

SAFETY DATA SHEET

DIBROM



Section 1. Identification

Product identifier : DIBROM
SDS # : 217
Other means of identification : Pest Control Products Act Registration No. 7442
Product type : Liquid.

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

Identified uses
Insecticide.
Uses advised against
Reserved for industrial and professional use only.

Supplier's details : Loveland Products Canada Inc.
789 Donnybrook Drive
Dorchester, Ontario N0L 1G5
Telephone no.: : 1-800-328-4678 (Customer Service)
Email : retail-SDS2@nutrien.com

Emergency telephone number (with hours of operation) : CHEMTREC: 1-800-424-9300
Medical: 1-800-561-8273

Section 2. Hazard identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (oral) - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 1B
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms : 

Signal word : Danger
Hazard statements : Combustible liquid.
Toxic if swallowed.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
Harmful if inhaled.
May cause cancer.

Section 2. Hazard identification

Precautionary statements

- General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
- Response** : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Pest Control Products Act Registration No. 7442

Ingredient name	% (w/w)	CAS number
naled	60 - 65	300-76-5
solvent naphtha (petroleum), heavy aromatic	25 - 30	64742-94-5
naphthalene	< 0.3	91-20-3
1,2,4-trimethylbenzene	< 0.1	95-63-6
DDVP	< 0.3	62-73-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye contact** : CORROSIVE. Begin eye irrigation immediately. All eye exposures require medical evaluation following decontamination. Immediately rinse eyes with large quantities of water or saline for a minimum 30 minutes, longer irrigation time is preferred if possible, due to the chemical reaction that occurs - see Notes to Physician below. If possible, remove contact lenses being careful not to cause additional eye damage. If the initial water supply is insufficient, keep the affected area wet with a moist cloth and transfer the person to the nearest place where rinsing can be continued for the recommended length of time. Call an ambulance for transport to hospital. Continue eye irrigation during transport. For additional advice call the medical emergency number on this safety data sheet or your poison center or doctor.

Section 4. First-aid measures

- Inhalation** : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Get medical attention immediately. Call a poison center or physician. Remove person to fresh air and keep comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : **CORROSIVE.** Causes severe burns. Immediately begin rinsing the affected areas with water. Remove contaminated clothing and shoes. Affected areas should be rinsed for a minimum 30 minutes, longer irrigation time is preferred if possible, due to the chemical reactions that occur. Luke-warm water is recommended for continued irrigation to prevent hypothermia. Conscious persons without breathing difficulties may benefit from prolonged irrigation in a fixed shower or bathing facility prior to hospital transport. Call an ambulance for transport to hospital. Continue skin irrigation during transport. For additional advice call the medical emergency number on this safety data sheet or your poison center or doctor. Clean shoes thoroughly before reuse. Wash clothing before reuse.
- Ingestion** : Get medical attention immediately. For additional advice call the medical emergency number on this SDS or your poison center or doctor. Do not induce vomiting unless directed to do so by medical personnel. Aspiration hazard if swallowed. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Corrosive to eyes. Causes serious eye damage.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes severe burns.
- Ingestion** : Toxic if swallowed. May be fatal if swallowed and enters airways. Naled is a cholinesterase inhibitor. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, runny nose and eyes. This may progress to muscle twitching, weakness, tremor, incoordination, vomiting, abdominal cramps and diarrhea in more serious poisonings. A life-threatening poisoning is signified by loss of consciousness, incontinence, convulsions and respiratory depression with a secondary cardiovascular component.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
irritation, coughing
headache, dizziness/vertigo
shortness of breath/breathing difficulty
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Section 4. First-aid measures

- Ingestion** : Adverse symptoms may include the following:
headache, dizziness/vertigo
nausea or vomiting
muscle weakness
stomach pains, diarrhea

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically and supportively. Contact poison treatment specialist immediately if ingested or inhaled. If exposed, plasma and red blood cell cholinesterase tests may indicate degree of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as pralidoxime chloride, may be therapeutic if used early; however, use only in conjunction with atropine. In cases of severe acute poisoning, use antidotes immediately after establishing an open airway and respiration. With oral exposure, the decision of whether to induce vomiting or not should be made by an attending physician. NOTE: Product contains a petroleum distillate solvent. Vomiting may cause aspiration pneumonia.
- Specific treatments** : Improved outcome requires prolonged rinsing or soaking with water in order to extract corrosive ions that have penetrated through the stratum corneum. Expert opinion indicates an extended duration of rinsing is required to remove corrosive chemicals - 60 minutes for strong alkalis, and 30 minutes for other corrosive substances. Water should be maintained at a comfortable temperature. It may be necessary to delay transport to emergency care facilities in order to ensure 30 or 60 minutes of rinsing time. However, transporting the patient may be necessary depending on the condition of the patient or the availability of a water supply. If transport is necessary, rinsing the affected area should continue, if possible, during transport.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Decontamination measures may be necessary. Personnel and equipment must be checked and decontaminated prior to leaving the area.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Combustible liquid and vapor. Runoff to sewer may create fire or explosion hazard. Harmful if inhaled. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Emits toxic fumes when heated to decomposition.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
halogenated compounds

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Contain and collect the water used to fight the fire for later treatment and disposal. Do not direct water into the container. Water may cause boil over and spread burning liquid.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused adverse impacts (sewers, waterways, soil or air). Apply this product only as specified on the label. This product is not for use in aquatic settings.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Do not use a vacuum truck to transfer this material.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Read label before use. Apply this product only as specified on the label. Do not handle until all safety precautions have been read and understood. Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when

Section 7. Handling and storage

not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. May be corrosive to metals.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
naled	<p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 3 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2016). Absorbed through skin. TWA: 3 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 5/2018). TWA: 3 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2020). Absorbed through skin. Skin sensitizer. TWA: 0.1 mg/m³ 8 hours. Form: Inhalable fraction and vapor</p> <p>CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 0.1 mg/m³ 8 hours. Form: Inhalable fraction and vapour.</p> <p>British Columbia Provincial: (Canada, 1/2020). Absorbed through skin. Skin sensitizer. TWA: 0.1 mg/m³ 8 hours. Form: Inhalable vapour and aerosol</p> <p>CA Alberta Provincial: (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 0.1 mg/m³ 8 hours.</p> <p>CA Quebec Provincial. (Canada, 7/2019). Absorbed through skin. TWA: 3 mg/m³ 8 hours.</p> <p>Saskatchewan Provincial: (Canada, 7/2013). Absorbed through skin. Skin sensitizer. STEL: 0.3 mg/m³ 15 minutes. TWA: 0.1 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2020). Absorbed</p>
naphthalene	

Section 8. Exposure controls/personal protection

1,2,4-trimethylbenzene

through skin.

TWA: 10 ppm 8 hours.

TWA: 52 mg/m³ 8 hours.

OSHA PEL 1989 (United States, 3/1989).

TWA: 10 ppm 8 hours.

TWA: 50 mg/m³ 8 hours.

STEL: 15 ppm 15 minutes.

STEL: 75 mg/m³ 15 minutes.

NIOSH REL (United States, 10/2016).

TWA: 10 ppm 10 hours.

TWA: 50 mg/m³ 10 hours.

STEL: 15 ppm 15 minutes.

STEL: 75 mg/m³ 15 minutes.

OSHA PEL (United States, 5/2018).

TWA: 10 ppm 8 hours.

TWA: 50 mg/m³ 8 hours.

CA Alberta Provincial:

(Canada, 6/2018). Absorbed through skin.

15 min OEL: 15 ppm 15 minutes.

8 hrs OEL: 10 ppm 8 hours.

8 hrs OEL: 52 mg/m³ 8 hours.

15 min OEL: 79 mg/m³ 15 minutes.

British Columbia Provincial: (Canada, 1/2020).

Absorbed through skin.

TWA: 10 ppm 8 hours.

CA Ontario Provincial (Canada, 6/2019). Absorbed through skin.

TWA: 10 ppm 8 hours.

CA Quebec Provincial. (Canada, 7/2019).

TWAEV: 10 ppm 8 hours.

