



Safety Data Sheet

NU-FILM P®

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)

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

1.1. Product identifier

Product name NU-FILM P®
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 This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Classification Aquatic Acute Category 1; H400
Aquatic Chronic Category 1; H410

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2.2. Label elements

Symbols/Pictograms



Signal Word

Warning

Hazard Statements

Very toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

Avoid release to the environment

Response

Collect spillage

Disposal

Dispose of contents/containers in accordance with local regulations

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	80 - 100
Ethoxylated Tallow Amine	61791-26-2	1 - 3

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

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medical attention.

Inhalation

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

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. Wear self-contained breathing apparatus and protective suit.

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. Avoid dust formation. Ensure adequate ventilation. Use personal protection recommended in Section 8. 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.

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. Minimize dust generation and accumulation. Do not breathe dust. 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

PNEC (Predicted No Effect Concentration) Predicted No-Effect Concentration (PNEC) values:
PNEC Freshwater: 2 µg/l
PNEC Intermittent: 2.4 µg/l
PNEC STP: 1000 µg/l
PNEC Freshwater Sediment: 1.26 mg/kg dw
PNEC Soil: 1 mg/kg dw
PNEC Oral: 33.3 mg/kg

DNEL (Derived No Effect Level) Worker Derived No-Effect Level (DNEL) values:
Inhalation: 2493 mg/m³ (acute, systemic), 12.2 mg/m³ (chronic, systemic)
Dermal: 1526 mg/kg (acute, systemic), 3.47 mg/kg/day (chronic, systemic)

General population Derived No-Effect Level (DNEL) values:
- Inhalation: 1772 mg/m³ (acute, systemic), 3.63 mg/ m³ (chronic, systemic)
- Dermal: 727 mg/kg (acute, systemic), 2.08 mg/kg/day (chronic, systemic)

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.

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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	Red to Reddish amber
Odor	Terpenic
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	>200 °F
Evaporation Rate	Not determined
Flammability (solid, gas)	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Density	No data available
Water Solubility	Insoluble Emulsifies
Partition coefficient	No information available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	300 - 800 cps. @ 20°C.
Kinematic viscosity	No data available
Oxidizing Properties	Not applicable
Particle Size	No information available
Specific Gravity	0.91 - 0.93 g/mL @ 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

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- 10.3. Possibility of hazardous reactions** Hazardous polymerization does not occur
- 10.4. Conditions to avoid** Strong oxidizing agents Heat, flames and sparks
- 10.5. Incompatible materials** None known
- 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** Product is not irritating to the skin or eyes
- Eyes** Product is not irritating to the skin or eyes
- Ingestion** Large amount of material can cause serious diarrhea. Nausea and vomiting may also occur and possibly abdominal cramping.

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/m³ (rat)
- Acute Toxicity** May cause irritation.

Ethoxylated Tallow Amine

- Oral LD50** 620 mg/kg (rat)
- Dermal LD50** > 10000 mg/kg (rat)
- Serious eye damage/eye irritation** Risk of serious damage to eyes
- Skin Corrosion/Irritation** Irritating to skin.
- Carcinogenicity** The product does not contain any component present at concentration greater than or equal to 0.1% listed as carcinogen/possibly carcinogen for NTP, IARC and OSHA.
- Acute Toxicity** Not classified. Based on available data, the classification criteria are not met.
- Respiratory Sensitization** Not classified. Based on available data, the classification criteria are not met.
- Serious eye damage/eye irritation** Not classified. Product was tested.
- Skin Corrosion/Irritation** Not classified. Product was tested.
- Skin Sensitization** Not classified. Product was tested.
- Mutagenicity** Not classified. Based on available data, the classification criteria are not met.

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Reproductive Toxicity Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity - Single exposure Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity - Repeated exposure Not classified. Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties No endocrine disruptors present in concentrations $\geq 0.1\%$

11.2.2. Other information Not applicable

SECTION 12: Ecological information

12.1. Toxicity Proprietary Pinolene Product Aquatic toxicity

Very toxic to aquatic life with long lasting effects

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 a maximum 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 direct contact)

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	Toxicity to terrestrial plants - No adverse effects were observed after spray application of the substance to orange trees, grapevines and cereal crops (wheat and barley).
Ethoxylated Tallow Amine	
Aquatic toxicity	This material is toxic to aquatic life.
Persistence / Degradability	Expected to be biodegradable
Bioaccumulative potential:	Bioconcentration potential in aquatic organisms is moderate.
LC50	48-Hour, <i>Daphnia pulex</i> : 2.35mg/L.
96-Hour LC50	Blue gills: 1.3 mg/L
12.2. Persistence and degradability	Not readily biodegradable 8% degradation over 28 days in OECD 301D Closed Bottle test. Not rapidly biodegraded in a test for inherent biodegradability (3% degradation over 28 days, OECD 301B method using acclimated, mixed soil/sludge inoculum). Slow biodegradation predicted, based on chemical analogy to ubiquitous phytoterpenes.
12.3. Bioaccumulative potential	Not determined experimentally.
Bioconcentration factor (BCF)	QSAR calculations of BCF based on chemical structure and physical properties give BCF values of 175 (based on QSAR-estimated log Kow, 9.29) and 6295 (based on log Kow 6.5). BCF indicator for bioaccumulation is concluded to be >2000 but <5000.
12.4. Mobility in soil	KOC: >28840 (Log KOC: >4.46); HPLC estimation method Note: Proprietary pinolene are expected to bind strongly to organic matter.
12.5. Results of PBT and vPvB assessment	This substance does not meet the criteria for classification as PBT or vPvB
12.6. Endocrine disrupting properties	No endocrine disruptors present in concentrations $\geq 0.1\%$
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 extent 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

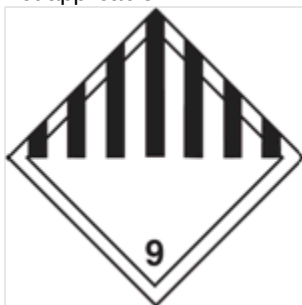
Not regulated in non-bulk packages (<119 gal/<882 lb)

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DOT	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Di-1-p menthene), 9, PG III, Marine Pollutant 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



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Page 10 of 11**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
Ethoxylated Tallow Amine	61791-26-2	Present (DSL)	Present	Present

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
Ethoxylated Tallow Amine	61791-26-2	N	N	N	N	N

Y: Listed ; N: Not Listed

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**Prepared by**Miller Chemical and Fertilizer, A Huber Company, Global Regulatory Affairs
regulatory.affairs@huber.com**Printer ID:**

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Reason for Version

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)

MILLER CHEMICAL

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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