



SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US,
INC.

Product name: BIOBAN™ 425 Antimicrobial

Issue Date: 01/03/2019

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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™ 425 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 3 - Oral

Acute toxicity - Category 2 - Inhalation

Skin corrosion - Category 1

Serious eye damage - Category 1

Skin sensitisation - Category 1

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Toxic if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Fatal if inhaled.

Precautionary statements

Prevention

Do not breathe 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/ protective clothing/ eye protection/ face protection.
Wear respiratory protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
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 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

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Polyethylene glycol monomethyl ether	9004-74-4	58.0 - 60.0 %
2-Methyl-4-isothiazolin-3-one	2682-20-4	14.0 - 16.0 %
Water	7732-18-5	14.0 - 16.0 %
2-n-Octyl-4-isothiazolin-3-one	26530-20-1	10.0 - 12.0 %
Polyethylene glycol	25322-68-3	1.0 - 3.0 %

4. FIRST AID MEASURES

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.

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: 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. 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.

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 in a well-ventilated place. 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: 1 - 55 °C (34 - 131 °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
2-Methyl-4-isothiazolin-3-one	Dow IHG	TWA	1.5 mg/m ³
	Dow IHG	STEL	4.5 mg/m ³
2-n-Octyl-4-isothiazolin-3-one	Dow IHG	TWA	0.2 mg/m ³
	Dow IHG	STEL	0.6 mg/m ³
Polyethylene glycol	US WEEL	TWA aerosol	10 mg/m ³

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: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 1000 ppm organic vapor: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full facepiece, airline respirator in the pressure demand mode. Above 1000 ppm organic vapor or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and R95 or P95 filters.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid clear
Color	Pale yellow
Odor	No data available
Odor Threshold	No data available
pH	2 - 6
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	100 °C (212 °F)
Flash point	227 °C (441 °F) <i>Cleveland Closed Cup Solvent</i>
Evaporation Rate (Butyl Acetate = 1)	No data available
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)	1.114
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
Percent volatility	<5 %

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 (NO_x) Sulphur oxides hydrogen chloride

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity

LD50, Rat, estimated 97.83 mg/kg OECD Test Guideline 425

Acute dermal toxicity

LD50, Rat, male and female, > 5,000 mg/kg OECD Test Guideline 402

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, 0.38 - 0.5 mg/l

Skin corrosion/irritation

Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Corrosive

Sensitization

Causes sensitisation.

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

Product test data not available. Refer to component data.

Teratogenicity

Product test data not available. Refer to component data.

Reproductive toxicity

Product test data not available. Refer to component data.

Mutagenicity

Product test data not available. Refer to component data.

Aspiration Hazard

Product test data not available. Refer to component data.

COMPONENTS INFLUENCING TOXICOLOGY:

Polyethylene glycol monomethyl ether

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)

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

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative.

Aspiration Hazard

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

2-Methyl-4-isothiazolin-3-one

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

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

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Did not cause birth defects in laboratory animals.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

Negative in genetic toxicity tests.

Aspiration Hazard

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

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.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

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

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were predominantly negative.

Animal genetic toxicity studies were predominantly negative.

Aspiration Hazard

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

Polyethylene glycol**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)

Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor.

The use of topical applications containing this material may not be appropriate in severely burned patients.

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

Carcinogenicity

Polyethylene glycols did not cause cancer in long-term animal studies.

Teratogenicity

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

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

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

12. ECOLOGICAL INFORMATION

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

General Information

There is no data available for this product.

Toxicity**Polyethylene glycol monomethyl ether****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, > 10,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), static test, 48 Hour, > 10,000 mg/l, OECD Test Guideline 202 or Equivalent

Toxicity to bacteria

EC50, Bacteria, 18 Hour, > 5,000 mg/l

2-Methyl-4-isothiazolin-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), 96 Hour, 4.77 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, 0.93 - 1.9 mg/l

Acute toxicity to algae/aquatic plants

EC50, Algae (Selenastrum capricornutum), 72 Hour, Growth rate, 0.158 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

NOEC, Pimephales promelas (fathead minnow), 33 d, 2.1 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna, 21 d, 0.04 mg/l

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 test, 96 Hour, 0.047 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 0.320 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, alga Scenedesmus sp., 72 Hour, Biomass, 0.084 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, Respiration inhibition, 3 Hour, 30.2 mg/l, OECD 209 Test

Chronic toxicity to fish

NOEC, Oncorhynchus mykiss (rainbow trout), 21 d, 0.022 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, 0.0016 mg/l

Toxicity to Above Ground Organisms

dietary LC50, Anas platyrhynchos (Mallard duck), 8 d, 1,215 mg/kg

dietary LC50, Colinus virginianus (Bobwhite quail), 8 d, > 5,620 mg/kg

oral LD50, Colinus virginianus (Bobwhite quail), 21 d, 346 mg/kg

Polyethylene glycol**Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

Persistence and degradability**Polyethylene glycol monomethyl ether**

Biodegradability: Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

Theoretical Oxygen Demand: 1.92 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	2.000 %
10 d	3.000 %
15 d	9.000 %
20 d	9.000 %

2-Methyl-4-isothiazolin-3-one

Biodegradability: Material is expected to be readily biodegradable.

Biodegradation: 98 %

Exposure time: 48 d

Method: Simulation study

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.

Biodegradation: 25 %

Exposure time: 30 d

Method: Method Not Specified.

Polyethylene glycol

Biodegradability: For this family of materials: 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.

10-day Window: Fail

Biodegradation: 48 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 1.67 - 1.77 mg/mg

Chemical Oxygen Demand: 1.81 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	0 - 17 %
10 d	3 - 56 %
20 d	39 - 77 %

Bioaccumulative potential**Polyethylene glycol monomethyl ether**

Bioaccumulation: For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

2-Methyl-4-isothiazolin-3-one

Bioaccumulation: Does not bioaccumulate. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.75 Measured

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): 2.45 Estimated.

Bioconcentration factor (BCF): 165 - 1,280 Fish Measured

Polyethylene glycol

Bioaccumulation: For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil**Polyethylene glycol monomethyl ether**

No data available.

2-Methyl-4-isothiazolin-3-one

No relevant data found.

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 (K_{oc}): 2120

Polyethylene glycol

No data available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Corrosive liquids, toxic, n.o.s.(2-Methyl-4-isothiazolin-3-one, 2-n-Octyl-4-isothiazolin-3-one)
UN number	UN 2922
Class	8 (6.1)
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S.(2-Methyl-4-isothiazolin-3-one, 2-n-Octyl-4-isothiazolin-3-one)
UN number	UN 2922
Class	8 (6.1)
Packing group	II
Marine pollutant	2-Methyl-4-isothiazolin-3-one, 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 (IATA/ICAO):

Proper shipping name	Corrosive liquid, toxic, n.o.s.(2-Methyl-4-isothiazolin-3-one, 2-n-Octyl-4-isothiazolin-3-one)
UN number	UN 2922
Class	8 (6.1)
Packing group	II

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

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

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

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: 464-781

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

MAY BE FATAL IF SWALLOWED OR INHALED

Harmful if absorbed through the skin

This product is toxic to fish, aquatic invertebrates, oysters and shrimp.

16. OTHER INFORMATION

Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
3	1	0

Revision

Identification Number: 11012180 / A749 / Issue Date: 01/03/2019 / Version: 3.1

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