TWAEV: 52 mg/m³ 8 hours.

STEV: 15 ppm 15 minutes.

STEV: 79 mg/m³ 15 minutes.

Saskatchewan Provincial: (Canada, 7/2013).

Absorbed through skin.

STEL: 15 ppm 15 minutes.

TWA: 10 ppm 8 hours.

ACGIH TLV (United States, 3/2020).

TWA: 25 ppm 8 hours.

TWA: 123 mg/m³ 8 hours.

OSHA PEL 1989 (United States, 3/1989).

TWA: 25 ppm 8 hours.

TWA: 125 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 25 ppm 10 hours.

TWA: 125 mg/m³ 10 hours.

CA Alberta Provincial:

(Canada, 6/2018).

8 hrs OEL: 123 mg/m³ 8 hours.

8 hrs OEL: 25 ppm 8 hours.

British Columbia Provincial: (Canada, 1/2020).

TWA: 25 ppm 8 hours.

CA Quebec Provincial. (Canada, 7/2019).

TWAEV: 25 ppm 8 hours.

TWAEV: 123 mg/m³ 8 hours.

CA Ontario Provincial (Canada, 6/2019).

TWA: 25 ppm 8 hours.

Section 8. Exposure controls/personal protection

DDVP

Saskatchewan Provincial: (Canada, 7/2013).

STEL: 30 ppm 15 minutes.

TWA: 25 ppm 8 hours.

ACGIH TLV (United States, 3/2020). Absorbed through skin. Skin sensitizer.

TWA: 0.1 mg/m³ 8 hours. Form: Inhalable fraction and vapor

OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.

TWA: 1 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016). Absorbed through skin.

TWA: 1 mg/m³ 10 hours.

OSHA PEL (United States, 5/2018). Absorbed through skin.

TWA: 1 mg/m³ 8 hours.

Saskatchewan Provincial: (Canada, 7/2013).

Absorbed through skin. Skin sensitizer.

STEL: 0.3 mg/m³ 15 minutes. Form: Inhalable fraction and vapour

TWA: 0.1 mg/m³ 8 hours. Form: Inhalable fraction and vapour

CA Ontario Provincial (Canada, 6/2019). Absorbed through skin.

TWA: 0.1 mg/m³ 8 hours. Form: Inhalable fraction and vapour.

British Columbia Provincial: (Canada, 1/2020).

Absorbed through skin. Skin sensitizer.

TWA: 0.1 mg/m³ 8 hours. Form: Inhalable vapour and aerosol

CA Alberta Provincial:

(Canada, 6/2018). Absorbed through skin.

8 hrs OEL: 0.1 mg/m³ 8 hours.

CA Quebec Provincial. (Canada, 7/2019). Absorbed through skin.

TWAEV: 0.1 ppm 8 hours.

TWAEV: 0.9 mg/m³ 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Ensure any process release discharges in a controlled manner to an approved safe location.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Contact your personal protective equipment manufacturer to verify the compatibility of the equipment for the intended purpose.

General information

: Do not handle until all safety precautions have been read and understood.

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 requirements is in place.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Off-white / Straw.
- Odor** : Pungent.
- Odor threshold** : Not available.
- pH** : 3 [Conc. (% w/w): 5%]
- Melting point/freezing point** : 15°C (59°F)
- Boiling point, initial boiling point, and boiling range** : 160°C (320°F)
- Flash point** : Closed cup: 63°C (145.4°F)
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Lower: 0.7%
Upper: 5%

Section 9. Physical and chemical properties and safety characteristics

Vapor pressure	: Not available.
Relative vapor density	: Not available.
Relative density	: Not available.
Density	: 0.45 to 1.42 g/cm ³
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
<u>Particle characteristics</u>	
Median particle size	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Reacts violently with bases.
Conditions to avoid	: Contact with incompatible substances. Keep away from heat.
Incompatible materials	: Strong oxidizing materials, strong acids, hypochlorites, halogenated compounds. Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
DIBROM	LC50 Inhalation Dusts and mists	Rat	1.51 mg/l	4 hours
	LD50 Dermal	Rabbit	5050 mg/kg	-
	LD50 Oral	Rat	235 mg/kg	-
naled	LD50 Dermal	Rabbit	1100 mg/kg	-
	LD50 Dermal	Rat	800 mg/kg	-
	LD50 Oral	Rat	92 mg/kg	-
naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
1,2,4-trimethylbenzene	LD50 Oral	Rat	5 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	15 mg/m ³	4 hours
	LD50 Dermal	Rabbit	107 mg/kg	-
	LD50 Dermal	Rat	0.75 mg/kg	-
DDVP	LD50 Oral	Rat	17 mg/kg	-

