

# SAFETY DATA SHEET

# DDP SPECIALTY ELECTRONIC MATERIALS US,

INC.

### Product name: BIOBAN™ 200 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.

# **1. IDENTIFICATION**

Product name: BIOBAN™ 200 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

# 2. HAZARDS IDENTIFICATION

#### Hazard classification

GHS classification in accordance with 29 CFR 1910.1200 Acute toxicity - Category 4 - Inhalation Skin corrosion - Category 1C 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. 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

# **3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical nature: Organic Mixture Aqueous

This product is a mixture.

Component	CASRN	Concentration
4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one	64359-81-5	>= 18.0 - <= 20.0 %
Sodium copper ethylenediaminetetraacetate	14025-15-1	>= 4.0 - <= 6.0 %
Clay	Not Hazardous	>= 4.0 - <= 6.0 %
Ethoxylated alcohol	Trade Secret	>= 1.0 - <= 2.0 %

Water

7732-18-5 >= 66.0 - <= 68.0 %

# 4. FIRST AID MEASURES

# Description of first aid measures

# General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

**Skin contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. 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:** May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

# 5. FIREFIGHTING MEASURES

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: hydrogen chloride Nitrogen oxides (NOx) 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.

# 6. ACCIDENTAL RELEASE MEASURES

**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 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 recovery or disposal. Wipe contaminated area with TEXANOL<sup>®</sup> (2,2,4-trimethyl-1,3-pentanediol monoisobutyrate) or butyl CARBITOL<sup>®</sup> (diethylene glycol monobutyl ether) using a clean rag(s) or disposable pad(s) or mop(s). Isopropanol can also be used, but special care should be taken due to the flammability of this solvent. Discard contaminated wiping materials into suitable containers for recovery or disposal. Decontaminate spill area with a freshly prepared aqueous solution of 10% sodium thiosulfate. Let stand for 30 minutes. Rinse decontamination solution to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add decontamination solution to the waste pail to deactivate the adsorbed product. See SECTION 13, Disposal Considerations, for information regarding the disposal of contained spills. TEXANOL<sup>®</sup> is a trademark of Eastman Chemical Co. CARBITOL<sup>®</sup> is a trademark of Union Carbide Co.

# 7. HANDLING AND STORAGE

**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 from freezing. Keep in a well-ventilated place. Do not store this material in containers made of the following: steel Do not store this material near food, feed or drinking water.

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:** 10 - 43 °C (50 - 109 °F)

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **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
4,5-Dichloro-2-n-octyl-4- isothiazolin-3-one	Dow IHG	TWA	0.06 mg/m3
	Dow IHG	STEL	0.1 mg/m3
Sodium copper ethylenediaminetetraacetate	NIOSH REL	TWA	1 mg/m3 , Copper
Clay	ACGIH	TWA Respirable fraction	2 mg/m3
	OSHA Z-1	TWA total dust	15 mg/m3
	OSHA Z-1	TWA respirable fraction	5 mg/m3

#### Exposure controls

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

# Eye/face protection: Use chemical goggles.

### Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Flowable dispersion
Color	blue
Odor	No data available
Odor Threshold	No data available
рН	7
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	>100 °C (212 °F)
Evaporation Rate (Butyl Acetate	No data available
= 1)	
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	No data available
Partition coefficient: n- octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available

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

# **10. STABILITY AND REACTIVITY**

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

# 11. TOXICOLOGICAL INFORMATION

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

### Acute toxicity

### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Estimated. Based on information for component(s): LD50, Rat, > 5,000 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Estimated. Based on information for component(s): LD50, Rabbit, > 2,000 mg/kg

#### Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs.

As product: The LC50 has not been determined.

Estimated. Based on information for component(s): LC50, Rat, 4 Hour, dust/mist, > 1 mg/l

#### Skin corrosion/irritation

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

### Serious eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

#### Sensitization

Based on information for component(s): Has caused allergic skin reactions when tested in guinea pigs. Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization: No relevant information found.

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

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

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

Based on information for component(s): In animals, effects have been reported on the following organs: Stomach.

