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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: PRIMER BLACK

PRODUCT CODE: 459N-41105

060130

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
872-50-4	METHYL PYRROLIDONE	3	A 5.0 ppm 8 & 12 hour TWA D 5.0 ppm 8 & 12 hour TWA Skin O None
25928-85-2	POLYAMIDE-IMIDE POLYMER		A None O None
409-21-2	SILICON CARBIDE		A 3.0 mg/m3 Respirable Dust non fibrous A 10.0 mg/m3 inhalable dust non fibrous D 5.0 mg/m3 Total Dust O None
98-00-0	FURFURYL ALCOHOL		A 15.0 ppm 15 min STEL Skin A 10.0 ppm Skin O 50.0 ppm Skin



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***** SECTION 2 - Composition, Information on Ingredients *****
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25067-11-2 FLUORINATED ETHYLENE PRO-
PYLENE RESIN

O 15.0 mg/m3
Total Dust
PNOR
O 5.0 mg/m3
Respirable Dust
PNOR
D 10.0 mg/m3
8 & 12 hour TWA
Total Dust
D 5.0 mg/m3
8 & 12 hour TWA
Respirable Dust
A None

9002-84-0 POLYTETRAFLUOROETHYLENE

O 15.0 mg/m3
Total Dust
PNOR
O 5.0 mg/m3
Respirable Dust
PNOR
D 10.0 mg/m3
Total Dust
D 5.0 mg/m3
Respirable Dust
A None

60828-78-6 POLYETHYLENE GLYCOL TRIM-
ETHYLNONYLETHYR

A None
O None

7732-18-5 WATER

A None
O None

1344-28-1 ALUMINUM OXIDE

8

A 10.0 mg/m3
O 15.0 mg/m3
Total Dust
O 5.0 mg/m3
Respirable Dust

57455-37-5 SODIUM ALUMINUM SULPHO-S-
ILICATE (ULTRAMARIN

A None
O None

1333-86-4 CARBON BLACK

0.3

A 3.5 mg/m3
O 3.5 mg/m3
D 0.5 mg/m3
8 & 12 hour TWA

121-44-8 TRIETHYLAMINE

1

A 3.0 ppm
15 min STEL
Skin



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***** SECTION 2 - Composition, Information on Ingredients *****
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A 1.0 ppm
Skin
O 25.0 ppm

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

WARNING! VAPORS AND SPRAY MIST HARMFUL IF INHALED. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION.

Potential Health Effects:

Inhalation:

May cause nose and throat irritation.

Ingestion:

May result in gastrointestinal distress.

Skin or eye contact:

May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:

METHYL PYRROLIDONE

The following medical conditions may be aggravated by exposure: skin disorders

Tests in some laboratory animals indicate this compound may have embryotoxic activity.

Tests in laboratory animals have shown effects on any of the following organs/systems: kidneys liver

WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.

FURFURYL ALCOHOL

Can be absorbed through the skin in harmful amounts.

Eye contact may cause irritation and corneal opacity.

FLUORINATED ETHYLENE PROPYLENE RESIN

Inhalation of fluoropolymer dust may cause irritation of the nose, throat and lungs with cough, difficulty breathing or shortness of breath. Inhalation of fumes (fine particulates) and gases produced from overheated fluoropolymer may result in delayed or immediate respiratory effects. The severity of these effects depends on the extent of overheating and the quantity inhaled. Mild exposure may



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***** SECTION 3 - Hazards Information *****
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result in polymer fume fever, a temporary (24-48 hrs) flu-like condition characterized by fever, chills, and/or cough. These symptoms are not immediate and typically occur after a delay of approximately 4-24 hours following exposure. However, exposure to decomposition products (fume and fluorinated gases) from fluoropolymer heated to temperatures above the typical processing temperature, especially in poorly ventilated or confined spaces, may cause extensive and potentially life-threatening lung damage. These decomposition products may produce progressive breathing difficulty and later develop into severe pulmonary edema. Edema may be delayed and unlike polymer fume fever, requires medical intervention.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 380 C (716 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin and eye irritation. (3ppm - ceiling ACGIH-TLV). High concentrations can cause lung damage, pulmonary edema, burns. Some vegetation is particularly sensitive to damage by hydrogen fluoride and attention must be given to exhaust ventilation. Explosive reaction may occur above 800 degrees F with finely divided fluorocarbon and metal powder (aluminum or magnesium). Operations such as grinding, buffing or grit blasting may generate such mixtures. Avoid any dust buildup with fluorocarbons and metal mixtures.

