

ASHLAND®

SAFETY DATA SHEET

Page: 1

Revision Date: 09/11/2013

Print Date: 4/4/2014

MSDS Number: 000000180138

Version: 1.5

Spectrum™ RX5080 Microbiocide Agent
™ Trademark, Ashland or its subsidiaries, registered
in various countries 413439

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)
Product name	Spectrum™ RX5080 Microbiocide Agent	
Product code	™ Trademark, Ashland or its subsidiaries, registered in various countries 413439	
Product Use Description	Reserved for industrial and professional use.	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, yellow

DANGER! POISON! MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. CAUSES SKIN AND RESPIRATORY TRACT IRRITATION. HARMFUL IF SWALLOWED. MAY BE HARMFUL. MAY CAUSE SEVERE BURNS OF RESPIRATORY AND DIGESTIVE TRACTS. MAY BE FATAL IF INHALED. CAUSES SEVERE BURNS OF THE EYES AND SKIN.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes.
Can injure the cornea and cause blindness.

Skin contact

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage. Passage of this material into the body through the skin is possible, and may add to toxic effects from breathing or swallowing. Skin absorption of this material (or a component) may be increased through injured skin.

Ingestion

Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

Inhalation

Breathing of vapor or mist is possible. Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air

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concentrations below the recommended exposure limits, if applicable (see Section 8.). Excessive inhalation or ingestion may produce rashes, depression, emaciation, and in severe cases, psychoses and mental deterioration.

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Headache

Target Organs

No data

Carcinogenicity

Dibromoacetonitrile is listed as a possible human carcinogen by the International Agency for Research on Cancer.

Reproductive hazard

This material (or a component) may be harmful to the human fetus based on positive test results with laboratory animals.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
2,2 DIBROMO-3-NITRILOPROPIONAMIDE	10222-01-2	>=20-<30%
DIBROMOACETONITRILE	3252-43-5	>=1.5-<5%

4. FIRST AID MEASURES

Eyes

If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

Ingestion

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Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: No information available.

Treatment: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO₂), Water spray

Hazardous combustion products

Alcohols, Bromine, carbon dioxide and carbon monoxide, Cyanides, ethers, Hydrocarbons, hydrogen bromide, Ketones, nitrogen oxides (NO_x), Sodium oxides

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other information

Comply with all applicable federal, state, and local regulations.

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7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area. Keep from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Contains no substances with occupational exposure limit values.

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Mechanical ventilation systems used to ventilate corrosive storage or process areas must be designed with components that are corrosion resistant.

Eye protection

Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist. Maintain eye wash station in immediate work area.

Skin and body protection

Wear appropriate chemical impervious clothing and boots whenever there is potential for skin contact with product. Launder clothing before reuse. Maintain safety shower at all locations where skin contact could occur. Contact your local safety equipment supplier to assist the facility in determining proper selection of personal protective equipment for the applications/operations present at your facility. Wear resistant gloves (consult your safety equipment supplier). Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state	liquid
Colour	yellow, amber
Odour	slight
Boiling point/boiling range	> 158 °F / > 70 °C
Melting point/range	< -58 °F / < -50 °C
pH	1.3 - 1.4
Flash point	212 °F / 100 °C Closed Cup
Evaporation rate	(<)1 n-Butyl Acetate
Vapour pressure	18.900 mmHg @ 77 °F / 25 °C
Relative vapour density	(>)1 AIR=1
Density	(+/- 0.05) 1.25 g/cm ³ @ 77 °F / 25 °C
	10.6 lb/gal @ 60 °F / 16 °C
Water solubility	soluble
Viscosity, dynamic	64 mPa.s @ 21 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

temperatures above 150 degrees F (66 °C), Heat, flames and sparks., Exposure to moisture.

Incompatible products

Acids, aluminum, anionic materials, Bases, oxidizable substances, reducing agents, Strong oxidizing agents

Hazardous decomposition products

Alcohols, Bromine, carbon dioxide and carbon monoxide, Cyanides, ethers, Hydrocarbons, hydrogen bromide, nitrogen oxides (NOx), ketones

Hazardous reactions

Product will not undergo hazardous polymerization.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin absorption

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Skin contact
Eye Contact
Ingestion

Product

Acute oral toxicity : LD 50 Rat
510 mg/kg

Acute inhalation toxicity : LC 50 Rat: 1.325 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD 50 Rabbit: > 2,000 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye
irritation : Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation : Causes sensitisation on guinea-pigs.

