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

"APPEEL" LIDDING SEALANT RESINS ALL IN SYNONYM LIST LSR021
LSR021 Revised 30-JUN-2007

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"APPEEL" is a registered trademark of DuPont.

Tradenames and Synonyms

"APPEEL" 20D752
"APPEEL" 20D752-1 #
"APPEEL" 20D752-2 #
"APPEEL" 20D752-3 #

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

Material	CAS Number	%
ETHYLENE/ACRYLATE COPOLYMER		50
POLYSTYRENE	9003-53-6	<50
MINERAL OIL	8042-47-5	<3
STYRENE	100-42-5	<0.05
METHYL ACRYLATE	96-33-3	<0.05

Components (Remarks)

Material is not known to contain Toxic Chemicals 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 available for mixture.

SKIN No data are available. However, based on experience with handling these polymers, no unusual dermatitis hazard is expected from routine handling. Molten polymer contacting the skin will cause thermal burns.

EYE Mechanical irritation.

INHALATION Polymer is not respirable as marketed. At processing temperatures above 260 degrees C, fumes irritating to the eye, nose, and throat may be produced. Exposure may result in redness, tearing, and itching in the eyes together with soreness in the nose and throat with coughing.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

POLYSTYRENE

HEALTH HAZARD INFORMATION:

Inhalation LC50: no information found
Skin absorption LD50: no information found
Oral LD50: no information found

The compound is untested for skin irritancy, is untested for eye irritancy, and is untested for animal sensitization. The effects in animals from exposures by inhalation, ingestion, or skin contact have not been determined. No animal test reports are available to define carcinogenic, mutagenic, embryotoxic, or reproductive hazards.

Human health effects of overexposure by inhalation, ingestion, or skin or eye contact may initially include: no acceptable information is available to confidently predict the effects of excessive human exposure to this compound.

STYRENE

Skin contact with liquid Styrene may cause irritation with discomfort or rash. Evidence suggests that skin permeation can occur in amounts capable of producing the effects of systemic toxicity. Styrene has been infrequently associated with skin sensitization in humans.

(HAZARDS IDENTIFICATION - Continued)

Eye contact with liquid Styrene or the vapor may cause eye irritation with discomfort, tearing, or blurring of vision.

Inhalation may cause irritation of the upper respiratory passages, with coughing and discomfort; or eye irritation.

Ingestion may cause gastrointestinal irritation with upper abdominal pain, "heart burn", nausea, vomiting, and diarrhea. However, there may be no symptoms at all.

A serious ingestion hazard is aspiration (liquid entering the lungs during ingestion or vomiting) which may result in "chemical pneumonia". Symptoms include coughing, gasping, choking, shortness of breath, bluish discoloration of the skin, rapid breathing and heart rate, and fever. Pulmonary edema or bleeding, drowsiness, confusion, coma and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after the exposure, depending on how much chemical entered the lungs.

Higher exposures may lead to liver or kidney effects; nonspecific discomfort, such as nausea, headache, or weakness, fatigue, or lack of concentration weakness; or temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; neurological impairment such as decreased reaction time or visual disturbances (e.g. loss of color discrimination); or fatality from gross overexposure.

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

In humans exposed to styrene, genetic damage was observed in peripheral white blood cells. Several studies have suggested an association between leukemia and lymphomas and exposure to styrene; the data indicates that this occurred with the highest exposure concentrations but do not indicate an increased risk with cumulative exposure to Styrene. In addition, because of concomitant exposure to other chemicals it is not possible to single out styrene as the causative agent.

METHYL ACRYLATE

Skin contact with Methyl Acrylate may cause skin corrosion, burns or ulcers; or allergic skin rashes. Evidence suggests that skin permeation can occur in amounts capable of producing the effects of systemic toxicity. The compound has been infrequently associated with skin sensitization in humans.

Eye contact with Methyl Acrylate may cause eye corrosion or ulceration.

