

**1. Identification of the substance/mixture and of the company/undertaking**

Manufacturer: E. I. du Pont de Nemours and Company.  
 DuPont Performance Coatings  
 Wilmington, DE 19898

Telephone: Product information: (800) 441-7515  
 Medical emergency: (800) 441-3637  
 Transportation emergency: (800) 424-9300 (CHEMTREC)

Product: **Marine Clearcoats and Related Products**

DOT Shipping Name: See DOT Addendum.

Hazardous Materials Information: See Section 10.

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**2. Composition/information on ingredients**

INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
1-propenamine, 3-(trimethoxysilyl)-	13822-56-5	1.0	A None, O None
2,4,6- tri((dimethylamino)methyl) phenol	90-72-2	0.0@21.0 °C	A None, O None
2-ethylhexyl acetate	103-09-3	0.5	A None, O None
4-chlorobenzotrifluoride	98-56-6	7.6@25.0 °C	D 20.0 ppm 8 & 12 hour TWA, A None, O None
Acetone	67-64-1	247.0@68.0 °F	A 750.0 ppm 15 min STEL, A 500.0 ppm, O 1000.0 ppm, D 500.0 ppm 8 & 12 hour TWA
Acrylic polymer-A	NotAvail	None	A None, O None
Acrylic polymer-B	69215-54-9	None	A None, O None
Acrylic resin	NotAvail	None	A None, O None
Aliphatic polyisocyanate resin	28182-81-2	None	S 0.5 mg/m3, A None, O None
Amorphous silica	92797-60-9	<0.0	A 2.0 mg/m3 Respirable Dust, O 1.0 mg/m3 15 min STEL, D 1.0 mg/m3
Amorphous silica - precipitated	112926-00-8	None	O 15.0 mg/kg Total Dust, O 5.0 mg/m3 TWA Respirable Dust, D 3.0 mg/m3 Respirable Dust, A None
Butyl acetate	123-86-4	10.0	A 200.0 ppm 15 min STEL, A 150.0 ppm, O 150.0 ppm
Ethyl 3-ethoxy propionate	763-69-9	2.3	A None, O None
Ethyl acetate	141-78-6	93.2@25.0 °C	A 400.0 ppm, O 400.0 ppm
Ethylbenzene	100-41-4	7.0	A 20.0 ppm, O 100.0 ppm, D 25.0 ppm 8 & 12 hour TWA
Isobutyl alcohol	78-83-1	9.7@22.0 °C	A 50.0 ppm, O 100.0 ppm
Isophorone diisocyanate homopolymer	53880-05-0	None	A None, O None
Isopropyl alcohol	67-63-0	48.0	A None, O None
Methyl acetate	79-20-9	171.3@68.0 °F	A 250.0 ppm 15 min STEL, A 200.0 ppm, O 200.0 ppm
Methyl amyl ketone	110-43-0	3.4	A 50.0 ppm, O 100.0 ppm
Methyl ethyl ketone	78-93-3	71.2	A 300.0 ppm 15 min STEL, A 200.0 ppm, O 200.0 ppm, D 300.0 ppm 15 min TWA, D 200.0 ppm 8 & 12 hour TWA
Methyl isobutyl ketone	108-10-1	15.1	A 75.0 ppm 15 min STEL Skin, A 50.0 ppm Skin, O 100.0 ppm Skin
N-pentyl propionate	624-54-4	1.5	A None, O None
Polyamide resin	68410-23-1	None	A None, O None
Polyester resin	68604-67-1	None	A None, O None
Synthetic resin	NotAvail	None	A None, O None
Toluene	108-88-3	22.0	A 20.0 ppm , O 300.0 ppm CEIL, O 500.0 ppm 10 min TWA, O 200.0 ppm, D 50.0 ppm 8 & 12 hour TWA Skin
Vm&p naphtha	8032-32-4	17.9@68.0 °F	A 300.0 ppm, D 100.0 ppm, O None
Xylene	1330-20-7	8.0@25.0 °C	A 150.0 ppm 15 min STEL, A 100.0 ppm, O 100.0 ppm, D 150.0 ppm 15 min STEL, D 100.0 ppm 8 & 12 hour TWA

\*A=ACGIH, O=OSHA, D=DuPont, S=Suppliers. Limits are 8 hour TWA unless otherwise specified. Vapor pressure @ 20° C unless otherwise noted.

