



**MATERIAL
SAFETY DATA
SHEET**

VeriGuard 60

DATE: 08/21/2006

SUPERSEDES: 08/01/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: VeriGuard 60
SYNONYMS: DMDM Hydantoin and Benzisothiazolinone
CHEMICAL NAMES: (actives): 1,3-dihydroxymethyl-5,5-dimethylhydantoin; 1,3-dimethylol-5,5-dimethylhydantoin; 1,3-Bis(hydroxymethyl)-5,5-dimethyl-2,4-imidazolidinedione and benzisothiazolinone; 1,2-benzisothiazolin-3-one
MOLECULAR FORMULA: Mixture
MOLECULAR WEIGHT: Mixture
VERICHEM, Inc. 3499 Grand Avenue, Pittsburgh, PA, USA, 15225 (412-331-7299, 8:30 am to 5:00 pm)
EMERGENCY PHONE: For any emergency involving spill, leak, fire, exposure, or accident call CHEMTREC: 1-800-424-9300. Outside the USA and Canada call: 703-527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

REGULATED COMPONENTS

COMPONENT	CAS NUMBER	PERCENT	WORKER EXPOSURE	REFERENCE
1,3-dihydroxymethyl-5,5-dimethylhydantoin	6440-58-0	*	None established	
1-Hydroxymethyl-5,5-dimethylhydantoin	116-25-6	*	None established	
3-Hydroxymethyl-5,5-dimethylhydantoin	16228-00-5	*	None established	
5,5-dimethylhydantoin	77-71-4	*	None established	
Benzisothiazolinone	2634-33-5	1	None established	
Water	7732-18-5	37	None established	

* The sum of the four asterisked components is approximately 62%. These four components, along with the formaldehyde, are present as an equilibrium mixture. The total available Formaldehyde moiety in this product is 15%, of which up to 0.09% is present as free Formaldehyde in solution.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE AND ODOR: Light brownish liquid with a slight formaldehyde odor. **EFFECTS OF OVEREXPOSURE:** Primary Routes of Exposure-Skin and eye contact and inhalation. Based upon information available for this material, and closely related materials, it is anticipated that direct contact will produce mild eye and skin irritation and moderate eye irritation, and inhalation may produce mild, reversible irritation to the mucous membranes. Components of this material have been shown to exhibit weak sensitization potential in both animal and human overexposure. Heating this material in an open vessel will result in the release of Formaldehyde. Formaldehyde has been shown to cause sensitization reactions in some sensitive individual. Therefore, repeated contact should be avoided. Formaldehyde is listed by IARC, OSHA and NTP as a possible human carcinogen by inhalation. Epidemiological studies, however, do not document any increased incidence of human cancers directly attributable to Formaldehyde exposure.

PHYSICAL/CHEMICAL HAZARDS: Overexposure may aggravate existing conditions. May cause allergic response in persons with pre-existing sensitivity.

4. FIRST AID MEASURES (IN CASE OF CONTACT)

IF IN EYES: Flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the surface of the eye and lids with water. Get immediate medical attention. **IF ON SKIN OR CLOTHING:** Wash affected areas with plenty of running water, and soap if available, for several minutes. Remove contaminated clothing and shoes. Seek medical attention if irritation develops. **IF SWALLOWED:** If swallowed, give 3-4 glasses of water but DO NOT induce vomiting evacuation of stomach unless instructed by physician. If vomiting does occur, give fluids. Get medical attention. Do not give anything by mouth to an unconscious or convulsing person. **IF INHALED:** Remove from area to fresh air. If not breathing, clear airway and start artificial respiration. If victim is having trouble breathing, give supplemental oxygen. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	>200 ° F
FLAMMABLE LIMITS (% BY VOLUME):	Not Applicable
AUTOIGNITION TEMPERATURE:	Not known
DECOMPOSITION TEMPERATURE:	

EXTINGUISHING MEDIA AND FIRE FIGHTING INSTRUCTION

Extinguishing media: Foam, CO₂, Dry Chemical, Water. Must wear NIOSH/MSHA approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray. Products of combustion are toxic. Heating of this product in the open will release formaldehyde. When this product is spread over a large area, irritating levels of gaseous formaldehyde may be produced.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

CAUTION! Wear appropriate protective equipment and NIOSH/MSHA approved respirator where mists or vapors of known concentrations may be generated (self-contained breathing apparatus preferred). **Warning!** When spilled, and liquid spreads over a large area, irritating levels of gaseous Formaldehyde may be produced. Dike and contain spill with inert material (sand, earth, etc.) Transfer the liquid and solid separately to containers for recovery or disposal. Keep spill out of sewers and open bodies of water. Dispose of in compliance with all Federal, state, and local laws regulations. Incineration is the preferred method.

