



# SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US,  
INC.

**Product name:** BIOBAN™ O 5P5 Antimicrobial

**Issue Date:** 11/30/2018

**Print Date:** 04/24/2020

DDP SPECIALTY ELECTRONIC MATERIALS US, INC. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. IDENTIFICATION

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**Product name:** BIOBAN™ O 5P5 Antimicrobial

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Biocidal product

### COMPANY IDENTIFICATION

DDP SPECIALTY ELECTRONIC MATERIALS US,  
INC.

400 ARCOLA ROAD  
COLLEGEVILLE PA 19426-2914  
UNITED STATES

**Customer Information Number:**

833-338-7668

SDSQuestion-NA@dupont.com

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 1-800-424-9300

**Local Emergency Contact:** 800-424-9300

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity - Category 4 - Inhalation

Skin corrosion - Category 1

Serious eye damage - Category 1

Skin sensitisation - Category 1

### Label elements

**Hazard pictograms**



Signal word: **DANGER!**

**Hazards**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Causes serious eye damage.

Harmful if inhaled.

**Precautionary statements****Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

If skin irritation or rash occurs: Get medical advice/ attention.

Wash contaminated clothing before reuse.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

No data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Aqueous solution of organic compounds

This product is a mixture.

Component	CASRN	Concentration
2-n-Octyl-4-isothiazolin-3-one	26530-20-1	>= 5.0 - 6.0 %
Propanediol	57-55-6	>= 94.0 - 95.0 %

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## 4. FIRST AID MEASURES

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### Description of first aid measures

**Inhalation:** Move to fresh air. Give artificial respiration if breathing has stopped. If symptoms persist, call a physician.

**Skin contact:** IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash off with soap and water. Immediate medical attention is required. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Discard contaminated shoes, belts, and other articles made of leather.

**Eye contact:** Rinse immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Ingestion:** Drink 1 or 2 glasses of water. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** MATERIAL IS CORROSIVE. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock and convulsions maybe necessary.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable extinguishing media:** No data available

### Special hazards arising from the substance or mixture

**Hazardous combustion products:** No data available

**Unusual Fire and Explosion Hazards:** Combustion generates toxic fumes of the following: Nitrogen oxides (NO<sub>x</sub>) sulfur oxides

### Advice for firefighters

**Fire Fighting Procedures:** Cool containers/tanks with water spray. Minimize exposure. Do not breathe fumes. Contain run-off.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus and protective suit.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Wear a NIOSH approved (or equivalent) respirator (with organic vapor/acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material. MATERIAL IS CORROSIVE. Protective clothing,

including chemical splash goggles, nitrile or butyl rubber full length gloves, rubber apron, or clothing made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of this material. If material comes in contact with the skin during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

**Environmental precautions:** Do not allow material to contaminate ground water system. Prevent product from entering drains.

**Methods and materials for containment and cleaning up:** WARNING: KEEP SPILLS AND CLEAN-UP RESIDUALS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush the spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material. See Section 13, "Disposal Considerations", for information regarding the disposal of contained materials.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** This material is corrosive. For personal protection see section 8. Do not handle material near food, feed or drinking water.

**Conditions for safe storage:** Keep in a well-ventilated place. Store in a cool and shaded area. Do not store this material in containers made of the following: steel Do not store this material near food, feed or drinking water. Keep container tightly closed.

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Expiration date based only on retention of >95% actives during storage at 20°C-25°C (68°F-77°F).

### Storage stability

**Storage temperature:** 1 - 37 °C (34 - 99 °F)

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
2-n-Octyl-4-isothiazolin-3-one	Dow IHG	TWA	0.2 mg/m3
	Dow IHG	STEL	0.6 mg/m3
Propanediol	US WEEL	TWA	10 mg/m3

### Exposure controls

**Engineering controls:** Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental

Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

**Protective measures:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

#### Individual protection measures

**Eye/face protection:** Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

#### Skin protection

**Hand protection:** Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): butyl-rubber Nitrile rubber Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. NOTE: Material is a possible skin sensitizer.

