Safety Data Sheet

Vapor Gard®

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03
Canadian Workplace Hazardous Material Information System (WHMIS) 2015
Mexico NOM-018-STPS-2000; NOM-018-STPS-2015
GHS (Globally Harmonized System)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Vapor Gard®

Pure substance/mixture Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Adjuvant.

Uses advised against None known

1.3. Details of the supplier of the safety data sheet

Manufacturer
Miller Chemical and Fertilizer, LLC
120 Radio Rd
Hanover, PA 17331
Tel.: 717-632-8921
Fax.: 717-646-1104

Internet http://www.millerchemical.com

E-mail info@millerchemical.com

1.4. Emergency telephone number

CHEMTREC: +1 800 424 9300 or International 1+703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

OSHA Regulatory Status

Physical Hazards None

Environmental Hazard Aquatic Acute Category 1; H400

Aquatic Chronic Category 1; H410

2.2. Label elements

Symbols/Pictograms

Signal Word Warning

Hazard Statements H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention P273 - Avoid release to the environment

Response P391 - Collect spillage

Disposal P501 - Dispose of contents/ container to an approved waste disposal plant

Additional information Not applicable

Hazards not otherwise classified (HNOC) None known

SECTION 3: Composition/information on ingredients

Pure substance/mixture Mixture

Chemical Name	CAS NUMBER:	Weight-%
Proprietary Pinolene Product	Proprietary	>=60 - <80
Alcohols, C12-16, ethoxylated	68551-12-2	>=1 - <5
Benzenesulfonic acid, 4-C10-14- alkyl derivs., calcium salts	90194-26-6	< 2

Additional information *The exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

General Advice When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye Contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Take off

contaminated clothing and wash before reuse. Get medical attention.

Ingestion DO NOT INDUCE VOMITING. If vomiting occurs naturally, reduce the risk of aspiration by leaning their body forward. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Inhalation Remove to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Aspiration hazard Not considered to be an aspiration hazard based on high kinematic viscosity values.

4.2. Most important symptoms and effects, both acute and delayed None known.

4.3. Indication of any immediate medical attention and special treatment needed Treatment should be symptomatic and supportive. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical. Carbon dioxide (CO2). Water spray (fog). Sand/Earth.

Unsuitable Extinguishing Media
None known.

5.2. Special hazards arising from the substance or mixture
Carbon oxides. Combustion products may be toxic.

5.3. Advice for firefighters

Special protective equipment for firefighters
None known.

Fire-fighting measures
Water mist may be used to cool closed containers. No special fire protection measures are necessary. Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures Keep unauthorized personnel away. In case of fire: Stop leak if safe to do so.

For non-emergency personnel Keep unauthorized personnel away.

For emergency responders Keep unauthorized personnel away. Use personal protection recommended in Section 8.

6.2. Environmental precautions Avoid runoff to waterways and sewers.

6.3. Methods and material for containment and cleaning up Shut off leak if safe to do so. Dike area, recover and reclaim material if possible. This material should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Absorb the liquid on material such as sand, vermiculite, or other inert, noncombustible absorbent and place in a clean, dry container suitable for disposal. Containers should be closed and segregated for later disposal. Scrub the area with detergent and water.

Solids must be disposed of in a permitted waste management facility. Recovered liquid may be reprocessed or incinerated. Incineration must be handled in a permitted facility. Dispose in accordance with local, state and national regulations

6.4. Reference to other sections See Section 8 for exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Wear appropriate personal protective clothing to prevent skin contact.

7.2. Conditions for safe storage, including any incompatibilities For industrial use only. Keep container closed when not in use. Provide adequate ventilation when container are open. Keep at temperatures between 41°F and 104°F (5°C and 40 °C). Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children.