#### Carcinogenicity

No relevant data found.

#### Teratogenicity

Active ingredient Did not cause birth defects or any other fetal effects in laboratory animals.

#### Reproductive toxicity

Active ingredient In animal studies, did not interfere with reproduction.

#### **Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

#### Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

# 12. ECOLOGICAL INFORMATION

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

#### Toxicity

#### 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one

#### Acute toxicity to fish

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, 0.0027 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Bluegill sunfish (Lepomis macrochirus), flow-through, 96 Hour, 0.014 mg/l, OECD Test Guideline 203 or Equivalent

#### Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 0.0057 mg/l

#### Acute toxicity to algae/aquatic plants

EbC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, 0.048 mg/l, OECD Test Guideline 201 ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, 0.077 mg/l, OECD

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, 0.077 mg/l, OECD Test Guideline 201

### Toxicity to bacteria

EC50, activated sludge, Respiration rates., 5.70 mg/l

### Chronic toxicity to fish

NOEC, Oncorhynchus mykiss (rainbow trout), flow-through, 97 d, growth, 0.00056 mg/l

### Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, 0.00063 mg/l

#### Sodium copper ethylenediaminetetraacetate

Acute toxicity to fish No relevant data found.

### <u>Clay</u>

### Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms.

#### Persistence and degradability

### 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one

**Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Considered to be rapidly degradable. Biodegradation (Aquatic metabolism) CAS # 64359-81-5 t 1/2 anaerobic = < 1hr. CAS # 64359-81-5 t 1/2 aerobic = < 1hr.

### Sodium copper ethylenediaminetetraacetate

Biodegradability: No relevant data found.

# <u>Clay</u>

Biodegradability: Biodegradation is not applicable.

#### **Bioaccumulative potential**

#### 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3). **Partition coefficient:** n-octanol/water(log Pow): 2.8 Measured **Bioconcentration factor (BCF):** < 13 Fish

#### Sodium copper ethylenediaminetetraacetate

**Bioaccumulation:** No data available for this product. No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

<u>Clay</u>

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

#### Mobility in soil

#### 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one

Expected to be relatively immobile in soil (Koc > 5000). **Partition coefficient (Koc):** 5662 - 7865 Measured

#### Sodium copper ethylenediaminetetraacetate

No data available.

<u>Clay</u>

No relevant data found.

# **13. DISPOSAL CONSIDERATIONS**

**Disposal methods:** Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

**Contaminated packaging:** Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

# **14. TRANSPORT INFORMATION**

DOT

Proper shipping name	Corrosive liquids, n.o.s.(4,5-Dichloro-2-n-octyl-4-isothiazolin- 3-one)
UN number	UN 1760
Class	8
Packing group	III

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

UN number Class

Proper shipping name	CORROŚIVE LIQUID, N.O.S.(4,5-Dichloro-2-n-octyl-4- isothiazolin-3-one)
UN number	UN 1760
Class	8
Packing group	III
Marine pollutant	4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk
Classification for AIR transport (IA	ATA/ICAO):
Proper shipping name	Corrosive liquid, n.o.s.(4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one)

une)
UN 1760
8

Packing group 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.

# **15. REGULATORY INFORMATION**

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) Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitisation

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

**Components** Sodium copper ethylenediaminetetraacetate CASRN 14025-15-1

#### 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

WARNING: This product can expose you to chemicals including Barden Clay, which is/are known to the State of California to cause cancer, and Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

#### 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: 707-306

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 irreversible eye damage and skin burns May cause allergic skin reaction Harmful if swallowed May be fatal if inhaled May be fatal if absorbed through skin This product is a dermal sensitizer. This product is toxic to fish and aquatic invertebrates.

# 16. OTHER INFORMATION

# Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
3*	1	0

\* = Chronic Effects (See Hazards Identification)

### Revision

Identification Number: 10390324 / A749 / Issue Date: 11/30/2018 / Version: 5.0 Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

### Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
NIOSH REL	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
	Contaminants
STEL	Short term exposure limit
TWA	8-hour time weighted average
TWA	8-hour time weighted average

# 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)SDS 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