Material Safety Data Sheet

The Dow Chemical Company

Product Name: SUMP BUDDY* WT Antimicrobial Time Release Tablets

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The Dow Chemical Company 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. Product and Company Identification

Product Name

SUMP BUDDY* WT Antimicrobial Time Release Tablets

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview

Color: Off-white
Physical State: Solid
Odor: Mild
Hazards of product:

DANGER! Causes severe eye burns. May be fatal if swallowed. Causes burns of the mouth and throat. Causes skin irritation. May cause allergic skin reaction. Causes respiratory tract irritation. Aspiration hazard. Can enter lungs and cause damage. Toxic fumes may be released in fire situations. Highly toxic to fish and/or other aquatic organisms.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Skin Contact: Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.
Skin Absorption: Harmful if absorbed through skin.
Skin Sensitization: Skin contact may cause an allergic skin reaction.
Inhalation: Dust may cause irritation to upper respiratory tract (nose and throat).
Ingestion: May be fatal if swallowed.
Effects of Repeated Exposure: Excessive exposure may increase the blood and tissue levels of bromine. Observations in animals include kidney effects following repeated ingestion of active ingredient, but no evidence of systemic toxicity following repeated dermal exposure at maximum attainable doses For the minor component(s): In humans, effects have been reported on the following organs: Blood.
Birth Defects/Developmental Effects: For the active ingredient(s): Has been toxic to the fetus in lab animals at doses toxic to the mother.

3. Composition Information

Component	CAS #	Amount
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	40.0 %
Hydroxypropyl methyl cellulose	9004-65-3	27.0 %
Octadecanoic acid	57-11-4	2.5 %

4. First-aid measures

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.
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. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.
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.
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. Seek medical attention immediately.
Notes to Physician: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.
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. 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. Move container from fire area if this is possible without hazard. 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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. 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.
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 bromide. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Cyanogen bromide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: See Section 13, Disposal Considerations, for additional information. Contain spilled material if possible. Absorb with materials such as: Sand. Collect in suitable and properly labeled containers.
Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill.
Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling
General Handling: Do not get in eyes. Avoid breathing vapor or mist. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Do not swallow. Use with adequate ventilation. Keep container closed. Wash thoroughly after handling.
Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage
Do not store in: Aluminum. Brass. Copper. Copper alloys. Mild steel.
Storage Period: 12 Months
Storage temperature: <= 35 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Hydroxypropyl methyl cellulose	Dow IHG	TWA Total dust	10 mg/m3
Octadecanoic acid	Dow IHG	TWA	10 mg/m3

ACGIH	TWA	10 mg/m3

Personal Protection

Eye/Face Protection: Use chemical goggles. Eye wash fountain should be located in immediate work area.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. 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.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Solid
Color	Off-white
Odor	Mild
Flash Point - Closed Cup	No test data available
Flammable Limits In Air	**Lower**: No test data available **Upper**: *Not applicable* No test data available
Autoignition Temperature	No test data available
Vapor Pressure	0.00004 mmHg @ 25 °C *Literature*
Boiling Point (760 mmHg)	No test data available.
Vapor Density (air = 1)	1 *Literature*
Specific Gravity (H2O = 1)	No test data available
Freezing Point	No test data available
Melting Point	*Literature* (with decomposition)
Solubility in Water (by weight)	*Literature* slowly soluble in more than 10 times its own volume
pH	No test data available

10. Stability and Reactivity

Stability/Instability

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

Conditions to Avoid: Avoid temperatures above 70°C (158°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Amines. Strong bases. Strong oxidizers. Strong reducing agents. Avoid contact with metals such as: Aluminum.

Hazardous Polymerization
Will not occur.

Thermal Decomposition
Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Dibromoacetonitrile. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity
Ingestion
LD50, Rat 224 mg/kg
Skin Absorption
LD50, Rabbit > 2,000 mg/kg
Sensitization
Skin
Skin contact may cause an allergic skin reaction.
Repeated Dose Toxicity
Excessive exposure may increase the blood and tissue levels of bromine. Observations in animals include kidney effects following repeated ingestion of active ingredient, but no evidence of systemic toxicity following repeated dermal exposure at maximum attainable doses For the minor component(s): In humans, effects have been reported on the following organs: Blood.
Developmental Toxicity
For the active ingredient(s): Has been toxic to the fetus in lab animals at doses toxic to the mother. For the active ingredient(s): Did not cause birth defects in laboratory animals.
Genetic Toxicology
For the component(s) tested: In vitro genetic toxicity studies were negative. For the active ingredient(s): Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE
Data for Component: **2,2-Dibromo-3-nitrilopropionamide**

Movement & Partitioning
Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Movement of DBNPA in soil is expected to be reduced by rapid degradation (within minutes to hours).
Henry's Law Constant (H): 4.67E-10 atm*m3/mole; 25 °C Estimated
Partition coefficient, n-octanol/water (log Pow): 0.79 Measured
Partition coefficient, soil organic carbon/water (Koc): 15 Estimated
Bioconcentration Factor (BCF): 13; fish; Measured

Persistence and Degradability
Degradation is expected in the soil environment within minutes to hours. Chemical degradation (hydrolysis) is expected in the environment. 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.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.00E-12 cm3/s	5.3 d	

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
35 - 78 %	28 d	OECD 301B Test
83.3 %	28 d	OECD 303A Test
17 - 22 %	28 d	OECD 306 Test

Chemical Oxygen Demand: 0.26 mg/mg
Theoretical Oxygen Demand: 0.59 mg/mg

Data for Component: **Octadecanoic acid**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7). 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. Expected to be relatively immobile in soil (Koc > 5000).
Henry's Law Constant (H): 4.76E-7 atm*m3/mole Measured
Partition coefficient, n-octanol/water (log Pow): 8.23 Estimated
Partition coefficient, soil organic carbon/water (Koc): 11,668 Estimated

Persistence and Degradability

Biodegradation may occur under aerobic conditions (in the presence of oxygen).
Biodegradation may occur under anaerobic conditions (in the absence of oxygen).
Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
		< 2.5 %	

Chemical Oxygen Demand: 2.70 mg/mg
Theoretical Oxygen Demand: 2.93 mg/mg

ECOTOXICITY

Data for Component: **2,2-Dibromo-3-nitrilopropionamide**

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

Fish Acute & Prolonged Toxicity
LC50, rainbow trout (Oncorhynchus mykiss): 0.71 - 2.0 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna: 0.66 mg/l
Aquatic Plant Toxicity
EC50, green alga Selenastrum capricornutum, biomass growth inhibition: 0.30 mg/l
Toxicity to Micro-organisms
EC50; activated sludge, respiration inhibition: 3.1 mg/l
Aquatic Invertebrates Chronic Toxicity Value:

ChV Value mg/l	Species	Test Type	Endpoint	Exposure Time
0.092 mg/l	water flea Daphnia magna	static renewal	number of offspring	21 d

Toxicity to Non-mammalian Terrestrial Species
dietary LC50, bobwhite (Colinus virginianus): > 10,000 ppm
dietary LC50, mallard (Anas platyrhynchos): > 10,000 ppm

Data for Component: **Octadecanoic acid**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, fathead minnow (Pimephales promelas): > 100 mg/l

13. Disposal Considerations

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. DOW HAS 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. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

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

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	40.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.
CEPA - Domestic Substances List (DSL)
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	3	0	2

Recommended Uses and Restrictions

An antimicrobial product - For industrial use. Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group.

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline

WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company 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.