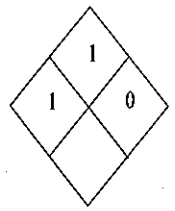
MATERIAL SAFETY DATA SHEET



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DURHAM® METALDEHYDE GRANULES 7.5; TRAILS END® 7.5
GENERAL USE: Molluscicide
PRODUCT DESCRIPTION: Gray to brown or blue granule with an aldehyde odor
EPA REGISTRATION NUMBER: 5481-103
MSDS NUMBER: 138_15
CURRENT REVISION DATE: 14 December, 2011

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
PHONE: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Metaldehyde [2,4,6,8-Tetramethyl-1,3,5,7-tetroxocane or 2,4,6,8-Tetramethyl-1,3,5,7-tetraoxacyclooctane]	7.5%	108-62-3
Other ingredients	92.5%	
(includes trace of Crystalline silica, quartz)	trace	14808-60-7

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
Crystalline silica (quartz respirable particles)	Silicosis	0.1 mg/m^3	0.05 mg/m^3

* Exposure Limits 8 hrs. TWA

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3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! May be harmful if swallowed, inhaled, or absorbed through the skin. Do not breathe dust, get in eyes, on skin or clothing.

Keep granules away from children, dogs and other pets. Bait may be attractive to dogs.

Do not contaminate water supplies.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Typical routes of entry are skin or eye contact, ingestion of granules, and inhalation of dusts.

SIGNS OF ACUTE OVEREXPOSURE: Based on animal toxicity information for metaldehyde, it is anticipated that this material would be harmful upon ingestion and that direct contact may elicit mild eye and skin irritation. Overexposure to metaldehyde may cause excessive salivation, vomiting, nausea, acetonuria (odor of acetone on breath), convulsions, increased body temperature, depression of medullary respiratory and vasomotor control centers. Coma. May be fatal. [Note: Because of the low amounts of metaldehyde in the product, it is unlikely the victim can be exposed to sufficient quantities of metaldehyde to have coma or death induced.]

SIGNS OF CHRONIC OVEREXPOSURE: Same as for acute overexposure.

OTHER POTENTIAL EFFECTS: Acetaldehyde, a decomposition product of Metaldehyde, has been listed as carcinogenic in the IARC monographs and by the NTP. Respirable crystalline silica is listed as being carcinogenic by both IARC and NTP. Both are present at less than 0.01% in the product. None of the components found in appreciable quantities has been found to be carcinogenic by IARC, NTP, or OSHA.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Overexposure to metaldehyde may aggravate preexisting conditions associated with the kidney, liver, and brain.

4. FIRST AID MEASURES

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately if irritation develops or persists.

4. FIRST AID MEASURES, cont'd

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately.

INGESTION: If swallowed, immediately give 3-4 glasses of water. DO NOT induce vomiting. If vomiting occurs, give fluids again. Get immediate medical attention. Have physician determine if patient's condition allows induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

SKIN: Immediately wash contaminated area with soap and warm water. Remove contaminated clothing. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

NOTE TO PHYSICIANS: According to Hazardous Substance Database (HSDB), gastric lavage should be considered if potentially life-threatening levels of Metaldehyde have been ingested, if the procedure can be performed within one hour of ingestion. Administration of Diazepam or Clonidine 20 minutes after ingestion of 1000 mg/kg of Metaldehyde by mice delayed the onset of symptoms and reduced mortality. This is equivalent to 0.6 lb of product ingested for a 10 kg child. Therefore, Diazepam and Clonidine may be appropriate antidotes to reduce the symptomatology of Metaldehyde ingestion.
For acute inhalation overexposure, the patient should be monitored as respiratory failure may occur 24 to 48 hours after exposure.
Contact your local or state Poison Control Center for more information.

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5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point:	Pure active ingredient has a reported flash point of 97°F (TCC)
Autoignition Temperature:	Not applicable
Flammable Limits:	
Lower flammable limit:	Not applicable
Upper flammable limit:	Not applicable

EXPLOSIVITY:

Mechanical Impact:	Not available. Not expected to be sensitive to mechanical impact.
Static Discharge:	Not available
Rate of Burning:	Not available
Explosive Power:	Not available

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides, paraldehyde, acetaldehyde, and other unknown compounds can be formed during the combustion of Metaldehyde.

EXTINGUISHING MEDIA: Alcohol foam, water, and dry chemical.

FIRE FIGHTING INSTRUCTIONS: Wear full protective gear, including self-contained breathing apparatus. Stay upwind of fire.

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6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use appropriate personal protective equipment (PPE, Section 8). Keep bystanders upwind and away from the spill.

LARGE OR SMALL SPILL: Sweep or vacuum the spilled product into a closed container for reuse according to the label or for disposal as a hazardous waste.

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7. HANDLING AND STORAGE

HANDLING: Wear personal protective equipment listed below (Section 8). Keep away from pets, children, and unauthorized users. Avoid contact with dust.

STORAGE: Store product in original labeled container in a cool, dry, locked place out of the reach of children. Keep container tightly closed when not in use. Do not store in direct sunlight. Do not contaminate water, food, or feed by storage or application.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No engineering controls are necessary under normal use conditions. For manufacturing, sufficient ventilation should be used to ensure keeping the exposures to dust below the TLV's.

