC ANHYDRIDE</td>
<td>108-31-6</td>
<td>&lt;0.1</td>
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</tbody>
</table>

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
HAZARDS IDENTIFICATION

# Potential Health Effects

ADDITIONAL HEALTH EFFECTS

ACUTE OR IMMEDIATE EFFECTS: ROUTES OF ENTRY AND SYMPTOMS

INGESTION

No data are available. Ingestion is not a probable route of exposure. Based on its similarity with other polymers, "BYNEL" resins are predicted to have low toxicity.

SKIN

No data are available. However, contact with these polymers may cause mild irritation of the skin. Molten polymer contacting the skin will cause thermal burns.

EYE

Mechanical irritation only.

INHALATION

Polymer is not respirable as sold. At typical processing temperatures fumes irritating to the eyes, nose and throat may be produced. This exposure may result in reddening, tearing, and itching of the eyes and soreness in the nose and throat together with coughing.

Overexposure may cause allergic respiratory reaction.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

VINYL ACETATE

Skin contact with liquid Vinyl Acetate may cause skin irritation with discomfort or rash. Skin permeation may occur in amounts capable of producing the effects of systemic toxicity. There are inconclusive or unverified reports of human sensitization. Prolonged exposure to liquid Vinyl Acetate may cause defatting and reddening of the skin.

Eye contact with liquid Vinyl Acetate may cause severe eye irritation with discomfort, tearing, or blurring of vision. Eye contact with Vinyl Acetate vapors may cause eye irritation.

Inhalation of Vinyl Acetate may cause irritation of the upper respiratory passages; or nonspecific discomfort, such as nausea, headache, or weakness.

MALEIC ANHYDRIDE
Material Safety Data Sheet

(HAZARDS IDENTIFICATION - Continued)

Skin contact with Maleic Anhydride may cause skin burns or ulceration. Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are inconclusive or unverified reports of human sensitization.

Eye contact with Maleic Anhydride may cause eye corrosion with corneal or conjunctival ulceration. Exposure to the vapors may cause tearing, blurring of vision, sensitivity to light, or inflammation of the eyelids.

Inhalation of Maleic Anhydride may cause headaches, nausea, irritation or ulceration of the upper respiratory passages; workers have reported nasal irritation after a one minute exposure to 1.5 ppm. This compound may cause asthma-like reactions with shortness of breath, wheezing, or cough. Higher overexposures may cause pulmonary edema (body fluid in the lungs) with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin. Symptoms may be delayed. Prompt medical attention is required.

Ingestion of Maleic Anhydride may cause severe burns of the mouth and tissues of the upper gastrointestinal tract with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure.

Prolonged or gross overexposures may cause abnormal kidney function as detected by laboratory tests.

Carcinogenicity Information

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

<table>
<thead>
<tr>
<th>Material</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>ACGIH</th>
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</thead>
<tbody>
<tr>
<td>VINYL ACETATE</td>
<td>2B</td>
<td>A3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIRST AID MEASURES

# First Aid

INHALATION

If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse. If molten material gets on skin, cool rapidly with cold water. Do not attempt to remove material from skin. Obtain medical treatment for thermal burn.

EYE CONTACT
(FIRST AID MEASURES - Continued)

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

Not a probable route. However, in case of accidental ingestion, call a physician.

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FIRE FIGHTING MEASURES
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# Flammable Properties

Flash Point : NE

Fire and Explosion Hazards:

UNUSUAL FIRE, EXPLOSION HAZARDS The solid polymer can be combusted only with difficulty. An electrostatic charge can potentially build up when pouring pellets. Grounding of equipment is recommended.

HAZARDOUS COMBUSTION PRODUCTS Complete combustion gives carbon dioxide and water. Incomplete combustion gives in addition vinyl acetate, acetic acid, carbon monoxide, and hydrocarbon oxidation products including organic acids, aldehydes, acrolein and alcohols, oxides of nitrogen.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Wear self-contained breathing apparatus.

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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.

Spill Clean Up

Shovel or sweep up.
HANDLING AND STORAGE

Handling (Personnel)

See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

Storage

Store in a cool, dry place. Keep container closed to prevent contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION Local ventilation must be used over processing equipment to maintain vinyl acetate concentrations in air below the PEL.

See Bulletin No. 61548 "Proper Use of Local Exhaust Ventilation During Processing of Plastics".

VENTILATION When hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting or grinding operations with this material, use local exhaust to control the concentration of dust below exposure limits.

Personal Protective Equipment

EYE/FACE PROTECTION: Wear coverall chemical splash goggles. Additionally, wear a face shield where the possibility exists for face contact due to splashing or spraying of material.

RESPIRATOR: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, jacket, hood and boots.

