



# SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US,  
INC.

**Product name:** BIOBAN™ BZ Antimicrobial

**Issue Date:** 10/12/2018

**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™ BZ Antimicrobial

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

**Identified uses:** For biocidal applications. For industrial use only.

### 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 - Oral

Acute toxicity - Category 4 - Inhalation

Serious eye damage - Category 1

Skin sensitisation - Category 1

### Label elements

#### Hazard pictograms



Signal word: **DANGER!**

**Hazards**

Harmful if swallowed or if inhaled.  
May cause an allergic skin reaction.  
Causes serious eye damage.

**Precautionary statements****Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/ eye protection/ face protection.

**Response**

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
IF ON SKIN: Wash with plenty of soap and water.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
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.

**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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This product is a mixture.

Component	CASRN	Concentration
Water	7732-18-5	70.0 - 75.0 %
1,2-Benzisothiazolin-3-one	2634-33-5	11.0 - 13.0 %
ZINC PYRITHIONE	13463-41-7	7.0 - 9.0 %

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## 4. FIRST AID MEASURES

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### 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.

**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 available in work area.

**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:** Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. 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.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

#### Special hazards arising from the substance or mixture

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Sulfur oxides. Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Evacuate area. Keep upwind of spill. Ventilate area of leak or spill. Only trained and properly protected personnel must be involved in clean-up operations. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Collect in suitable and properly labeled containers. Absorb with materials such as: Sand. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Do not get in eyes. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in accordance with good manufacturing practices.

**Storage stability**

**Shelf life:** Use within 24 Month

Other data: Do not freeze. Mix thoroughly before use.

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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
1,2-Benzisothiazolin-3-one	Dow IHG	TWA	0.06 mg/m3
	Dow IHG	STEL	0.1 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: Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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: Particulate filter.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**Appearance**

Physical state	liquid
Color	cream to light grey
Odor	Sweet Nut-like
Odor Threshold	No test data available
pH	4
Melting point/range	<i>No test data available</i>
Freezing point	<i>No test data available</i>
Boiling point (760 mmHg)	> 92 °C ( > 198 °F) <i>No data available.</i>
Flash point	No test data available
Evaporation Rate (Butyl Acetate = 1)	<i>No test data available</i>
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available

Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.040 at 20 °C (68 °F) Not determined
Water solubility	No data available
Partition coefficient: n-octanol/water	This product is a mixture. See Section 12 for individual component data.
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Liquid Density	1.0 - 1.5 g/cm <sup>3</sup> <i>Estimated.</i>
Softening point	No data available
Molecular weight	No data available
Pour point	No data available

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:** Thermally stable at recommended temperatures and pressures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Avoid temperatures above 100°C (212°F). Active ingredient decomposes at elevated temperatures.

**Incompatible materials:** Avoid contact with: Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials.

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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

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

As product:

LD50, Rat, 1,030 mg/kg OECD 401 or equivalent

#### Acute dermal toxicity

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

As product:

LD50, Rabbit, male and female, > 5,000 mg/kg OECD 402 or equivalent

**Acute inhalation toxicity**

Prolonged excessive exposure may cause adverse effects. Vapors are primarily water; single exposure is not likely to be hazardous.

As product:

LC50, Rat, male and female, 4 Hour, dust/mist, > 2.26 mg/l OECD Test Guideline 403

**Skin corrosion/irritation**

Brief contact may cause slight skin irritation with local redness.

**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):

Skin contact may cause an allergic skin reaction.

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)**

Based on information for component(s):

In animals, effects have been reported on the following organs:

Muscles.

Peripheral nervous system.

Respiratory tract.

Lung.

**Carcinogenicity**

Based on information for component(s): Did not cause cancer in laboratory animals.