7. HANDLING AND STORAGE

STORAGE AND HANDLING REQUIREMENTS: Store at or near room temperature. Keep containers tightly closed until used. Do not store below 60° F, to avoid formation of crystals in this material. Preparation of formulations with this material should be carried out in closed vessels. While formulating under these conditions, temperatures as high as 80° C can be tolerated for a short period of time.

8. PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS: Wear chemical splash goggles where there is a potential for eye contact. Use safety glasses with side shields under typical use condition where eye contact is not a concern. **SKIN PROTECTION REQUIREMENTS:** Rubber or neoprene gloves, when needed, to prevent skin contact. **VENTILATION REQUIREMENTS:** In processes where mists or vapors may be generated, proper ventilation must be provided in accordance with good ventilation practices. **RESPIRATOR REQUIREMENTS:** In processes where mists or vapors may be generated, a NIOSH/MSHA jointly approved respirator is advised in the absence of proper environmental controls. **OTHER PROTECTIVE EQUIPMENT:** Eyewash; safety shower; protective clothing (long sleeves, coveralls, or other, as appropriate), when needed, to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Light brownish liquid with a slight formaldehyde odor.
BOILING POINT:	Not known
MELTING POINT:	Not known
VAPOR PRESSURE:	Not known
SPECIFIC GRAVITY 25⁰ C /25⁰ C:	~1.15 @25 ° C
VAPOR DENSITY:	Not known
PERCENT VOLATILE (BY WEIGHT):	37%
pH:	Not known
SATURATION IN AIR (PERCENT BY VOLUME):	Not known
EVAPORATION RATE (Butyl Acetate=1):	<1
SOLUBILITY IN WATER:	Soluble

10. STABILITY AND REACTIVITY

STABILITY / THERMAL (CONDITIONS TO AVOID):

This material is stable. Avoid temperatures above 90° C (to avoid decomposition with release of formaldehyde). Avoid Heating in an open vessel (which will release formaldehyde). Thermal decomposition may produce toxic vapors/fumes of Formaldehyde, other organic compounds and oxides of carbon and nitrogen. Hazardous polymerization will not occur. Incompatibility: Strong acids and alkalis (stable between pH 4 and 9)

11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS:

NO TOXICITY INFORMATION AVAILABLE FOR THIS SPECIFIC MATERIAL. THE TOXICOLOGY INFORMATION PROVIDED BELOW IS FOR A RELATED MATERIAL (S) AND/OR COMPONENT (S) OF THIS SPECIFIC MATERIAL.

For a 70% solution of DMDM Hydantoin, Hydroxymethylhydantoin and Dimethylhydantoin, which contains up to 0.09% free Formaldehyde in solution:

ORAL TOXICITY (Rat):	2890 mg/kg
DERMAL TOXICITY (Rabbit):	>2000 mg/kg
INHALATION TOXICITY (Rat –4 hour):	>2 mg/l
EYE IRRITATION (Rabbit):	Mild to moderate irritation that cleared by day 4, post dose
SKIN IRRITATION (Rabbit):	Moderate irritation that cleared by day 7, post dose.
SENSITIZATION (Guinea pig – Buehler test):	Not a sensitizer.

For Benzisothiazolinone:

ORAL TOXICITY (Rat):	1020 mg/kg
EYE IRRITATION (Rabbit):	Severe irritant to corrosive
SENSITIZATION (Guinea pig – Buehler test):	Sensitizer
SENSITIZATION (human: patch test):	Weak Sensitizer

SUBCHRONIC TOXICITY:

For a 53% solution of DMDM Hydantoin, Hydroxymethylhydantoin and Dimethylhydantoin, which contains up to 2% free Formaldehyde in solution:

ORAL TOXICITY (Rat): No systemic toxicity or target organ effects were observed at a dose regimen of 400 mg/kg/day for eight weeks, followed by a dose regimen of 600 mg/kg/day for an additional five weeks.

DERMAL TOXICITY (Rabbit): No systemic or target organ effects were observed at dosage levels of approximately 1000 mg/kg/day.

REPRODUCTIVE/DEVELOPMENTAL:

For a 53% solution of DMDM Hydantoin, Hydroxymethylhydantoin and Dimethylhydantoin, which contains up to 2% free Formaldehyde in solution:

DEVELOPMENTAL TOXICITY (RABBIT – ORAL): No evidence of developmental toxicity effects was observed at an exposure dose of 750 mg/kg/day administered from day 6 through 18 of gestation.

