



1,4SHIP®
SAFETY DATA SHEET

Complies with
OSHA Hazard Communication Standard 29 CFR 1910.1200

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

- 1.1 Product Label Name: 1,4SHIP®
Substance: 1,4-Dimethylnaphthalene
CAS No.: 571-58-4
EC No.: 209-335-9
- 1.2 Use of the substance: Potato dormancy enhancer
- 1.3 Details of the supplier of the Safety Data Sheet
- Company Identification: 1,4GROUP, Inc.
P.O. Box 860
Meridian, ID 83680-0860, USA
Tel: 208-887-9766
- 1.4 Emergency telephone: USA: 1-800-633-8253 (PERS)

2. HAZARDS IDENTIFICATION

- 2.1 Classification of the substance
- 2.1.1 Classification according to GHS guidance and 29 CFR 1910.1200 Appendix A and B
Eye Irritation 2B
- 2.2 Label elements
- 2.2.1 Labelling according to US 29 CFR 1910.1200 and GHS
- Hazard Pictograms: None
- Signal word: Warning
- Hazard statements: Causes eye irritation
- Precautionary statements: Prevention:
Wash exposed areas thoroughly after handling

Response:

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical attention.

2.3 Unclassified hazards: None known

2.4 Percentage of ingredients with unknown toxicity: 0%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS number	Weight %
1,4-Dimethylnaphthalene	571-58-4	63.8%

Balance consists of non-hazardous substances

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water. Get medical aid.

Eye contact: Hold eyelids open and flush with a steady gentle stream of water for at least 15 minutes. If wearing contact lenses, after the first 5 minutes remove them and then continue rinsing. Get medical attention.

Ingestion: Call a poison control center or physician for treatment advice. Do not induce vomiting or give anything by mouth to an unconscious person. If conscious, promptly drink a large quantity of milk, egg whites, or gelatin. If these are unavailable, drink a large volume of water.

4.2 Most important symptoms and effects, both acute and delayed Causes eye irritation.

4.3 Immediate medical attention required: Symptomatic treatment is advised. There are no medical conditions that are known to be aggravated by exposure to this product. No immediate medical attention required if exposed.

5. FIRE FIGHTING MEASURES

- 5.1 Extinguishing media: Water spray, carbon dioxide, or dry chemical. In case of fire, cool endangered containers with water spray to avoid bursting.
- 5.2 Specific hazards arising from fire: Extremely Flammable. Container may explode by heating. Do not expose to temperatures above 120°F. Will support combustion and decompose under fire conditions to form toxic organic materials and toxic/corrosive oxides of carbon and nitrogen. Irritating gases may be generated by the fire.
- 5.3 Special fire-fighting procedures: As in any fire, prevent exposure to smoke, fumes, and products of combustion. Use appropriate equipment to protect personnel from bursting containers. Evacuate non-essential personnel.
- 5.4 Protective equipment for fire fighters: Fire fighter should wear full face, self-contained breathing apparatus and impervious clothing.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions: Immediately evacuate the area and provide maximum ventilation. Remove all ignition sources. Unprotected personnel should move upwind of the spill. Only personnel with appropriate respiratory and skin protection should be permitted in the area.
- 6.2 Environmental precautions: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover or absorb spilled material on sawdust or vermiculite and place in closed containers for disposal. After all visible traces have been removed, wash the affected area with detergent then thoroughly wet vacuum the area.
- 6.3 Methods for cleaning up: Dispose of contaminated sawdust or vermiculite in a hazardous waste management facility. Care must be taken when disposing of the cleanup materials and containers to prevent environmental contamination. In the United States, the disposal should be in compliance with the Clean Water Act, the Clean Air Act, and any other relevant federal, state, or local laws and regulations.

7. HANDLING AND STORAGE

- Handling: Applicators and other handlers must wear long-sleeved shirts, trousers, shoes plus socks, and chemical resistant gloves (such as Nitrile or Butyl).

For re-entry into treated areas during application and prior to ventilation or settling of aerosol fog, workers must additionally wear coveralls; face sealing goggles, unless a full-face respirator is worn; and a respirator with an organic vapor-removing cartridge with a pre-filter approved for pesticides or a canister approved for pesticides or a respirator with an organic vapor (OV) cartridge or canister with any R, P or HE pre-filter. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Storage:

Store in areas that are cool, dry and well-ventilated. Do not store with strong oxidizers. Store in original packs/containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls:	Provide adequate ventilation
Exposure limits:	None established
Hand protection:	Chemical resistant gloves (such as Nitrile or Butyl)
Eye protection:	Chemical goggles, face shield or full face respirator
Environmental exposure control:	Air (96/62/EC), Water (2000/60/EC)
Acute Toxicity:	Has low acute inhalation toxicity.
Other information:	Do not eat, drink, or smoke when handling this product. Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid @ 21°C
Color:	Pale yellow @ 21°C
Odor:	Petroleum distillate @ 21°C
Odor threshold:	Not available
Boiling point:	264°C @ 744 mmHg
Melting point:	5°C
Relative density:	(H ₂ O=1) 1.014 (25°C/25°C)
Vapor pressure: (Air=1)	1.88 x 10 ⁻² mm of mercury @ 25°C(2.5 Pa @ 25°C) 4.85 x 10 ⁻² mm of mercury @ 35°C(4.85 Pa @ 35°C) 8.75 x 10 ⁻² mm of mercury @ 45°C(11.7 Pa @ 45°C)
Flash point:	-134°F
Flammability:	Extremely Flammable. Will support combustion and decompose under fire conditions.