7.3. Specific end use(s) See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits No information available

Biological Limit Values No information available

8.2. Exposure controls

Engineering Measures Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Use exhaust ventilation to keep airborne concentrations below exposure limits. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).
Skin and Body Protection Wear suitable protective clothing.
Hand Protection For operations where prolonged or repeated skin contact may occur, impervious

	gloves should be worn.
Respiratory Protection	In case of inadequate ventilation wear respiratory protection.
Environmental Exposure Controls	Dispose of in accordance with local regulations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	
Physical State	Liquid
Color	Yellow to Amber
Odor	Moderate
pH	6.0 - 7.0 @ 20 °C
Melting point / Freezing point	Not applicable
Boiling Point / Boiling Range	Not determined
Freezing Point	Not determined
Flash Point	> 212°F (100°C)
Evaporation Rate	Not determined
Flammability (solid, gas)	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined (Air = 1)
Density	7.78 - 7.90 lbs/gal @ 68°F (20°C)
Water Solubility	Emulsifies
Partition coefficient	No information available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	2800 – 5250 cP @ 68°F (20°C).
Kinematic viscosity	No data available
Oxidizing Properties	Not applicable
Particle Size	No information available
Specific Gravity	0.93 - 0.95 g/mL @ 68 °F (20 °C)
Percent Volatile	Not determined
VOC Content (%)	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No data available

9.2.2. Other safety characteristics

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	Stable under normal conditions
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	Hazardous polymerization does not occur
10.4. Conditions to avoid	Heat, flames and sparks

10.5. Incompatible materials Strong oxidizing agents

10.6. Hazardous decomposition products Carbon oxides

SECTION 11: Toxicological information

General Information Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Information on Likely Routes of Exposure

Inhalation May cause slight irritation if mist occurs
Not classifiable

Skin Not classifiable

Eyes Not classifiable

Ingestion Large amount of material can cause serious diarrhea. Nausea and vomiting may also occur and possibly abdominal cramping.

Aspiration hazard Not considered to be an aspiration hazard based on high kinematic viscosity values.

11.1. Information on toxicological effects

Proprietary Pinolene Product

Oral LD50	>5050 mg/kg (rat)
Dermal LD50	>5050 mg/kg (rabbit)
Inhalation LC50	>5260 mg/m^3 (rat)
Acute Toxicity	May cause irritation.
Skin Corrosion/Irritation	Causes skin irritation

Alcohols, C12-16, ethoxylated

Serious eye damage/eye irritation	Irreversible effects on the eye, severe eye irritation
Skin Corrosion/Irritation	Normally reversible injuries
Skin Sensitization	Based on available data, the classification criteria are not met.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Not listed as a carcinogen.

Benzenesulfonic acid, 4-C10-14- alkyl derivs., calcium salts

Serious eye damage/eye irritation	Irreversible effects on the eye
Skin Corrosion/Irritation	Causes skin irritation
Skin Sensitization	Based on available data, the classification criteria are not met.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Not listed as a carcinogen.

Vapor Gard®

Acute Toxicity Bridging principle "Substantially similar mixtures".
Not classified.

Respiratory Sensitization	No data available
Serious eye damage/eye irritation	Bridging principle "Substantially similar mixtures". Not classified.
Skin Corrosion/Irritation	Bridging principle "Substantially similar mixtures". Not classified.
Skin Sensitization	No data available
Mutagenicity	No data available
Reproductive Toxicity	No data available
Carcinogenicity	No data available
Specific target organ toxicity - Single exposure	No data available
Specific target organ toxicity - Repeated exposure	No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties	No endocrine disruptors present in concentrations >= 0.1%
11.2.2. Other information	Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Very toxic to aquatic life with long lasting effects

Proprietary Pinolene Product

Aquatic toxicity

Acute toxicity to fish:
- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: 5.7 mg/l
- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: 7.5 mg/l
- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: > 6.5 mg/l

Acute toxicity to aquatic invertebrates:
- Daphnia magna, (OECD guideline 202) 48h EC50: 0.26 mg/l
- Daphnia magna, (EU Method C.2) 48h EC50: ≥ 2.16 - ≤ 9.74 mg/l

Toxicity to algae:
- Pseudokirchnerella subcapitata, (OECD guideline 201) 72h ErC50: 0.24 mg/l, 72h EbC50: 0.18 mg/l, 72h NOEC: 0.1 mg/l.