(HAZARDS IDENTIFICATION - Continued)

Inhalation of Methyl Acrylate may cuase irritation of the upper respiratory passages. Prolonged exposure may cause pulmonary edema (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.

Ingestion of Methyl Acrylate may cause burns of the mouth, throat, esophagus and stomach, with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure - damage may appear days after exposure.

Individuals with preexisting diseases of the skin, eyes, digestive or respiratory tract may have increased susceptibility to the toxicity of excessive exposures.

Carcinogenicity Information

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

Material	IARC	NTP	OSHA	ACGIH
STYRENE	2B			

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

The compound is not likely to be hazardous by skin contact but cleansing the skin after use is advisable.
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

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.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : NA

Fire and Explosion Hazards:

UNUSUAL FIRE, EXPLOSION HAZARDS The solid polymer can be combusted only with difficulty. Any 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, carbon monoxide and hydrocarbon oxidation products including organic acids, aldehydes, alcohols, and zinc oxides.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus (SCBA) and full protective equipment.

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.

Spill Clean Up

Shovel or sweep up.

HANDLING AND STORAGE

Storage

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

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use static controls. Static charges can build up and ignite dust or solvent laden atmospheres.

VENTILATION Local ventilation must be used over processing equipment.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material.

RESPIRATORS

A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge with a dust/mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Exposure Guidelines

Exposure Limits

"APPEEL" LIDDING SEALANT RESINS ALL IN SYNONYM LIST LSR021

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

MINERAL OIL

PEL	(OSHA)	: 5 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	: 5 mg/m3, 8 Hr. TWA, STEL 10 mg/m3 Notice of Intended Changes (2007) WITHDRAW DOCUMENTATION AND ADOPTED TLV, SEE NIC ENTRY FOR MINERAL OIL
AEL *	(DuPont)	: 5 mg/m3, 8 & 12 Hr. TWA

STYRENE

(Other Applicable Exposure Limits - Continued)

PEL	(OSHA)	: 100 ppm, 8 Hr. TWA 200 ppm, Ceiling 600 ppm - 5 Min. Max
TLV	(ACGIH)	: 20 ppm, 85 mg/m3, 8 Hr. TWA, A4 STEL 40 ppm, 170 mg/m3, A4
AEL *	(DuPont)	: 20 ppm, 8 & 12 Hr. TWA 40 ppm, 15 minute TWA

METHYL ACRYLATE

PEL	(OSHA)	: 10 ppm, 35 mg/m3, 8 Hr. TWA, Skin
TLV	(ACGIH)	: 2 ppm, 8 Hr. TWA, Skin, A4 Sensitizer
AEL *	(DuPont)	: 2 ppm, 8 & 12 Hr. TWA, Skin

* 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.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	: 90 C (194 F)
% Volatiles	: Negligible
Solubility in Water	: Negligible
Odor	: Mild ester-like
Form	: Pellets
Color	: Translucent to white
Specific Gravity	: NA
Density	: 0.98 g/cm3

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Conditions to Avoid

Temperatures above 260 C (500 F) .

Incompatibility with Other Materials

Incompatible or can react with strong acids, oxidizing agents.

Decomposition

Hazardous gases or vapors can be released, including carbon monoxide, and, hydrocarbon oxidation products, including, organic acids, aldehydes, alcohols, and, zinc oxides.

(STABILITY AND REACTIVITY - Continued)

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Styrene
Inhalation 4 hour LC50: 2770 ppm in rats
Oral LD50: 5000 mg/kg in rats

Styrene is a moderate skin and a moderate eye irritant, but is not a skin sensitizer in animal tests.

Single exposures by inhalation produced eye and respiratory irritation, nervous system effects, decreased white cell counts, and altered electroencephalograms. Repeated inhalation exposure of rats resulted in eye and respiratory irritation, kidney and liver enzyme alterations and morphologic changes in liver cells and nasal cavity, and kidney effects. Hearing loss was observed in young rats exposed to high concentrations for 3 weeks. Long-term exposure caused marked eye and nose irritation, and poor weight gain in rats exposed to approximately 2000 ppm. In another study liver weights were increased and microscopic changes in the lung were observed in rats exposed to 1000 ppm.