Section 11. Toxicological information

Conclusion/Summary : Toxic if swallowed. Harmful if inhaled.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
naled	Skin - Severe irritant	Rabbit	-	24 hours 500 mg	-
solvent naphtha (petroleum), heavy aromatic naphthalene	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-
	Skin - Mild irritant	Rabbit	-	495 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 0.05 MI	-

Conclusion/Summary

Skin : Corrosive to the skin. Causes burns.

Eyes : Corrosive to eyes. Causes serious eye damage.

Respiratory : May cause respiratory irritation.

Sensitization

Not available.

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Not available.

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Not available.

Conclusion/Summary : May cause cancer.

Classification

Product/ingredient name	IARC	NTP	ACGIH
naled naphthalene	- 2B	- Reasonably anticipated to be a human carcinogen.	A4 A3
DDVP	2B	-	A4

Reproductive toxicity

Not available.

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Not available.

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
dichlorvos (ISO)	Category 1	-	-

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
DDVP	Category 1	-	-

Aspiration hazard

Product/ingredient name	Result
DIBROM solvent naphtha (petroleum), heavy aromatic	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Corrosive to eyes. Causes serious eye damage.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes severe burns.
- Ingestion** : Toxic if swallowed. May be fatal if swallowed and enters airways. Naled is a cholinesterase inhibitor. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, runny nose and eyes. This may progress to muscle twitching, weakness, tremor, incoordination, vomiting, abdominal cramps and diarrhea in more serious poisonings. A life-threatening poisoning is signified by loss of consciousness, incontinence, convulsions and respiratory depression with a secondary cardiovascular component.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
irritation, coughing
headache, dizziness/vertigo
shortness of breath/breathing difficulty
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
headache, dizziness/vertigo
nausea or vomiting
muscle weakness
stomach pains, diarrhea

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : See below.

Long term exposure

- Potential immediate effects** : See above.
- Potential delayed effects** : Not available.

Section 11. Toxicological information

Potential chronic health effects

Not available.

- Conclusion/Summary** : Adverse effects are typically the result of acute overexposure. These effects may be long term or permanent in nature.
- General** : Repeated or prolonged overexposure may result in chronic health effects.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
DIBROM	235	5050	N/A	N/A	1.51
naled	92	800	N/A	N/A	0.05
naphthalene	490	N/A	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	N/A
DDVP	100	50	N/A	N/A	0.05

Other information : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
naled	Acute EC50 0.3 ppb Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.14 ppb Fresh water	Crustaceans - Gammarus lacustris	48 hours
	Acute LC50 49 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.098 ppb Fresh water	Daphnia - Daphnia magna	21 days

Conclusion/Summary : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Apply this product only as specified on the label.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
naled	1.38	-	low
solvent naphtha (petroleum), heavy aromatic	2.8 to 6.5	99 to 5780	high
naphthalene	3.4	36.5 to 168	low
1,2,4-trimethylbenzene	3.63	243	low
DDVP	1.43	0.5	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : Do not allow to enter groundwater, surface water or drains. Do not apply where run-off is likely to occur. May cause long-term adverse effects in the environment.

Section 13. Disposal considerations

Disposal methods : Read label before use. Apply this product only as specified on the label. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Triple rinse containers with water and add the rinse water to the spray tank. Destroy container to prevent reuse. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

	TDG	DOT	IMDG	IATA
UN number	UN2922	UN2922	UN2922	UN2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (naled)	CORROSIVE LIQUID, TOXIC, N.O.S. (naled)	CORROSIVE LIQUID, TOXIC, N.O.S. (naled)	CORROSIVE LIQUID, TOXIC, N.O.S. (naled)
Transport hazard class(es)	8 (6.1) 	8 (6.1) 	8 (6.1) 	8 (6.1)
Packing group	III	III	III	III
Marine pollutant	Yes.	Yes.	Yes.	Yes.

