



# SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US,  
INC.

**Product name:** DOWICIDE™ 1E Antimicrobial

**Issue Date:** 10/15/2018

**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:** DOWICIDE™ 1E Antimicrobial

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

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

### 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

Combustible dust

Skin irritation - Category 2

Eye irritation - Category 2A

Specific target organ toxicity - single exposure - Category 3

**Label elements**

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

May form combustible dust concentrations in air.

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

**Precautionary statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting equipment.

Take precautionary measures against static discharge.

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

Wash skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear eye protection/ face protection.

Wear protective gloves.

**Response**

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.

If skin irritation occurs: Get medical advice/ attention.

If eye irritation persists: Get medical advice/ attention.

Take off contaminated clothing and wash before reuse.

**Storage**

Store in a well-ventilated place. Keep container tightly closed.

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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**Synonyms:** 2-Phenylphenol (ISO)

This product is a substance.

Component	CASRN	Concentration
2-Phenylphenol	90-43-7	99.5%

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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. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. 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:** If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Probable mucosal damage may contraindicate the use of gastric lavage. 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. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

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

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

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolic compounds. Carbon monoxide. Carbon dioxide. Aromatic hydrocarbons.

**Unusual Fire and Explosion Hazards:** Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Cool surroundings with water to localize fire zone. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Spilled material may cause a slipping hazard. Keep upwind of spill. Ventilate area of leak or spill. 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. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Workers should be protected from the possibility of contact with molten resin. Do

not get molten material in eyes, on skin or clothing. Product shipped/handled hot can cause thermal burns. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a cool, dry place. See Section 10 for more specific information.

**Storage stability**

**Shelf life:** Use within 24 Month

**Storage temperature:** < 25 °C (< 77 °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-Phenylphenol	Dow IHG	TWA	1 mg/m3

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use chemical goggles. Wear a face-shield which allows use of chemical goggles, or wear a full-face respirator, to protect face and eyes when there is any likelihood of splashes.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Use gloves with insulation for thermal protection, when needed. Examples of preferred glove barrier materials include: Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). 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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	
Physical state	Flakes
Color	Off-white
Odor	Mild Phenolic
Odor Threshold	No test data available
pH	Not applicable
Melting point/range	56.9 °C ( 134.4 °F) <i>Literature</i>
Freezing point	Not applicable
Boiling point (760 mmHg)	286 °C ( 547 °F) <i>Literature</i>
Flash point	<b>closed cup</b> 124 °C ( 255 °F) <i>Setaflash Closed Cup ASTM D3828</i>
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air.
Lower explosion limit	0.5 % vol Vapour <i>Literature</i>
Upper explosion limit	9.5 % vol Vapour <i>Literature</i>
Vapor Pressure	0.00162 mmHg at 25 °C (77 °F) <i>Literature</i>
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	Not applicable
Water solubility	Not applicable
Partition coefficient: n-octanol/water	log Pow: 3.09 <i>Measured</i>
Auto-ignition temperature	530 °C (986 °F) <i>Literature</i>
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	No test data available
Oxidizing properties	No test data available
Molecular weight	No test 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 typical use temperatures.

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

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose.

**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

For the molten form: Swallowing may result in burns of the mouth and throat. The data presented are for the following material: For solid: Low toxicity if swallowed. Swallowing may result in irritation or burns of the mouth, throat, and gastrointestinal tract.

For solid:

LD50, Rat, 2,700 mg/kg

For the molten form: Single dose oral LD50 has not been determined.

#### Acute dermal toxicity

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

For solid:

LD50, Rabbit, > 5,000 mg/kg

#### Acute inhalation toxicity

Vapor from heated material may cause respiratory irritation. For solid: Excessive exposure may cause severe irritation to the upper respiratory tract (nose and throat). For narcotic effects: No specific, relevant data available for assessment.

LC0, Rat, 4 Hour, dust/mist, 0.036 mg/l

Maximum attainable concentration.

No deaths occurred at this concentration.

### Skin corrosion/irritation

Brief contact may cause severe skin irritation with pain and local redness.

Molten material may burn skin.

Powder moistened with water.

2-Phenylphenol has been reported to produce depigmentation (white patches) on skin of experimental animals when given orally but not by skin contact, and in humans only at concentrations that were significantly irritating to the skin. 2-Phenylphenol has not been found to cause depigmentation when present at low concentrations used in disinfectant formulations. 2-Phenylphenol (OPP) has important structural differences from the substituted phenols which are known to cause depigmentation at use dilutions in disinfectants.

### Serious eye damage/eye irritation

May cause severe eye irritation.

May cause corneal injury.

Material may be handled at elevated temperatures; contact with heated material may cause thermal burns.

Molten material may burn eyes.

### Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:  
No relevant data found.

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

May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory system

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

In animals, effects have been reported on the following organs:  
Bladder.  
Kidney.  
Liver.

**Carcinogenicity**

Ortho-phenylphenol has been shown to produce urinary bladder tumors in male rats and liver tumors in male mice fed exaggerated doses.

**Teratogenicity**

Did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

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

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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**

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), static test, 96 Hour, 4.0 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 2.0 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**



EbC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Biomass, 1.32 mg/l, OECD Test Guideline 201 or Equivalent

EbC50, alga Scenedesmus sp., static test, 72 Hour, Biomass, 0.85 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

EC50, activated sludge, 48.6 mg/l

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Anas platyrhynchos (Mallard duck), > 2,250 mg/kg

**Persistence and degradability**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

**Biodegradation:** 88 %

**Exposure time:** 28 d

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

10-day Window: Not applicable

**Biodegradation:** 91.2 %

**Exposure time:** 28 d

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

10-day Window: Pass

**Biodegradation:** 100 %

**Exposure time:** 6 d

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

10-day Window: Not applicable

**Biodegradation:** 47 - 86 %

**Exposure time:** 14 d

**Method:** OECD Test Guideline 302C or Equivalent

**Theoretical Oxygen Demand:** 2.63 mg/mg

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	62 %
10 d	72 %
20 d	75 %

**Bioaccumulative potential**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 3.09 Measured

**Bioconcentration factor (BCF):** 51 Fish Estimated.

**Mobility in soil**

Potential for mobility in soil is medium (Koc between 150 and 500).

**Partition coefficient (Koc):** 398 Measured

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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 option is to contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. The preferred option in other jurisdictions is to contact the regulatory authority for this product for guidance.

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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, SOLID, N.O.S.(2-Hydroxybiphenyl)
<b>UN number</b>	UN 3077
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	2-Hydroxybiphenyl
<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, solid, n.o.s.(2-Hydroxybiphenyl)
<b>UN number</b>	UN 3077
<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**

Combustible dust

Serious eye damage or eye irritation

Skin corrosion or irritation

Specific target organ toxicity (single or repeated exposure)

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

#### **Components**

2-Phenylphenol

#### **CASRN**

90-43-7

### **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:**

The following chemicals are listed because of the additional requirements of Pennsylvania law:

#### **Components**

2-Phenylphenol

#### **CASRN**

90-43-7

### **California Prop. 65**

WARNING: This product can expose you to chemicals including 2-Phenylphenol, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://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: 464-126

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

Causes skin burns

Harmful if swallowed

This pesticide is toxic to fish.

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## 16. OTHER INFORMATION

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### Revision

Identification Number: 340941 / A749 / Issue Date: 10/15/2018 / Version: 5.1

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
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