Toxicity to bacteria:
- Activated sludge (growth inhibition), (OECD guideline 209) EC50: >100 mg/l

Chronic toxicity to aquatic invertebrates:
- Daphnia magna, 21d NOEC: 0.12 mg/l (read-across to close chemical analogue)
- Daphnia magna, 21d NOEC: 0.27 mg/l (read-across to close chemical analogue)

Aqueous spray application onto water surface (giving nominal test water

concentrations 10.7 mg/l Daphnia, 25 mg/l fish) at approximately 1 g/sq.m watersurface caused no evident toxicity in fish. In Daphnia physical entrapment and amaximum of 40% immobilisation was observed.

Toxicity to soil macroorganisms except arthropods:
- Eisenia fetida, 14d LC50: > 1000 mg/kg

Toxicity to honeybees:
- Apis mellifera 48h LD50: > 200 µg per animal (for both ingestion and directcontact)

Toxicity to terrestrial plants
- No adverse effects were observed after spray application of the substance toorange trees, grapevines and cereal crops (wheat and barley).

12.2. Persistence and degradability No data available

12.3. Bioaccumulative potential No data available

12.4. Mobility in soil No data available

12.5. Results of PBT and vPvB assessment No data available

12.6. Endocrine disrupting properties No endocrine disruptors present in concentrations >= 0.1%

12.7. Other Adverse Effects None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal Methods If uncontaminated, recover and reuse as product. If contaminated with other materials, the nature and extend of contamination may require use of specialized disposal methods. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Product residue may remain in empty containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

Mode of Transportation (Road, Water, Air, Rail)

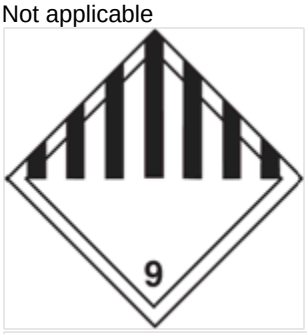
TDG -Canada Not regulated in non-bulk packages (<119 gal/<882 lb)
UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant

DOT Not regulated in non-bulk packages (<119 gal/<882 lb),
, UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant

ADR	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant
RID	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant
ADN	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant
IATA	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant
IMDG/IMO	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant
ICAO	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant

14.1. UN number or ID number	UN3082
14.2. UN proper shipping name	UN3082, ENVIROMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (di-1-p-Menthene)
14.3. Transport hazard class(es)	9
14.4. Packing group	III
14.5. Environmental hazards	Marine Pollutant
14.6. Special precautions for user	Not applicable

14.7. Maritime transport in bulk according to IMO instruments
Not applicable



SECTION 15: Regulatory information

Global Inventories

Pure substance/mixture Mixture

Chemical Name	CAS Number	Canada (DSL)	Mexico	TSCA: United States
Proprietary Pinolene Product	Proprietary	Present (DSL)	Present	Present
Alcohols, C12-16, ethoxylated	68551-12-2	Y	Y	A
Benzenesulfonic acid, 4-C10-14- alkyl derivs., calcium salts	90194-26-6	Present (DSL)	N	N

Y: Complies ; A: Active ; - / N: Exempt / Not Listed

EPA

CWA (Clean Water Act)
Not regulated

CAA (Clean Air Act)
Not regulated

U.S. State Right-to-Know Regulations

Chemical Name	CAS Number	California Proposition 65	Massachusetts	Minnesota	New Jersey	Pennsylvania
Proprietary Pinolene Product	Proprietary	N	N	N	N	N
Alcohols, C12-16, ethoxylated	68551-12-2	N	N	N	N	N
Benzenesulfonic acid, 4-C10-14- alkyl derivs., calcium salts	90194-26-6	N	N	N	N	N

Y: Listed ; N: Not Listed

N/A

CANADA

WHMIS
This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

SECTION 16: Other information

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Reason for Version Revised in entirety. OSHA (Occupational Safety and Health Administration of the US Department of Labor).

Abbreviations and acronyms
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
WHMIS (Workplace Hazardous Materials Information System)
GHS (Globally Harmonized System)
IARC (International Agency for Research on Cancer)
PPE (Personal Protection Equipment)
TWA (Time-Weighted Average)
TLV® (Threshold Limit Value)

STEL (Short Term Exposure Limit)
RQ (Reportable Quantity) (RQ/% in mixture)
DOT (Department of Transportation)
TDG (Transport of Dangerous Goods) Canada
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
ICAO (International Civil Aviation Organization)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet