SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US, INC.

Product name: DOWICIL™ 150 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.

1. IDENTIFICATION

Product name: DOWICIL™ 150 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

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Flammable solids - Category 2
Combustible dust
Acute toxicity - Category 4 - Oral
Acute toxicity - Category 3 - Dermal
Skin irritation - Category 2
Eye irritation - Category 2A
Skin sensitisation - Category 1
Reproductive toxicity - Category 2

Label elements
Hazard pictograms

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Signal word: **DANGER!**

Hazards
Flammable solid.
May form combustible dust concentrations in air.
Harmful if swallowed.
Toxic in contact with skin.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
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.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ 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. Call a POISON CENTER or doctor/ physician 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 exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

Synonyms: cis-1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride
This product is a substance.

Component	CASRN	Concentration
cis-1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	51229-78-8	96.0%
Cis-1,3-dichloropropene	10061-01-5	<= 0.3 %
Methylene chloride	75-09-2	<= 0.5 %

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.

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: 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 available in work area.

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: 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.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Unsuitable extinguishing media: No data available

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: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Ammonia. Amines.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. 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. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. If product becomes contaminated with water, monitor product for heat generation and/or decomposition. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents. Move container from fire area if this is possible without hazard.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Spilled material may cause a slipping hazard. 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. Absorb with approx. 272.6 g NaHSO3 (or 249 g Na2S2O5) for 100 g biocidal product. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Avoid contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly after handling. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Aqueous solutions containing this product can generate formaldehyde. Additional information on this and other products we offer may be obtained by contacting us. Ask for a product information brochure or data on how to access our website.

Conditions for safe storage: Protect from atmospheric moisture. Store in a dry place. Avoid moisture. Do not store in: Aluminum.

Storage stability
Shelf life: Use within 36 Month
Storage temperature: <= 49 °C (<= 120 °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
Cis-1,3-dichloropropene	ACGIH	TWA	1 ppm
	ACGIH	TWA	SKIN
Methylene chloride	ACGIH	TWA	50 ppm
	OSHA CARC	PEL	25 ppm
	OSHA CARC	STEL	125 ppm

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methylene chloride	75-09-2	Dichloromethane	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/l	ACGIH BEI

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.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). 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 most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.
The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Powder
Color	Off-white
Odor	Amine.
Odor Threshold	No test data available
pH	8.2 *Measured* 1% in solution
Melting point/range	> 150 °C (> 302 °F) *EC Method A1* Decomposes
Freezing point	Not applicable
Boiling point (760 mmHg)	Not determined
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air.
Lower explosion limit	Not applicable to solids
Upper explosion limit	Not applicable to solids
Vapor Pressure	0.00009 Pa at 25 °C (77 °F) *Literature*
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	Not applicable

Water solubility	> 50 % at 10 °C (50 °F) *Literature*
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	391 °C (736 °F) *EC Method A16*
Decomposition temperature	192 °C (378 °F) *Literature*
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive *EEC A14*
Oxidizing properties	No *Assessment based on structural analysis*
Bulk density	0.41 g/cm3 *CIPAC MT 33*
Molecular weight	251.2 g/mol *Literature*

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

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 80°C (176°F) Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Avoid static discharge. Avoid moisture. Water contamination may cause heat generation and decomposition.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Avoid contact with metals such as: Aluminum.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Chlorinated hydrocarbons. Carbon dioxide. Ammonia. Amines. Hydrogen chloride. Trimethylamine. Gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat, female, 1,552 mg/kg

Acute dermal toxicity
Prolonged or widespread skin contact may result in absorption of harmful amounts. Anorexia and weight loss occurred in some rabbits used in dermal toxicity studies; internal lesions occurred in different organs, primarily gastrointestinal, but these lesions were inconsistently observed and had no dose response.

The data presented are for the following material: Solid.
LD50, Rabbit, 923 mg/kg
The data presented are for the following material: Strong solutions (50%).
LD50, Rabbit, 400 - 2,831 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to dust. For respiratory irritation and narcotic effects: No relevant data found.

LC50, Rat, 4 Hour, Aerosol, > 5.2 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness.
May cause more severe response if skin is damp.

Serious eye damage/eye irritation
May cause moderate eye irritation.
Corneal injury is unlikely.

Sensitization
Not likely to be a skin sensitizer in dry powder form. May be a weak skin sensitizer in susceptible individuals at concentrations > 1% aqueous solution.
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)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
In animals, effects have been reported on the following organs after ingestion:
Liver.

Carcinogenicity
Methylene chloride has been shown to increase the incidence of malignant tumors in mice and benign tumors in rats. Other animal studies on methylene chloride alone, as well as several human epidemiology studies, failed to show a tumorigenic response. Methylene chloride is not believed to pose a measurable carcinogenic risk to humans when handled as recommended.

1,3-Dichloropropene. Has been shown to cause cancer in laboratory animals by the oral route. Inhalation exposure resulted in an increase in the normal occurrence of benign lung tumors in male mice.

Teratogenicity

CTAC has caused birth defects in rats administered relatively high oral doses; no defects were observed at lower doses. CTAC did not cause birth defects or any other effects on the fetus when relatively high doses were administered dermally, the most likely route of exposure.

Reproductive toxicity
No relevant data found.

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

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

Carcinogenicity

Component	List	Classification
Cis-1,3-dichloropropene	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.
Methylene chloride	IARC	Group 2A: Probably carcinogenic to humans
	US NTP	Reasonably anticipated to be a human carcinogen
	OSHA CARC	OSHA specifically regulated carcinogen
	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.

12. ECOLOGICAL INFORMATION

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

Toxicity

cis-1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Lepomis macrochirus (Bluegill sunfish), flow-through test, 96 Hour, 66 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), 30.4 - 40 mg/l
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 25.8 mg/l

Acute toxicity to algae/aquatic plants
EbC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Biomass, 1.5 mg/l

Toxicity to bacteria
EC50, activated sludge, 1,870 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 19.8 mg/l
LOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 27.5 mg/l

MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 23.3 mg/l

Cis-1,3-dichloropropene

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, Cyprinodon variegatus (sheepshead minnow), 96 Hour, 0.068 - 1.8 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 1.4 mg/l, Method Not Specified.

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
dietary LC50, Colinus virginianus (Bobwhite quail), > 10000mg/kg diet.
LC50, Apis mellifera (bees), 6 Hour, 18097mg/m³

Persistence and degradability

cis-1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride

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.
10-day Window: Fail
Biodegradation: 51 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.23 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	23 %
10 d	28 %
20 d	28 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Method: Estimated.

Cis-1,3-dichloropropene

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 8 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

Bioaccumulative potential

cis-1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): < -2 OECD Test Guideline 107 or Equivalent

Cis-1,3-dichloropropene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.603 Estimated.

Mobility in soil

cis-1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride

Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient (Koc): 316 OECD 121: HPLC Method

Cis-1,3-dichloropropene

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

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Flammable solids, toxic, organic, n.o.s.(Cis-3-chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride)
UN number	UN 2926
Class	4.1 (6.1)
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.(Cis-3-chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride)
UN number	UN 2926
Class	4.1 (6.1)
Packing group	III

Marine pollutant	Cis-3-chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride
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	Flammable solid, toxic, organic, n.o.s.(Cis-3-chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride)
UN number	UN 2926
Class	4.1 (6.1)
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
Flammable (gases, aerosols, liquids, or solids)
Combustible dust
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Reproductive toxicity

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

Components	**CASRN**
Methylene chloride	75-09-2

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

Components	**CASRN**	**RQ (RCRA Code)**
Methylene chloride	75-09-2	1000 lbs RQ
Methylene chloride	75-09-2	10 lbs RQ (F001)
Methylene chloride	75-09-2	10 lbs RQ (F002)

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Methylene chloride	75-09-2

Cis-1,3-dichloropropene 10061-01-5

California Prop. 65
WARNING: This product can expose you to chemicals including Methylene chloride, which is/are known to the State of California to cause cancer. 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: 464-327
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:

WARNING

May be fatal if absorbed through skin
Harmful if swallowed.
Causes moderate eye irritation
This pesticide is toxic to fish and invertebrates.

16. OTHER INFORMATION

Revision
Identification Number: 33062 / A749 / Issue Date: 10/15/2018 / Version: 11.1
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)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
OSHA CARC	OSHA Specifically Regulated Chemicals/Carcinogens
PEL	Permissible exposure limit (PEL)
SKIN	Absorbed via skin
STEL	Excursion limit
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)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