



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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 "SURLYN" REFLECTION SERIES, SUPERGLOSS MOLDING ALLOYS ALL IN SYNONYM
 LIST SUR032
 SUR032 Revised 1-JUL-2005

 CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"SURLYN" is a registered trademark of DuPont.

Tradenames and Synonyms

"SURLYN" SG201BF NC010,
 "SURLYN" SG201U NC010, SG201UC NC010, SG201UF NC010,
 "SURLYN" SG201UG BK001, SG201UG BK002, SG201UG BK003,
 "SURLYN" SG201UG NC010, SG201UK NC010, SG201UM NC010,
 "SURLYN" SG201UG NC021, SG201UG NC022, #
 "SURLYN" SG201UN BK002, SG201UN NC010,
 "SURLYN" SG201US NC010, SG201UT NC010,
 "SURLYN" SG202U NC010, SG202UB NC010, SG202UB BK001,
 "SURLYN" SG202UG NC010, SG202UH NC010,
 "SURLYN" SG210 BK001, SG210 NC010

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/METHACRYLIC ACID COPOLYMER, ZINC SALT	28516-43-0	<60
NYLON 6	25038-54-4	<60
CAPROLACTAM	105-60-2	<1.5
NON-REGULATED STABILIZERS		<3
CARBON BLACK (BK TYPES)	1333-86-4	<2
*ZINC COMPOUNDS	7440-66-6	<5
*ZINC STEARATE	557-05-1	<2

* 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, Surlyn(R) resins are predicted to have low toxicity.

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

EYE Contact with processing vapors may cause severe eye irritation.

INHALATION Polymer is not respirable as sold. At processing temperatures above 250 C (482 F), 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.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE None known.

NYLON 6

Eye contact with Nylon 6 particles may cause eye irritation with discomfort, tearing, or blurring of vision.

Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human sensitization.

CARBON BLACK

Immediate effects of overexposure to Carbon Black by inhalation may include irritation of the nose, throat, and lungs with cough, difficulty breathing or shortness of breath.

If particles from Carbon Black contact the eye, mechanical irritation with tearing, pain or blurred vision may result.

Significant skin permeation, and systemic toxicity, after contact with Carbon Black appears unlikely. There are no reports of human sensitization.

(HAZARDS IDENTIFICATION - Continued)

Epidemiologic studies demonstrate no significant risk of human cancer from exposure to Carbon Black. While some reports cite an increased incidence of pulmonary abnormalities, such as decreased pulmonary function and radiological changes among Carbon Black workers, other reports show no correlation between exposure and effects on pulmonary function or disease.

Increased susceptibility to the effects of Carbon Black may be observed in persons with pre-existing disease of the lungs.

CAPROLACTAM

Human experience or case reports have identified the following potential effects from overexposure by inhalation to Caprolactam: irritation of the nose and throat with sneezing, sore throat, dry throat or runny nose; irritation of the gastrointestinal tract with heartburn or discomfort; liver abnormalities; central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness; convulsions; nosebleed; or bitter taste. Repeated and/or prolonged inhalation may cause central nervous system abnormalities. Less frequently, liver abnormalities have been reported. Exposure to Caprolactam fumes or dust may cause concentration-related increases in skin, eye, and upper respiratory tract irritation.

Human experience or case reports have identified the following potential effects from overexposure by skin contact with Caprolactam: skin irritation with itching, burning, redness, swelling or rash; dermatitis with itching or rash; or skin sensitization. By itself 5% Caprolactam showed no clear evidence of dermatitis; however, skin sensitization has been reported in Caprolactam manufacturing facilities. Skin permeation may occur in amounts capable of producing the effects of systemic toxicity.

Eye contact with Caprolactam may cause eye irritation with tearing, pain or blurred vision. Prolonged or high exposure may cause corneal damage.

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the central nervous system.

Carcinogenicity Information

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

Material
CARBON BLACK (BK TYPES)

IARC NTP OSHA ACGIH
2B

FIRST AID MEASURES

First Aid

INHALATION

No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer 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

No specific intervention is indicated as compound is not likely to be hazardous by ingestion.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : NE

Fire and Explosion Hazards:

The solid polymer can be combusted only with difficulty.

Hazardous gases/vapors produced in fire are aldehydes, ammonia, carbon dioxide, carbon monoxide, oxides of nitrogen, oxides of zinc, phosphorous oxides, hydrogen phosphide, and, oxides of sulfur.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Wear self-contained breathing apparatus.

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

Sweep up to avoid slipping hazard.

HANDLING AND STORAGE

Handling (Personnel)

See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

Storage

Store in a cool, dry place. Keep containers tightly closed to prevent moisture absorption and contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION: Local ventilation should 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

When temperatures exceed 250 degrees C and ventilation is inadequate to maintain concentrations below exposure limits, use a positive pressure air supplied respirator. 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

"SURLYN" REFLECTION SERIES, SUPERGLOSS MOLDING ALLOYS ALL IN
SYNONYM LIST SUR032

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

CAPROLACTAM

PEL (OSHA) : None Established
TLV (ACGIH) : 5 mg/m³, 8 Hr. TWA, Aerosol, & vapor, A5

AEL * (DuPont) : None Established

CARBON BLACK (BK TYPES)

PEL (OSHA) : 3.5 mg/m³, 8 Hr. TWA
TLV (ACGIH) : 3.5 mg/m³, 8 Hr. TWA, A4
AEL * (DuPont) : 0.5 mg/m³, 8 & 12 Hr. TWA, (Polynuclear
Aromatic Hydrocarbon Content <0.1%)
Includes Channel, Lamp, and Thermal
Black

ZINC STEARATE

PEL (OSHA) : 15 mg/m³, total dust, 8 Hr. TWA
5 mg/m³, respirable dust, 8 Hr. TWA
TLV (ACGIH) : 10 mg/m³, total dust, 8 Hr. TWA
AEL * (DuPont) : None Established

* 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 : NA
% Volatiles : NA
Solubility in Water : Negligible
Odor : Negligible
Color : Natural Color, Pigmented.
Form : Pellets
Specific Gravity : NA

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Conditions to Avoid

Temperatures above 300 C (572 F) .

(STABILITY AND REACTIVITY - Continued)

Incompatibility with Other Materials

Incompatible or can react with strong acids, oxidizing agents.

Decomposition

Decomposes with heat.

Decomposition temperature: NA

Hazardous gases or vapors can be released, including aldehydes, ammonia, carbon dioxide, carbon monoxide, oxides of nitrogen, oxides of zinc, phosphorous oxides, hydrogen phosphide, and, oxides of sulfur.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Nylon 6

Inhalation 0.5 hour LC50: 11,000 mg/m3 in mice
Oral LD50: 3,200 mg/kg in rats

Nylon 6 is not a skin irritant, but is an eye irritant in animal tests.

Repeated ingestion exposures caused slower rate of weight gain and lower food consumption, but no anatomic injury was observed after exposure ended.

No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive hazards.

Caprolactam

Skin Absorption LD50: 1410 mg/kg in rabbits
Oral LD50: 1210 mg/kg in rats
Inhalation 4 hour LC50: 8.1 mg/L in rats (as respirable aerosol)

Caprolactam is a skin irritant, a severe eye irritant, and is a mild skin sensitizer when tested at very high concentrations in animals.

Single dermal exposure to near lethal doses caused edema, and tremors or convulsions.

(TOXICOLOGICAL INFORMATION - Continued)

Single ingestion exposure in rats to near lethal doses caused irritation of the gastrointestinal tract, pathological changes of the brain and liver, tremors or convulsions, and altered liver enzyme activity. Repeated dosing of lower concentrations caused decreased body weight. Effects on kidney function have been observed but were attributable to a reversible physiologic change. Long term exposure caused body weight reductions, reduced food consumption, and anemia.

Single inhalation exposure in rats caused nasal/ocular irritation and alterations in blood pressure. Repeated inhalation exposure at high levels caused nasal/ocular irritation, lung and spleen pathology, and abnormal weight gain in rats. At lower levels, respiratory tract irritation with pathological changes in the nose and larynx were observed.

In animal testing Caprolactam has not caused carcinogenicity, developmental or reproductive toxicity.

There are reports indicating that Caprolactam produced genetic damage in some animal or mammalian cell culture tests; however, the majority of in vitro and in vivo reports in the literature show negative results.

Carbon Black

Oral ALD, rat: > 25,100 mg/kg

Repeated inhalation exposure of animals to Carbon Black caused inflammation of the respiratory tract, lungs and emphysema.

Repeated exposure to high doses of Carbon Black by ingestion or skin contact caused no significant toxicological effects.

No adequate studies have been conducted in animals to define the carcinogenicity of Carbon Black by ingestion. In several skin painting studies using various Carbon Blacks no carcinogenicity was observed. Tests by inhalation for carcinogenicity in rats show significant increases in lung tumors in female rats but not male rats. In another study using female mice exposed by inhalation to Carbon Black there was no increase in the incidence of respiratory tract tumors. Researchers conducting the rat inhalation studies believe that these effects probably result from the massive accumulation of small dust particles in the lung which overwhelm the normal lung clearance mechanisms. This represents "lung overload" phenomenon, rather than a specific chemical effect of the dust particle in the lung.

Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures. Tests in animals for genetic toxicity have produced mostly negative results. No animal data are available to define developmental or reproductive toxicity.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water.

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
Proper Shipping Name : 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)- Zinc Stearate, Carbon Black, Zinc.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- Carbon Black (BK Types).