Repeated ingestion exposures produced nonspecific effects such as weight loss, irritation of the gastrointestinal tract with forestomach hyperplasia, and minor weight changes in liver, kidney, spleen and thymus. Long-term administration of levels greater than 400 mg/kg of Styrene by oral gavage in animals resulted in decreased body weights, liver and kidney weight changes, blood changes, and liver, spleen, lung, kidneys and forestomach effects. No significant adverse changes were observed in animals receiving up to 250 ppm of Styrene in their drinking water.

Repeated dermal applications of Styrene to the skin of rats, rabbits, or guinea pigs caused moderate irritation and slight necrosis. Reversible liver damage also occurred in rats.

Styrene was not carcinogenic in rats exposed by ingestion and inhalation. There was limited evidence of carcinogenicity in mice.

Developmental toxicity was not observed in the offspring of rats and rabbits exposed by inhalation to 600 ppm Styrene; and in rats receiving oral doses of up to 300 mg/kg. In a three-generation reproduction study in rats receiving 125 or 250 ppm of Styrene in drinking water; no treatment related effects on reproductive performance were seen.

(TOXICOLOGICAL INFORMATION - Continued)

In some tests, Styrene produces genetic damage in bacterial and mammalian cell cultures as well as tests in animals. In other tests, no genetic effects are reported. Positive results are sometimes attributed to the presence of Styrene Oxide.

Methyl Acrylate
Inhalation 4 hour LC50: 1000 ppm in rats
Skin absorption LD50: 1300 mg/kg in rabbits
Oral LD50: 300 mg/kg in rats

Methyl Acrylate is a severe skin and eye irritant, and is a skin sensitizer in animals.

Ingestion of single doses by rats of 86 or 172 mg/kg caused an increase in the size of the stomach and histopathological changes in the stomach mucosal. Rabbits administerd 24 doses, 23 mg/kg/day, 5 days a week had slight decrease in weight but no other significant changes were noted. Methyl Acrylate administered in the drinking water of rats for 13-weeks caused decreased water consumption, decreased body weight gain, and increased relative kidney weights and an increase in the number of of rats with spontaneous renal disease.

No significant effects occurred in rats exposed to Methyl Acrylate by inhalation at a concentration of 110 ppm for 32 days. Rabbits exposed by inhalation for 50 days to 93 ppm resulted in slight nasal and conjunctival irritation; rats and guinea pigs exposed to the same concentration for the same period demonstrated no adverse changes. In a subsequent study rats exposed to higher doses had dose-related lesions of the nasal mucosal and olfactory tracts. In another study, rats exposed to concentrations of 23, 124, 242, or 626 ppm resulted in mortality at the high dose; at 242 ppm mucosal irritation, bloody ocular and nasal discharge, severe shortness of breath, decreased body weight and increased relative lung and liver weights; 124 ppm caused decreased body weight and in females increased relative lung and liver weight; the no-observed-effect-level (NOEL) was 23 ppm. Rats exposed by inhalation for 2 years to 15, 45, or 135 ppm resulted in irritation of nasal mucosa mucosa and atrophy of olfactory mucosa, and dose related corneal opacity and vascularization of eyes.

Tests in animals with Methyl Acrylate demonstrate no carcinogenic activity. Animal data show fetotoxicity (reduced body weight) but only at exposure levels producing other toxic effects in the adult animal. No animal test reports are available to define reproductive hazards.

Methyl Acrylate did produce genetic damage in bacterial and mammalian cell cultures as well as in tests on animals; however some bacterial and mammalian cell culture test have been negative. It has not been tested for heritable genetic damage.

ECOLOGICAL INFORMATION

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 LAWS

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.

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): None known.

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.

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 # 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