**Other protection:** Wear as appropriate: Chemical resistant apron complete suit protecting against chemicals

**Respiratory protection:** Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. For concentrations up to 10 times the exposure limit, wear a properly fitted NIOSH approved (or equivalent) half-mask or full facepiece air purifying respirator equipped with organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters. For those unlikely situations where exposure may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode or a full facepiece airline respirator in the pressure demand mode with emergency escape provision. See SECTION 6, Accidental Release Measures, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

Physical state	clear liquid
Color	Pale yellow
Odor	sweet
Odor Threshold	No data available
pH	2.4 10% Solution
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	188 °C ( 370 °F)
Flash point	107 °C ( 225 °F)
Evaporation Rate (Butyl Acetate = 1)	<1
Flammability (solid, gas)	Not Applicable

Lower explosion limit	2.60 % vol
Upper explosion limit	12.50 % vol
Vapor Pressure	0.1 mmHg at 25 °C (77 °F)
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.03 at 20 °C (68 °F)
Water solubility	completely soluble
Partition coefficient: n-octanol/water	log Pow: 2.45 <i>Method Not Specified.</i>
Auto-ignition temperature	371 °C (700 °F)
Decomposition temperature	No data available
Dynamic Viscosity	40 mPa.s at 20 °C (68 °F)
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	94 - 95 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No data available

**Chemical stability:** No data available

**Possibility of hazardous reactions:** Stable under recommended storage conditions.  
Product will not undergo polymerization.

**Conditions to avoid:** No data available

**Incompatible materials:** Avoid contact with the following: Oxidizing agents Amines Reducing agents Mercaptans.

**Hazardous decomposition products:** Nitrogen oxides (NOx) Sulphur oxides hydrogen chloride

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

LD50, Rat, female, > 5,000 mg/kg

#### Acute dermal toxicity

LD50, Rabbit, > 2,000 mg/kg

#### Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, >1.95 mg/l

**Skin corrosion/irritation**

Corrosive

**Serious eye damage/eye irritation**

Corrosive

**Sensitization**

May cause sensitisation by skin contact.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Product test data not available. Refer to component data.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Product test data not available. Refer to component data.

**Carcinogenicity**

Did not show carcinogenic effects in animal experiments.

Active ingredient

**Teratogenicity**

Did not show teratogenic effects in animal experiments.

Active ingredient

**Reproductive toxicity**

Product test data not available. Refer to component data.

**Mutagenicity**

Non-mutagenic

Active ingredient

**Aspiration Hazard**

Product test data not available. Refer to component data.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**2-n-Octyl-4-isothiazolin-3-one**

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Reproductive toxicity**

No relevant data found.

**Aspiration Hazard**

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

**Propanediol****Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

**Reproductive toxicity**

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**Toxicity****Acute toxicity to fish**

Active ingredient

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 0.047 mg/l, OECD Test Guideline 203

Active ingredient

LC50, Lepomis macrochirus (Bluegill sunfish), 96 Hour, 0.18 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**

Active ingredient

EC50, Daphnia magna, 48 Hour, 0.32 mg/l, FIFRA 77-2

**Acute toxicity to algae/aquatic plants**

Active ingredient

EC50, Algae (Selenastrum capricornutum), 72 Hour, Growth rate, 0.031 mg/l, OECD Test Guideline 201

**Persistence and degradability****Physico-chemical removability**

Activated Sludge Respiration Inhibition EC50: 47 mg/l ai

**Bioaccumulative potential**

Partition coefficient: n-octanol/water(log Pow): 2.45 at 24 °C Method Not Specified.

**Mobility in soil****2-n-Octyl-4-isothiazolin-3-one**



Potential for mobility in soil is slight (Koc between 2000 and 5000).  
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Partition coefficient (Koc):** 2120

#### **Propanediol**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** < 1 Estimated.

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### **13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations. (See 40 CFR 268)

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### **14. TRANSPORT INFORMATION**

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#### **DOT**

<b>Proper shipping name</b>	Corrosive liquid, acidic, organic, n.o.s.(2-n-Octyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 3265
<b>Class</b>	8
<b>Packing group</b>	III

#### **Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(2-n-Octyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 3265
<b>Class</b>	8
<b>Packing group</b>	III
<b>Marine pollutant</b>	2-n-Octyl-4-isothiazolin-3-one
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

#### **Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Corrosive liquid, acidic, organic, n.o.s.(2-n-Octyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 3265
<b>Class</b>	8
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional

transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## **15. REGULATORY INFORMATION**

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### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Acute toxicity (any route of exposure)

Serious eye damage or eye irritation

Respiratory or skin sensitisation

Skin corrosion or irritation

### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

### **Pennsylvania**

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

### **California Prop. 65**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### **United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

### **Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 707-121

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

### **DANGER**

Corrosive

Causes eye damage and skin irritation

May cause allergic skin reaction

May be harmful if inhaled

Harmful if swallowed

This product is toxic to fish and aquatic invertebrates.

## 16. OTHER INFORMATION

### Hazard Rating System

#### HMIS

Health	Flammability	Physical Hazard
3	1	0

### Revision

Identification Number: 10373973 / A749 / Issue Date: 11/30/2018 / Version: 4.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

### Legend

Dow IHG	Dow Industrial Hygiene Guideline
STEL	Short term exposure limit
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DDP SPECIALTY ELECTRONIC MATERIALS US, INC. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US