**3. Hazards identification**

**Potential Health Effects:**

**Inhalation:**

May cause nose and throat irritation. May cause nervous system depression, characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. If this product contains or is mixed with an isocyanate activator/hardener, the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be

delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

**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:**

**4-chlorobenzotrifluoride**

Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: skin. Prolonged or repeated exposure may cause damage to any of the following organs/systems: kidneys, liver, thyroid. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Ingestion may cause any of the following: gastrointestinal irritation. Eye contact may cause any of the following: permanent eye injury. Inhalation may cause any of the following: stupor (central nervous system depression), respiratory tract irritation.

**Acetone**

The following medical conditions may be aggravated by exposure: lung disease, eye disorders, skin disorders. Overexposure may cause damage to any of the following organs/systems: blood, central nervous system, eyes, kidneys, liver, respiratory system, skin.

**Acrylic polymer-A**

Skin or eye contact may cause any of the following: irritation.

**Aliphatic polyisocyanate resin**

Overexposure may cause asthma-like reactions with shortness of breath, wheezing, cough, which may be permanent; or permanent lung sensitization. This effect may be delayed for several hours after exposure. The following medical conditions may be aggravated by exposure: asthma, skin disorders, respiratory disorders. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin.

**Butyl acetate**

May cause abnormal liver function. The following medical conditions may be aggravated by exposure: respiratory system. Tests for embryotoxic activity in animals has been inconclusive. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.

**Ethyl acetate**

Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: blood, kidneys, liver.

**Ethylbenzene**

Is an IARC, NTP or OSHA carcinogen. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. Studies in laboratory animals have shown reproductive, embryotoxic and developmental effects. WARNING: This chemical is known to the State of California to cause cancer.

**Isobutyl alcohol**

Has shown carcinogenic activity in laboratory animals at high doses. Significance to man is unknown. May cause irritation of the mucous membranes. May cause abnormal liver function. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: bone marrow, liver. Prolonged skin contact may cause chemical burns. Liquid splashes in the eye may result in chemical burns.

**Isophorone diisocyanate homopolymer**

May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath. Overexposure may cause asthma-like reactions with shortness of breath, wheezing, cough, which may be permanent; or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated and prolonged overexposure may cause delayed effects involving the respiratory system. Repeated overexposure to isocyanates may cause lung injury, including a decrease in lung function, which may be permanent. Overexposure may cause damage to any of the following organs/systems: lungs, skin. The following medical conditions may be aggravated by overexposure: asthma, eye disorders, eczema, skin disorders, respiratory disorders.

**Isopropyl alcohol**

The following medical conditions may be aggravated by exposure: dermatitis, respiratory disease. Developmental toxicity was seen in rat's offspring at doses that were maternally toxic. Contact may cause skin irritation with discomfort or rash. Can be absorbed through the skin in harmful amounts. Contact will cause moderate to severe redness and swelling, itching, tingling sensation, painful burning. May cause injury to the cornea of the eyes. Prolonged or repeated exposure may cause damage to any of the following organs/systems: liver. Ingestion studies on laboratory animals showed that very high oral doses caused increased liver and kidney weights. Aspiration may occur during swallowing or vomiting, resulting in lung damage. May cause central nervous system depression with headache, stupor, uncoordinated or strange behavior, or unconsciousness. Irritating to the mouth, throat and stomach. May cause irritation of the respiratory tract, experienced as nasal discomfort and discharge, coughing and possibly accompanied by chest pain. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness. Swallowing significant amounts of substance could cause serious injury, even death.

**Methyl ethyl ketone**

Material is irritating to mucous membranes and upper respiratory tract. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, eyes, respiratory system, skin. Prolonged or repeated overexposure may cause any of the following: conjunctivitis, dermatitis. High concentrations have caused embryotoxic effects in laboratory animals. Aspiration may occur during swallowing or vomiting, resulting in lung damage. Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness.

**Methyl isobutyl ketone**

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

#### **Toluene**

Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, respiratory system, skin. Can be absorbed through the skin in harmful amounts. Recurrent overexposure may result in liver and kidney injury. High airborne levels have produced irregular heart beats in animals and occasional palpitations in humans. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. **WARNING:** This chemical is known to the State of California to cause birth defects or other reproductive harm.

#### **Vm&p naphtha**

Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, lungs, respiratory system, skin. This substance may cause damage to any of the following organs/systems: central nervous system, kidneys, liver, lungs, skin and eyes. Material may be harmful or fatal if swallowed.

#### **Xylene**

Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: bone marrow, cardiovascular system, central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. High exposures may produce irregular heart beats. Canada classifies Xylene as a developmental toxin as high exposures to xylenes in some animal studies have been reported to cause health effects on the developing fetus/embryo. These effects were often at levels toxic to the adult animal. The significance of these effects to humans is not known. Repeated or prolonged skin contact may cause any of the following: irritation, dryness, cracking of the skin.

### **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.

##### **Ingestion:**

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

##### **Skin or eye contact:**

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.

### **5. Fire-fighting measures**

#### **Flash Point (Closed Cup):**

See Section 11 for exact values.

**Flammable Limits:** LFL 0.9 % UFL 16 %

#### **Extinguishing Media:**

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

#### **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 and Explosion Hazards:**

For flammable liquids, vapor/air will ignite when an ignition source is present. In other cases, when heated above the flash point, emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

### **6. Accidental release measures**

#### **Procedures for cleaning up spills or leaks:**

Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor. If material does not contain or is not mixed with an isocyanate activator/hardener: 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. If the material contains, or is mixed with an isocyanate activator/hardener: Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Typical decontamination solutions for isocyanate containing materials are: 20% Surfactant (Tergitol TMN 10) and 80% Water OR 0-10% Ammonia, 2-5% Detergent and Water (balance). Pressure can be generated. Do not seal waste containers for 48 hours to allow CO<sub>2</sub> to vent. After 48 hours, material may be sealed and disposed of properly.

#### **Ecological information:**

There is no data available on the product. The product should not be allowed to enter drains, water courses or the soil.

### **7. Handling and storage**

#### **Precautions to be taken in handling and storing:**

Observe label precautions. If combustible (flashpoint between 38-93 deg C or 100 - 200 deg F), keep away from heat, sparks and flame. If flammable (flashpoint less than 38 deg C or 100 deg F), also keep away from static discharges and other sources of ignition. If material is extremely flammable (flashpoint less than - 8 deg C or 20 deg F) or flammable, VAPORS MAY IGNITE EXPLOSIVELY OR CAUSE FLASH FIRE, respectively. Vapors may spread long distances. Prevent buildup of vapors. Close container after each use. Ground containers when pouring. Wash thoroughly after handling and before eating or smoking. Do not store above 49 deg C or 120 deg F. If product is waterbased, do not freeze.

**Other precautions:**

If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves. Combustible dust clouds may be created where operations produce fine material (dust). Avoid formation of significant deposits of material as they may become airborne and form combustible dust clouds. Handling and processing operations should be conducted in accordance with best practices (e.g.NFPA-654).

**8. Exposure controls/personal protection**

**Ventilation:**

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

**Respiratory protection:**

Do not breathe vapors or mists. If this product contains isocyanates or is used with an isocyanate activator/hardener, wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted. If product does not contain or is not mixed with an isocyanate activator/hardener, a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH TC-23C) and particulate filter (NIOSH TC-84A) may be used. Follow respirator manufacturer's directions for respirator use. Do not permit anyone without protection in the painting area. Individuals with history of lung or breathing problems or prior reaction to isocyanates should not use or be exposed vapor or spray mist if product contains or is mixed with isocyanate activators/hardeners.

**Protective equipment:**

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

**Skin and body protection:**

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

**9. Physical and chemical properties**

Evaporation rate	Slower than Ether
Water solubility	NIL
Vapour density	Heavier than air
Approx. Boiling Range ( °C)	55 – 125 °C
Approx. Freezing Range ( °C)	-99 °C
Gallon Weight (lbs/gal)	7.55259 - 8.92958
Specific Gravity	0.91 - 1.07
Percent Volatile By Volume	56.48 - 83.09
Percent Volatile By Weight	24.39 - 83.85
Percent Solids By Volume	16.91 - 43.52
Percent Solids By Weight	15.59 - 50.92

**10. Stability and reactivity**

**Stability:**

Stable

**Incompatibility (materials to avoid):**

None reasonably foreseeable

**Hazardous decomposition products:**

CO, CO<sub>2</sub>, 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:**

For flammable materials (flashpoint less than 38 deg C or 100 deg F) and combustibles (flashpoint between 38- 93 deg C or 100-200 deg F) if heated above the flashpoint, 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.