RESPIRATORY PROTECTION: In processes where dusts or airborne particulates may be generated, a Dust/Mist filtering respirator (MSHA/NIOSH approval number prefix N95 or greater) or MSHA/NIOSH approved respirator with dust cartridges or equivalent is required in the absence of effective environmental controls.

SKIN PROTECTION: Applicators and other handlers must wear long-sleeved shirt and long pants; waterproof gloves; shoes plus socks.

EYE PROTECTION: Safety glasses or goggles are required when working with chemicals.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid
APPEARANCE:	Gray to brown or blue granule
ODOR:	Aldehyde odor
BOILING POINT:	Not applicable
FREEZING/MELTING POINT:	Not applicable
VAPOR PRESSURE (mm/Hg):	1.9 @ 24°C (active ingredient)

9. PHYSICAL AND CHEMICAL PROPERTIES, cont'd

VAPOR DENSITY:	6.06 (air = 1)
SPECIFIC GRAVITY:	1.3 to 1.4 g/cc
BULK DENSITY:	81.3 - 87.5 lb/ft^3
EVAPORATION RATE:	Not available
PERCENT VOLATILE BY VOL:	5%
SOLUBILITY IN WATER:	0.2 g/l @ 17°C for active ingredient
pH:	Not available
PARTITION COEFFICIENT:	Not available

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): Stable under normal storage and use conditions. Moisture can cause very slow hydrolysis of active ingredient.

INCOMPATIBILITY: Avoid oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Acetaldehyde can be formed by decomposition of Metaldehyde. Decomposition by burning may result in carbon monoxide and other toxic fumes and vapors of unknown composition.

HAZARDOUS POLYMERIZATION: Metaldehyde is already a polymer. Further polymerization is unlikely.

11. TOXICOLOGICAL INFORMATION

GENERAL: Only acute toxicity data is available for this product. Additional information on the active ingredient, Metaldehyde, is given below to help you to determine the potential toxicity of this product.

INGESTION:	Oral LD_{50} (rat):	>5000 mg/kg (Tox Cat IV)
INHALATION:	Inhalation LC_{50} (rat):	314 mg/L (4 hr, Tox Cat IV)
DERMAL:	Skin LD_{50} (rabbit):	> 5050 mg/kg (Tox Cat IV)
IRRITATION:	Eye irritation:	Minimally Irritating (Tox Cat IV)
	Skin irritation:	Slightly Irritating (Tox Cat IV)
SENSITIZATION:	Skin sensitization: (guinea pig)	Not a sensitizer

TERATOGENICITY: No evidence of teratogenicity in laboratory testing.

MUTAGENICITY: No evidence of mutagenicity with *in vitro* testing.

CARCINOGENICITY: None of the components found in appreciable quantities has been found to be carcinogenic by IARC, NTP, or OSHA. Acetaldehyde, a decomposition product of Metaldehyde, has been listed as carcinogenic in the IARC monographs. Respirable crystalline silica is listed as being carcinogenic by both IARC and NTP. Both are present at less than 0.01% in the product.

11. TOXICOLOGICAL INFORMATION, cont'd

REPRODUCTIVE TOXICITY: No evidence of reproductive toxicity has been observed in laboratory studies.
TOXICOLOGICAL SYNERGISTIC PRODUCTS: No information is available.

12. ECOLOGICAL INFORMATION

GENERAL: This product may be fatal to dogs, other pests, and wild animals if eaten. May be toxic to water inhabitants. Do not contaminate water bodies.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed on site by use according to the label or at an approved waste disposal facility. Federal, state and local authorities should be contacted to determine the current regulations.

CONTAINER DISPOSAL: The container may be disposed in a sanitary landfill or by incineration after completely emptying the bag into the application equipment. Federal, state and local authorities should be contacted to determine the current regulations.

14. TRANSPORTATION INFORMATION

DOT CLASS:	Not regulated
UN NUMBER:	Not regulated
IMDG CLASS (sea):	Not regulated
IATA CLASS (air):	Not regulated
PACKING GROUP:	Not regulated
HAZARD LABEL(s):	Not regulated
ADR CLASS (road):	Not regulated
PROPER SHIPPING NAME(s):	Not regulated
REPORTABLE QUANTITY:	None
SPECIAL INFORMATION:	None
TYPICAL PACKAGING: (GENERAL DESCRIPTION)	25 lb and 50 lb lined Kraft bags

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

15. REGULATORY INFORMATION, cont'd

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	No
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: This product contains trace amounts (less than 0.01%) of Paraldehyde (CAS # 123-63-7).

CERCLA Reportable Quantities (RQ): Paraldehyde (CAS # 123-63-7) - 1000 lbs

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product may contain respirable crystalline silica, known to the State of California to cause cancer.

16. OTHER INFORMATION

MSDS STATUS:

Date This Revision: 14 December, 2011
Date Previous Revision: 18 January, 2008
Person Responsible for Preparation: Gary A. Braden

REASONS FOR REVISION: Annual Review. Changes were made in sections 11 and 15 to reflect current knowledge about the product or its raw materials. Formatting changes were made throughout the msds.

DISCLAIMER: This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
ADR	-	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

This is the last page of this MSDS. There should be 7 pages.