DEVELOPMENTAL TOXICITY (RABBIT – DERMAL): No evidence of developmental toxicity effects was observed at an exposure dose of 1000 mg/kg/day administered from day 7 through 18 of gestation.

GENOTOXICITY:

For a solid mixture of DMDM Hydantoin and Hydroxymethylhydantoin, which contains up to 0.09% free Formaldehyde):

AMES TEST (Four strains Salmonella typhimurium and Escherichia coli:) Not mutagenic with or without metabolic activation.

ECOTOXICITY (Aquatic):

For Benzisothiazolinone:

LC ₅₀ (fish – 96-hour):	5-50 mg/l
EC ₅₀ (Algae –72-hour):	0.37 mg/l

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY:

For Benzisothiazolinone

Fish (96-hour LC ₅₀):	5-50 mg/l
Algae (72-hour):	0.37 mg/l

13. DISPOSAL CONSIDERATION

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product maybe disposed of on site or at an appropriate waste disposal facility.

CONTAINER DISPOSAL: Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

	DOT Shipping Information	IMO Shipping Information	ICAO/IATA	TRANSPORT CANADA
Shipping Name	NOT REGULATED	NOT REGULATED	NOT REGULATED	NOT REGULATED
Hazard Class	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
Packing Group	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
Subsidiary Class	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
UN/ID Number	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
Transport Label Required	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
Packing Instructions Passenger Cargo	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
Max. Net Quantity Passenger Cargo	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
DOT Hazardous Substances	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous
IMDG Page	Non-hazardous	Non-hazardous	Non-hazardous	Non-hazardous

15. REGULATORY INFORMATION

INVENTORY INFORMATION

TSCA substance Control Act (TSCA Inventory) Status: This product is currently listed on the EPA TSCA 8(b) inventory list.

TSCA (Section 12(b) Export Notification): Components present in this product which, if exported, could require either annual or one-time reporting under this regulation are as follows:
Typical Maximum

OSHA Hazardous Communication Standard: Under certain conditions, this material will release Formaldehyde. Occupational exposure to Formaldehyde above specified threshold levels are regulated by the Hazard Communication Standard for Formaldehyde in the Code of Federal Regulations (29 CFR 1910.1048).

EPA Regulation on Pesticides: This product is an EPA FIFRA registered pesticide, which can only be used commercially in the EPA FIFRA registered application(s) noted on the product label. EPA Registered No. 6836-306.

CERCLA (Comprehensive Environmental Response) Communication and Liability Act of 1980 requires notification of the National response Center (Telephone 800-424-8802) in the event of a release of quantities of the following hazardous materials contains in this product, if the release is equal to or greater than the Reportable Quantities (RQs) listed in 40 CFR 302.4:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None Known		

SARA Title III, Section 302/304 (Superfund Amendments and Reauthorization act of 1986) – This act requires emergency planning, including agency notification, for possible release of the following components of this material, based upon the Threshold Planning Quantities (TPQs) and release Reportable Quantities (RQs) listed for the Components in 40 CFR 355:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None Known		

SARA Title III Sections 311/312 – This act requires reporting under the Community Right-To-Know provisions due to the inclusion of the following components of this material in one or more of the five hazard categories listed in 40 CFR 370:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Hazard *) Categories</u>
Benzisothiazolinone	2634-33-5	A

*) The five hazard categories are as follows: **F**=Fire Hazard; **S**=Sudden Release of Pressure; **R**=Reactive; **A**=Immediate (Acute) Health Hazard; **C**=Delayed (Chronic) Health Hazard

SARA Title III Section 313 – This act requires submission of annual reports of the releases of the following components of this material if the threshold reporting quantities, as listed in 40 CFR 372, are met or exceeded.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None Known		

State Right-To-Know Regulations:

California Proposition 65 – Components present in this material, which the State of California has found to cause cancer, birth defects or other reproductive harm are as follows:

As a Cancer Hazard:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Formaldehyde (gas)	50-00-00	Trace

Massachusetts Right-To-Know – The following components of this material are included in the Massachusetts Substance List and are present at or above reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Formaldehyde (gas)	50-00-00	900 ppm

Michigan Critical materials-The following components of this material are included in the Michigan Critical Material List:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None Known		

New Jersey Right-To-Know – The following components of the material are included in the New Jersey Hazardous Substance List and are present at or above reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None Known		

Pennsylvania Right-To-Know – The following components of this material are included in the Pennsylvania Hazardous Substance List and are reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Formaldehyde (gas)	50-00-00	900 ppm

NFPA HAZARD RATING (NATIONAL FIRE PROTECTION ASSOCIATION)

FIRE:	1
HEALTH:	2
REACTIVITY:	0

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