**11. Additional Information**

**18120S™** Aliphatic polyisocyanate resin, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(2.6%\*<sup>@</sup>), Isophorone diisocyanate homopolymer, Xylene(10%\*<sup>@</sup>) **GAL WT: 8.36 WT PCT SOLIDS: 46.99 VOL PCT SOLIDS: 40.36 SOLVENT DENSITY: 7.41 VOC LE: 4.4 VOC AP: 4.4 FLASH POINT: 73 °F to below 100 °F H: 3 F: 3 R: 1 OSHA STORAGE: IC TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: YES**

**18122S™** 2-ethylhexyl acetate, Aliphatic polyisocyanate resin, Butyl acetate, Ethyl 3-ethoxy propionate, Isophorone diisocyanate homopolymer, N-pentyl propionate **GAL WT: 8.33 WT PCT SOLIDS: 46.97 VOL PCT SOLIDS: 40.18 SOLVENT DENSITY: 7.37 VOC LE: 4.4 VOC AP: 4.4 FLASH POINT: 20 °F to below 73 °F H: 3 F: 3 R: 1 OSHA STORAGE: IB TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: NO**

**18160S™** 1-propenamine, 3-(trimethoxysilyl)-, 2,4,6- tri((dimethylamino)methyl) phenol, 4-chlorobenzotrifluoride, Acetone, Isobutyl alcohol, Isopropyl alcohol, Polyamide resin **GAL WT: 8.93 WT PCT SOLIDS: 15.59 VOL PCT SOLIDS: 16.91 SOLVENT DENSITY: 9.07 VOC LE: 2.1 VOC AP: 0.5 FLASH POINT: Below 20 °F H: 3 F: 3 R: 2 OSHA STORAGE: IB TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: NO**

**18320S™** Acetone, Acrylic polymer-A, Amorphous silica, Butyl acetate, Ethyl acetate, Methyl amyl ketone, Vm&p naphtha **GAL WT: 7.66 WT PCT SOLIDS: 35.82 VOL PCT SOLIDS: 26.68 SOLVENT DENSITY: 6.69 VOC LE: 4.8 VOC AP: 4.5 FLASH POINT: 20 °F to below 73 °F H: 2 F: 3 R: 0 OSHA STORAGE: IB TSCA STATUS:**

**In Compliance PHOTOCHEMICALLY REACTIVE: NO**

**18321S™** Acetone, Acrylic polymer-B, Ethylbenzene(3.6%\***@**), Methyl amyl ketone, Methyl ethyl ketone, Methyl isobutyl ketone(7.5%\***@**), Synthetic resin, Toluene(2%\***@**), Xylene(14%\***@**) **GAL WT: 7.55 WT PCT SOLIDS: 35.01 VOL PCT SOLIDS: 28.07 SOLVENT DENSITY: 6.82 VOC LE: 4.2 VOC AP: 2.9 FLASH POINT: Below 20 °F H: 2 F: 3 R: 0 OSHA STORAGE: IB TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: YES**

**18868S™** Acetone, Amorphous silica - precipitated, Butyl acetate, Ethylbenzene(0.4%\***@**), Methyl acetate, Methyl ethyl ketone, Polyester resin, Toluene(1%\***@**), Xylene(1%\***@**) **GAL WT: 8.93 WT PCT SOLIDS: 50.92 VOL PCT SOLIDS: 41.99 SOLVENT DENSITY: 7.54 VOC LE: 2.1 VOC AP: 1.2 FLASH POINT: Below 20 °F H: 2 F: 3 R: 0 OSHA STORAGE: IB TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: NO**

**MS1™** 2-ethylhexyl acetate, Acetone, Acrylic polymer-A, Acrylic resin, Butyl acetate, Ethyl 3-ethoxy propionate, Isopropyl alcohol, Methyl amyl ketone **GAL WT: 8.05 WT PCT SOLIDS: 50.23 VOL PCT SOLIDS: 43.52 SOLVENT DENSITY: 7.08 VOC LE: 3.8 VOC AP: 3.6 FLASH POINT: 20 °F to below 73 °F H: 2 F: 3 R: 1 OSHA STORAGE: IB TSCA STATUS: In Compliance PHOTOCHEMICALLY REACTIVE: NO**

**Footnotes:**

**TSCA: in compliance** In compliance with TSCA Inventory requirements for commercial purposes.

**ACGIH** American Conference of Governmental Industrial Hygienists.

**IARC** International Agency for Research on Cancer.

**NTP** National Toxicology Program.

**OSHA** Occupational Safety and Health Administration.

**PNOR** Particles not otherwise regulated.

**PNOC** Particles not otherwise classified.

**STEL** Short term exposure limit.

**TWA** Time-weighted average.

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

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\* = Section 313 Supplier Notification: These chemicals are subject to the reporting requirements of Section 313 of the Emergency planning and Right-to-Know act of 1986 and of 40 CFR 372.

@ = Listed as a Clean Air Act Hazardous Air Pollutant.

# = EPCRA Section 302 - Extremely hazardous substances.

**Notice:**

The information on 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.

Product Manager: Refinish Sales

Prepared by: Y. B. Yarbrough