Explosive properties:	Contents under pressure. Do not use near fire, sparks, or flame. Do not puncture or incinerate container. Exposure to temperatures above 120°F may cause container to burst.
Explosion limits:	Not explosive @ 25°C @ minimum drop height of 32.25 inches
Oxidizing properties:	Not oxidizing
Solubility (water):	Water = 5.1 ppm @ 25 ± 1°C
Solubility (organic solvents):	Miscible with most organic solvents
pH-value:	5.9
Evaporation rate:	Not available
Viscosity:	6 cps @ 25°C
Decomposition temperature:	Not available
Auto-ignition temperature:	Not available
Partition coefficient (n-octanol/water):	Not available

10. STABILITY AND REACTIVITY

Reactivity:	Stable at ambient temperature and pressure.
Stability:	Stable for one year at ambient temperature.
Possibility of hazardous reactions:	Will not occur
Conditions to avoid:	Keep away from heat and sources of ignition.
Incompatible materials:	Strong oxidizing agents
Hazardous decomposition products:	Carbon monoxide, carbon dioxide, and nitrogen oxides may form during combustion

11. TOXICOLOGICAL INFORMATION

Acute toxicity - oral:	LD ₅₀ rat = 2730 mg/kg bw
Acute toxicity - dermal:	LD ₅₀ rabbit >2000 mg/kg bw
Acute toxicity - inhalation:	LC ₅₀ rat (4 hr) > 4.2 mg/L
Skin irritation:	Irritating to skin (rabbit); can cause moderate irritation
Eye irritation:	Irritating to eyes (rabbit); can cause moderate irritation.
Skin sensitization:	Not sensitizing (guinea pigs and LLN Assay)
Hypersensitivity:	Did not cause hypersensitivity reaction (guinea pigs)
Hypersensitivity Incidents:	None
Mutagenicity:	Non-mutagenic in the Vivo Mouse Micronucleus Assay and Vivo Rat Unscheduled DNA Synthesis Assay; Non-mutagenic in two Ames Tests
Carcinogenicity:	Not listed as a carcinogen by IARC, NTP, ACGIH, OSHA, or EPA

Carcinogenicity:	Two year rat carcinogenicity bioassay – not carcinogenic
Teratogenicity:	Not teratogenic in a rabbit teratology study
Reproductive toxicity	Did not demonstrate reproductive toxicity in rat reproduction toxicity study

12. ECOLOGICAL INFORMATION

Persistence and degradability:	Readily biodegradable (MITI Test)
Ecotoxicity:	LC ₅₀ , Rainbow trout test: 0.67 mg/L LC ₅₀ , 96 hr. Fathead minnow test: 1.4 mg/L EC ₅₀ , Daphnia test: 0.56 mg/L ED ₅₀ , Bobwhite: >2000 mg/kg

13. DISPOSAL CONSIDERATIONS

Product:	Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container:	Do not puncture or incinerate! Nonrefillable container. If empty, place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions.

14. TRANSPORT INFORMATION

U.S. Department of Transportation:	Considered hazardous by DOT Title 49 regulations, but accepted in limited quantities by both ground and air.
United Nations No:	1950
UN proper shipping name:	ADR/RID (Road/Rail)IMDG (sea)/ICAO-TI/ DGR(Sea) Aerosol, flammable
Transport hazard class:	2.1
Marine pollutant:	Yes. Toxic to aquatic organisms.
IATA regulations:	UN1950, Aerosol, Flammable, 2.1, LQ (Y203)

15. REGULATORY INFORMATION

15.1 Country specific

Notification status:

Since 1995, 1,4-dimethylnaphthalene has been registered as a biochemical for application to stored potatoes to inhibit sprouting. In 2011 registration was obtained in Canada for use on potatoes.

16. OTHER INFORMATION

Date of preparation: June 17, 2015

Revision date: August 3, 2015, February 4, 2016, April 1, 2016

1,4SHIP® is used as an aerosol to enhance the dormancy of potatoes during the storage phase.

1,4SHIP® must not be applied to potatoes in the field.

Do not use on seed potatoes.

Do not allow vapors to come in contact with storage areas used for seed potatoes within 60 days of their planting.