Germ cell mutagenicity

Genotoxicity in vitro : Type: Ames test
Result: negative

Components:

2,2 DIBROMO-3-NITRILOPROPIONAMIDE:

Acute oral toxicity : LD 50 Rat, male: 235 mg/kg
LD 50 Rat, female: 178 mg/kg

Acute inhalation toxicity : LC 50 Rat: 0.32 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD 50 Rabbit: > 2 g/kg

Respiratory or skin sensitisation : Species: guinea pig
Classification: May cause sensitization by skin contact.
Result: May cause sensitization by skin contact.

DIBROMOACETONITRILE:

Acute oral toxicity : LD 50 Rat: 245 mg/kg

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12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish : LC 50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l
Exposure time: 96 h
- LC 50 (Lepomis macrochirus (Bluegill sunfish)): 6.5 mg/l
Exposure time: 96 h
Test Method: static test
- Toxicity to daphnia and other aquatic invertebrates : EC 50 (Daphnia magna (Water flea)): 2.5 mg/l
Exposure time: 48 h
Test Method: static test
- Toxicity to algae : EC 50 (Pseudokirchneriella subcapitata (green algae)): 1.5 mg/l
Exposure time: 96 h

Components:

2,2 DIBROMO-3-NITRILOPROPIONAMIDE:

- Toxicity to fish : LC 50 (Oncorhynchus mykiss (rainbow trout)): 1.0 mg/l
Exposure time: 96 h
- LC 50 (Bluegill (Lepomis macrochirus)): 2.3 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (Daphnia magna)): 0.86 mg/l
Exposure time: 48 h
- Toxicity to algae : EC 50 (Pseudokirchneriella subcapitata (green algae)): 0.30 mg/l
Exposure time: 72 h
- Toxicity to fish (Chronic toxicity) : 0.47 - 0.98 mg/l
Species: Oncorhynchus mykiss (rainbow trout)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.02 mg/l
Species: Water flea (Daphnia magna)

DIBROMOACETONITRILE:

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Toxicity to fish : LC 50 (Fathead minnow (Pimephales promelas)): 0.49 - 0.62 mg/l
Exposure time: 96 h
Method: Static
Mortality

Persistence and degradability

Product:

Biodegradability : Biodegradation: 85 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Components:

2,2 DIBROMO-3-NITRILOPROPIONAMIDE:

Biodegradability : Biodegradation: 35 - 78 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Not readily biodegradable.

Bioaccumulative potential

Product:

no data available

Components:

2,2 DIBROMO-3-NITRILOPROPIONAMIDE:

Partition coefficient: n-
octanol/water : Pow: 0.8

DIBROMOACETONITRILE:

Partition coefficient: n-
octanol/water : log Pow: Estimated 0.47

Mobility in soil

Product:

no data available

Components:

no data available

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13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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U.S. DOT - ROAD

UN 3265	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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U.S. DOT - RAIL

UN 3265	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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U.S. DOT - INLAND WATERWAYS

UN 3265	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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TRANSPORT CANADA - ROAD

UN 3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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TRANSPORT CANADA - RAIL

UN 3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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TRANSPORT CANADA - INLAND WATERWAYS

UN 3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)	8		III	
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INTERNATIONAL MARITIME DANGEROUS GOODS

UN	3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2- DIBROMO-2- CYANOACETAMIDE)	8	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	3265	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2- CYANOACETAMIDE)	8	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	3265	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2- CYANOACETAMIDE)	8	III
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MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	3265	LIQUIDO CORROSIVO, ACIDO, ORGANICO, N.E.P. (2,2- DIBROMO-2- CYANOACETAMIDE)	8	III
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*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

DIBROMOACETONITRILE

SARA Hazard Classification

SARA 311/312 Classification

Acute Health Hazard

SARA 313 Component(s)

SARA 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.

Notification status

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)

y (positive listing)

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	HMIS	NFPA
Health	3	3
Flammability	1	1
Physical hazards	0	
Instability		1
Specific Hazard	Face Shield, Gloves, Apron	--

Biocides

74655-21

Hercules Incorporated, A wholly owned subsidiary of
 Ashland Inc.

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.

H-statement : Hazard Statement

IATA : International Air Transport Association.

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

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STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System