Additional information

- TDG** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.26-2.36 (Class 6), 2.7 (Marine pollutant mark).
The marine pollutant mark is not required when transported by road or rail.
- DOT** : **This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.**
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: phosphorus (total); heavy aromatic solvent naphtha; naphthalene

CEPA Toxic substances : The following components are listed: naphthalene

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

List name	Ingredient name	Status
POPs - Annex 3	naphthalene	Listed

Inventory list

Australia : Not determined.

Canada : Not determined.

China : Not determined.

Europe : All components are listed or exempted.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

United States : Not determined.

Viet Nam : All components are listed or exempted.

U.S. Federal regulations : **TSCA 8(a) PAIR**: naphthalene
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: naphthalene
Clean Water Act (CWA) 311: naled; naphthalene; dichlorvos (ISO)

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

Section 15. Regulatory information

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
DDVP	< 0.3	Yes.	1000	85.7	10	0.86

SARA 304 RQ : 3387.5 lbs / 1537.9 kg [434.5 gal / 1644.9 L]

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 4
 ACUTE TOXICITY (oral) - Category 3
 ACUTE TOXICITY (inhalation) - Category 4
 SKIN CORROSION - Category 1
 SERIOUS EYE DAMAGE - Category 1
 CARCINOGENICITY - Category 1B
 ASPIRATION HAZARD - Category 1

Composition/information on ingredients

Name	%	Classification
naled	60 - 65	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
solvent naphtha (petroleum), heavy aromatic	25 - 30	FLAMMABLE LIQUIDS - Category 4 ASPIRATION HAZARD - Category 1
naphthalene	< 0.3	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2
1,2,4-trimethylbenzene	< 0.1	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4
DDVP	< 0.3	ACUTE TOXICITY (oral) - Category 2 ACUTE TOXICITY (dermal) - Category 1 ACUTE TOXICITY (inhalation) - Category 1 CARCINOGENICITY - Category 2

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	naled	300-76-5	60 - 65
	naphthalene	91-20-3	< 0.3
	DDVP	62-73-7	< 0.3
Supplier notification	naled	300-76-5	60 - 65
	naphthalene	91-20-3	< 0.3
	DDVP	62-73-7	< 0.3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: NALED; DIMETHYL-1,2-DIBROMO-2,2-DICHLOROETHYL PHOSPHATE; DIBROM; NAPHTHALENE

Section 15. Regulatory information

- New York** : The following components are listed: Naled; Dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate; Naphthalene
- New Jersey** : The following components are listed: DIMETHYL-1,2-DIBROMO-2,2-DICHLOROETHYL PHOSPHATE; NALED; PHOSPHORIC ACID, 1,2-DIBROMO-2,2-DICHLOROETHYL DIMETHYL ESTER; DIBROM; NAPHTHALENE; TAR CAMPHOR; MOTH FLAKES; DICHLORVOS; PHOSPHORIC ACID, 2,2-DICHLOROETHENYL DIMETHYL ESTER
- Pennsylvania** : The following components are listed: PHOSPHORIC ACID, 1,2-DIBROMO-2,2-DICHLOROETHYL DIMETHYL ESTER; NAPHTHALENE

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Naphthalene and DDVP, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
naphthalene dichlorvos (DDVP)	Yes. Yes.	- -

Section 16. Other information

History

Date of issue/Date of revision : 2/22/2022

Date of previous issue : No previous validation

Version : 1

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- HPR = Hazardous Products Regulations
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 1B ASPIRATION HAZARD - Category 1	On basis of test data Weight of evidence Weight of evidence Weight of evidence Weight of evidence Weight of evidence Weight of evidence

📌 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

Supply chain partners must ensure they pass this SDS, and all other relevant safety information to their customers.

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