WARNING: This chemical contains Tetrafluoroethylene which is known to the State of California to cause cancer.

POLYTETRAFLUOROETHYLENE

Inhalation of fluoropolymer dust may cause irritation of the nose, throat and lungs with cough, difficulty breathing or shortness of breath. Inhalation of fumes (fine particulates) and gases produced from overheated fluoropolymer may result in delayed or immediate respiratory effects. The severity of these effects depends on the extent of overheating and the quantity inhaled. Mild exposure may result in polymer fume fever, a temporary (24-48 hrs)

flu-like condition characterized by fever, chills, and/or cough. These symptoms are not immediate and typically occur after a delay of approximately 4-24 hours following exposure. However, exposure to decomposition products (fume and fluorinated gases) from fluoropolymer heated to temperatures above the typical processing temperature, especially in poorly ventilated or confined spaces, may cause extensive and potentially life-threatening lung damage. These decomposition products may produce progressive breathing difficulty and later develop into severe pulmonary edema. Edema may be delayed and unlike polymer fume fever, requires medical intervention.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 400 C (750 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin and eye irritation. (3ppm - ceiling ACGIH-TLV). High concentrations



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***** SECTION 3 - Hazards Information *****
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can cause lung damage, pulmonary edema, burns. Some vegetation is particularly sensitive to damage by hydrogen fluoride and attention must be given to exhaust ventilation. Explosive reaction may occur above 800 degrees F with finely divided fluorocarbon and metal powder (aluminum or magnesium). Operations such as grinding, buffing or grit blasting may generate such mixtures. Avoid any dust buildup with fluorocarbons and metal mixtures.

WARNING: This chemical contains Tetrafluoroethylene which is known to the State of California to cause cancer.

CARBON BLACK

Is an IARC, NTP or OSHA carcinogen.

Has shown carcinogenic activity in laboratory animals at high doses.

Significance to man is unknown.

The following medical conditions may be aggravated by exposure:

asthma respiratory disease

WARNING: This chemical is known to the State of California to cause cancer.

TRIETHYLAMINE

The following medical conditions may be aggravated by exposure:

asthma liver disease dermatitis respiratory disease eye disorders kidney disorders heart disorders

Contact may cause skin burns.

Causes eye corrosion and permanent injury.

Can be absorbed through the skin in harmful amounts.

Prolonged or repeated exposure may cause damage to any of the following organs/systems: eyes kidneys liver respiratory system skin

Vapors, liquid, and mists are extremely corrosive to the eyes. Brief contact of the vapors will be severely irritating. Brief contact of the liquid or mists will severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed by blindness.

Ingestion may cause any of the following: burns to mouth and stomach death aspiration leading to lung damage.

NOTE:

If a chemical listed above is not identified as a carcinogen it is not an "IARC, NTP, or OSHA carcinogen".

***** SECTION 4 - First Aid Measures *****

First Aid Procedures:

Inhalation:

If affected by inhalation of vapor or spray mist, move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing difficulty persists, or occurs later, consult a physician.



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***** SECTION 4 - First Aid Measures ***** Cont'd

Ingestion:

In the unlikely event of ingestion, DO NOT INDUCE VOMITING. Call a physician immediately and have names of ingredients available.

Skin or eye:

In case of eye contact, immediately flush with plenty of water for at least 15 minutes; call a physician. In case of skin contact, wash thoroughly with soap and water. If irritation occurs, contact a physician.

***** SECTION 5 - Firefighting Measures *****

Flash Point (Method)	Above 200 deg F	Closed Cup
Approx. flammable limits	No Information Available	
Auto ignition temperature	No Information Available	

Hazardous Combustion Products:

CO, CO₂, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Extinguishing media:

Universal aqueous film-forming foam, carbon dioxide, dry chemical.

Special fire fighting procedures:

Full protective equipment, including self-contained breathing apparatus, is recommended. Water from fog nozzles may be used to prevent pressure build-up.

Fire & explosion hazards:

Combustible liquid. When heated above the flashpoint, emits vapors which, when mixed with air, will burn if an ignition source is present. Fine mist or sprays could ignite at temperatures below the flashpoint.

***** SECTION 6 - Accidental Release Measures *****

Procedures for cleaning up spills or leaks:

Ventilate area. If heated above the flashpoint, remove sources of ignition. Prevent skin and eye contact and breathing of vapor.

Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly.

***** SECTION 7 - Handling and Storage *****

Precautions to be taken in handling and storing:

Observe label precautions. Close container after each use. If heated above its flash point, this must be handled as if it were a flammable liquid. Do not transfer contents to bottles or unlabeled containers. Wash thoroughly after handling and before eating or smoking. Do not freeze.

OSHA/NFPA Storage Classification:

IIIB



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***** SECTION 7 - Handling and Storage ***** Cont'd

Other precautions:

If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved respirator or appropriate ventilation, and gloves.

***** SECTION 8 - Exposure Controls or Personal Protection *****

Engineering controls and work practices:

Ventilation:

Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	23.60 mm @ 20 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	0.60
Approx. Boiling range	100 - 100 DEG (C)
Approx. Freezing range	0 - 342 DEG (C)
Gallon weight (lbs/gal)	9.83
Specific gravity	1.18
Percent volatile by volume	86.09
Percent volatile by weight	72.74
Percent solids by volume	13.91
Percent solids by weight	27.26
Physical state	Liquid



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***** SECTION 9 - Physical and Chemical Properties *****
Cont'd

pH (waterborne systems only)
VOC* less exempt (lbs/gal)
VOC* as packaged (lbs/gal)

No Data Available
3.5
0.9

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

None reasonably foreseeable

Hazardous decomposition products:

CO, CO₂, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous polymerization:

Will not occur.

Sensitivity to static discharge:

If heated above the flash point, solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to mechanical impact:

None Known

***** SECTION 11 - Toxicological Information *****

No Information Available

***** SECTION 12 - Ecological Information *****

No Information Available

***** SECTION 13 - Disposal Considerations *****

Waste disposal method:

Do not allow material to contaminate ground water systems. Incinerate or otherwise dispose of waste material in accordance with Federal, State, Provincial, and local requirements. Do not incinerate in closed containers.

***** SECTION 14 - Transportation Information *****

No Information Available

***** SECTION 15 - Regulatory Information *****



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***** SECTION 15 - Regulatory Information ***** Cont'd

TSCA Status:

In compliance with TSCA Inventory requirements for commercial purposes.

DSL Status:

All components of the mixture are listed on the DSL.

Photochemical Reactivity: Non-photochemically reactive

Other Regulatory Information:

CAS #	Ingredient	EPCRA			CERCLA		
		302	TPQ/RQ	311/312	313	RQ(lbs)	HAP
872-50-4	METHYL PYRROLIDONE	N	NR	A, F	Y	NR	N
25928-85-2	POLYAMIDE-IMIDE POLYMER	N	NR	A, C	N	NR	N
409-21-2	SILICON CARBIDE	N	NR	N	N	NR	N
98-00-0	FURFURYL ALCOHOL	N	NR	NA	N	NA	N
25067-11-2	FLUORINATED ETHYLENE PRO- PYLENE RESIN	N	NR	NA	N	NR	N
9002-84-0	POLYTETRAFLUOROETHYLENE	N	NR	N	N	NR	N
60828-78-6	POLYETHYLENE GLYCOL TRIM- ETHYLNONYLETHER	N	NR	NA	N	NA	N
7732-18-5	WATER	N	NR	N	N	NR	N
1344-28-1	ALUMINUM OXIDE	N	NR	N	Y	NR	N
57455-37-5	SODIUM ALUMINUM SULPHO-S- ILICATE (ULTRAMARIN	N	NR	NA	N	NR	N
1333-86-4	CARBON BLACK	N	NR	C	N	NR	N
121-44-8	TRIETHYLAMINE	N	NR	A, F	Y	5000	Y

Key:

EPCRA: Emergency Planning and Community Right-to-Know Act
(aka Title III, SARA)

302: Extremely hazardous substances

311/312 Categories: F = Fire Hazard

A = Acute Hazard

R = Reactivity Hazard C = Chronic Hazard

P = Pressure Related Hazard

313 Information: Section 313 Supplier Notification - The chemicals listed above with a 'Y' in the 313 column are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know act of 1986 and of 40 CFR 372.

CERCLA: Comprehensive Emergency Response, Compensation and Liability Act of 1980.

HAP = Listed as a Clean Air Act Hazardous Air Pollutant

TPQ = Threshold planning quantity

RQ = Reportable quantity

NA = not available

NR = not regulated