**Teratogenicity**

Based on information for component(s): Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

Based on information for component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

**Mutagenicity**

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

**Aspiration Hazard**

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

**COMPONENTS INFLUENCING TOXICOLOGY:****1,2-Benzisothiazolin-3-one****Specific Target Organ Systemic Toxicity (Single Exposure)**

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

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**12. ECOLOGICAL INFORMATION**

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

**Toxicity****1,2-Benzisothiazolin-3-one****Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 1.9 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 3.7 mg/l, OECD Test Guideline 202 or Equivalent

LC50, Mysid shrimp (Mysidopsis bahia), 96 Hour, 1.9 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate, 0.8 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate, 0.21 mg/l, OECD Test Guideline 201 or Equivalent

ErC50, diatom Skeletonema costatum, static test, 72 Hour, Growth rate, 0.36 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, diatom Skeletonema costatum, static test, 72 Hour, Growth rate, 0.15 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

EC50, Bacteria (active sludge), Respiration inhibition of activated sludge, 3 Hour, 28.52 mg/l

**ZINC PYRITHIONE****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, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 0.0026 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 0.0082 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Navicula pelliculosa (Freshwater diatom), static test, 120 Hour, Growth rate inhibition, 0.0041 mg/l

NOEC, Navicula pelliculosa (Freshwater diatom), static test, 120 Hour, Growth rate inhibition, 0.0024 mg/l, EPA OTS 797.1050 (Algal Toxicity, Tiers I and II)



**Chronic toxicity to fish**

NOEC, Pimephales promelas (fathead minnow), flow-through test, 28 d, 0.00122 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), flow-through test, 21 d, number of offspring, 0.0027 mg/l

**Persistence and degradability****1,2-Benzisothiazolin-3-one**

**Biodegradability:** Abiotic degradation: The material is rapidly degradable by abiotic means.

10-day Window: Fail

**Biodegradation:** 24 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 2.22 mg/mg

**Photodegradation**

**Sensitization:** OH radicals

**Atmospheric half-life:** 7.6 hrs

**Method:** Estimated.

**ZINC PYRITHIONE**

**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.

**Biodegradation:** 39 %

**Exposure time:** 28 d

**Bioaccumulative potential****1,2-Benzisothiazolin-3-one**

**Bioaccumulation:** Bioconcentration potential is low ( $BCF < 100$  or  $\log Pow < 3$ ).

**Partition coefficient: n-octanol/water(log Pow):** 1.19 OECD Test Guideline 117 or Equivalent

**Bioconcentration factor (BCF):** 3.2 Fish Calculated.

**ZINC PYRITHIONE**

**Bioaccumulation:** Bioconcentration potential is low ( $BCF < 100$  or  $\log Pow < 3$ ).

**Partition coefficient: n-octanol/water(log Pow):** 0.9 at 25 °C OECD Test Guideline 107

**Bioconcentration factor (BCF):** 200 Carp (Cyprinus carpio)

**Mobility in soil****1,2-Benzisothiazolin-3-one**

Potential for mobility in soil is high ( $Koc$  between 50 and 150).

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):** 104 Estimated.

**ZINC PYRITHIONE**

No data available.

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

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### 14. TRANSPORT INFORMATION

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**DOT**

Not regulated for transport

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

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Zinc pyrithione)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Zinc pyrithione
<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>	Environmentally hazardous substance, liquid, n.o.s.(Zinc pyrithione)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<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**

Respiratory or skin sensitisation

Acute toxicity (any route of exposure)

Serious eye damage or eye irritation

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

The following components are subject to reporting levels established by SARA Title III, Section 313:

#### **Components**

ZINC PYRITHIONE

#### **CASRN**

13463-41-7

### **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103**

This material does not contain any components with a CERCLA RQ.

### **Pennsylvania Worker and Community Right-To-Know Act:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### **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: 464-8139

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

Harmful if swallowed or absorbed through skin

Harmful if inhaled

This pesticide is toxic to fish.

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## 16. OTHER INFORMATION

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Revision

Identification Number: 12022923 / A749 / Issue Date: 10/12/2018 / Version: 1.2

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	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)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