Exposure Guidelines
Exposure Limits

"BYNEL" RESINS ALL IN SYNONYM LIST BYN041
PEL (OSHA) : Particulates (Not Otherwise Regulated)
15 mg/m³, 8 Hr. TWA, total dust
5 mg/m³, 8 Hr. TWA, respirable dust

Other Applicable Exposure Limits

VINYL ACETATE
PEL (OSHA) : None Established
TLV (ACGIH) : 10 ppm, 35 mg/m³, 8 Hr. TWA, A3
STEL 15 ppm, 53 mg/m³, A3
AEL * (DuPont) : 10 ppm, 8 & 12 Hr. TWA

MALEIC ANHYDRIDE
PEL (OSHA) : 0.25 ppm, 1.0 mg/m³, 8 Hr. TWA
TLV (ACGIH) : 0.1 ppm, 8 Hr. TWA, A4
Sensitizer
AEL * (DuPont) : 0.1 ppm, 8 & 12 Hr. TWA

* 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point</td>
<td>NA</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>Negligible</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild ester-like</td>
</tr>
<tr>
<td>Form</td>
<td>Pellets</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>NA</td>
</tr>
</tbody>
</table>

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STABILITY AND REACTIVITY
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Chemical Stability

Stable at normal temperatures and storage conditions.

Conditions to Avoid

Temperatures above 238 C (460 F).

Incompatibility with Other Materials

Incompatible or can react with strong acids, bases.

# Decomposition

Decomposes with heat.

Decomposition temperature: Not determined
Hazardous gases or vapors can be released, including carbon dioxide, water, vinyl acetate, acetic acid, carbon monoxide, and, hydrocarbon oxidation products, including, organic acids, aldehydes, acrolein, and, alcohols, oxides of nitrogen.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

# Animal Data

Vinyl Acetate

Inhalation 4 hour LC50: 4000 ppm in rats
Skin absorption LD50: 2335 mg/kg in rabbits
Oral LD50: 2920 mg/kg in rats

Vinyl Acetate is a slight skin and a severe eye irritant. Vinyl Acetate was a weak skin sensitizer in guinea pigs but no skin sensitization was observed in mice.

No effects from repeated exposure to Vinyl Acetate by inhalation were observed at 100 ppm in rats. Exposure to higher concentrations of Vinyl Acetate by inhalation caused eye irritation and lacrimation, reduced weight gain, and irritation of the respiratory tract with breathing difficulty. The effects observed in rats and mice exposed by inhalation to 200 and 600 ppm for two years include reduced body weight, and pathological changes in the nose and respiratory tract. Nasal cavity tumors were observed in rats but not in mice.

Drinking water studies suggest Vinyl Acetate may be weakly carcinogenic at high concentrations in rats and mice. In one study, reduced body weight, but no tumors, occurred in rats administered 5000 ppm Vinyl Acetate in their drinking water for two years. In contrast, preliminary results from other drinking water studies with Vinyl Acetate at 5000 ppm or higher show an increased incidence of oral cavity and upper digestive tract tumors in rats and mice. In a 90-day drinking water study in rats and mice that were administered 1000, 5000, 10,000, or 24,000 ppm no clinical signs of toxicity attributable to Vinyl Acetate were observed.

Vinyl Acetate is weakly carcinogenic in rodents but only at very high concentrations and in tissues that directly contact Vinyl Acetate (nose by inhalation and oral cavity/upper digestive tract by ingestion). Research on the mechanism of nasal and upper digestive tract tumor induction suggests that levels at which humans are likely to be exposed are below the threshold for effects that contribute to tumor formation.
Vinyl Acetate is not a developmental toxin in animals. The effect of Vinyl Acetate in animals on reproduction is not considered significant.

Genetic damage was produced in some types of cell cultures, but was negative in other studies. Where genotoxicity was found in animals, effects were observed at toxic doses. No relevant tests for heritable genetic damage were available.

Maleic Anhydride

Skin absorption LD50: 2620 mg/kg in rabbits
Oral LD50: 235 mg/kg (10% solution in corn oil) female rats

Maleic Anhydride is corrosive to the skin and eyes. Tests for skin sensitization have produced positive and negative results in animals.

No deaths occurred when rats were exposed to by inhalation to saturated vapors of maleic anhydride for 8 hours. Repeated or long-term exposure of rats, hamsters or monkeys to this material caused eye, nose, and lung irritation; reduced weight gain was noted at the higher concentrations. Evidence of respiratory sensitization was observed in guinea pigs.

Repeated ingestion of capsules containing Maleic Anhydride caused severe gastrointestinal corrosion. Animals fed diets containing high doses of this material showed pathological changes to the kidney and altered urine analysis. In a different repeated dose ingestion study in rats fed Maleic Anhydride effects were observed in the liver, kidneys, and heart.

Animal testing indicates that Maleic Anhydride does not have carcinogenic, developmental, or reproductive effects.

Maleic Anhydride did not produce genetic damage in bacterial cultures or in animals. It does produce genetic damage in mammalian cell cultures. It has not been tested for heritable genetic damage.

# Ecotoxicological Information

AQUATIC TOXICITY:

No information is available. Do not discharge to streams, ponds, lakes or sewers.
DISPOSAL CONSIDERATIONS

Waste Disposal

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

TRANSPORTATION INFORMATION

# Shipping Information

DOT/IMO/IATA
Not Regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

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

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- None known.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- None known.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- Vinyl acetate.
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: T. P. PRICE
DUPONT PACKAGING & INDUSTRIAL POLYMERS
Address: CHESTNUT RUN PLAZA 713
WILMINGTON, DE 19880-0713
Telephone: 302-999-4664

# 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