



Specimen Label for: EXIT

# EXIT<sup>®</sup>

## ACTIVATOR ADJUVANT

**Designed for Water and Oil Soluble Agrochemicals**

**PRINCIPAL FUNCTIONING AGENTS:**

Methyl Esters of Fatty Acids, N, N-Bis 2-(omega-hydroxypolyoxyethylene) ethyl) alkylamine, Tall oil fatty acids . 100%

Proprietary Protected Technology  
Calif. Reg. No. 72- 50014-AA

KEEP OUT OF REACH OF CHILDREN

### CAUTION

#### PRECAUTIONARY STATEMENTS

**Hazards to Human and Domestic Animals**

Avoid contact with skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Wear chemical-resistant gloves, long-sleeved shirt and long pants, and shoes plus socks. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

**First-Aid**

IF ON SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**Manufactured By**  
**MILLER CHEMICAL & FERTILIZER CORPORATION**  
P.O. Box 333  
Hanover, Pennsylvania 17331

**Net Contents: 1 Gallon Liquid**

#### GENERAL INFORMATION

**Exit** is effective with both water soluble and water insoluble agrochemicals. It is designed to increase deposition and surface activity of pesticides on the target crop, which allows for greater absorption and translocation over time under different environmental conditions. **Exit** will not foam or clog nozzles. It has been proven effective when applied by any aircraft or ground sprayer.

## DIRECTIONS FOR USE

**Exit** may be used with all products registered for: Agricultural, Forestry, Ornamental, Industrial Vegetation and Non-Cropland uses.

**GENERAL USE:** **Exit** may be used in applications that recommend the use of non-ionic adjuvants, methylated seed oils, crop oil concentrates, esterified seed oils, and spreader stickers on all food, turf and ornamental crops.

**GROUND:** Dosage per 100 gallons of spray solution (dilute).

Fungicides, Insecticides, Miticides	. . .4 oz to 1 quart
Plant Growth Regulators, Foliar Nutrients	. . .4 oz to 1 pint
Herbicides, Defoliant, Desiccants	1 to 4 quarts per 100 gallons of water (¼ % to 1% V/V)

## AERIAL APPLICATIONS OR CONCENTRATE GROUND SPRAYS UNDER 20 GALLONS PER

**ACRE:** For maximum effect use 4 to 16 ounces per acre. For general application rates use ½ % to 1 % V/V (2 to 4 quarts per 100 gallons of water).

**TO REPLACE CROP OILS WITH HERBICIDES:** Use 12 ounces to 2 pints per acre

## MIXING

Fill spray tank one-half full with water and begin agitation. Add pesticides as directed by label and continue filling. Add **Exit** last and continue agitation.

Use this product in accordance with good agronomic practices, which include utilizing proven spray equipment set for proper coverage. Do not make applications when temperatures are too hot. Applications should be made at temperature levels and when other environmental conditions in your area are such that your experience indicates the application will be compatible and will accomplish the desired result.

**ENVIRONMENTAL HAZARDS:** This product is not for aquatic use. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**PHYTOTOXICITY PRECAUTION:** Under some environmental conditions, some pesticides or pesticide combinations may cause phytotoxicity on growing plants. Adjuvant products such as this product may increase the chance or the intensity of phytotoxicity. Use this product in a manner consistent with individual pesticide product recommendations.

**PESTICIDE STORAGE:** Keep in original container. Store above 32° F.

**PESTICIDE DISPOSAL:** Triple rinse (or equivalent) during mixing or loading. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at [www.acrecycle.org](http://www.acrecycle.org). Decontaminated containers may also be disposed of in a sanitary landfill.

**LIMITED WARRANTY:** The use of this material being beyond our control and involving elements of risk to human beings, animals, and vegetation, we do not make any warranty, express or implied, as to the effects of such use, when this product is not used in accordance with the directions as stated on this label.

PA Right-To-Know: This product contains proprietary ingredient(s). This product is intellectual property of Miller Chemical & Fertilizer Corporation.



**CHEMICAL & FERTILIZER CORPORATION**

**MATERIAL SAFETY DATA SHEET**

IDENTITY **EXIT™**

**Section I**

Manufacturer's Name <b>MILLER CHEMICAL &amp; FERTILIZER CORP.</b>	Emergency Telephone Number <b>CHEMTREC: 1-800-424-9300 717-632-8921</b>
Address <b>P.O. BOX 333, 120 RADIO ROAD HANOVER, PA 17331 U.S.A.</b>	Telephone Number for Information <b>717-632-8921 FAX: 717-632-4581</b>
	Date Prepared <b>1/1/01</b>

**Section II - Hazardous Ingredients/Identity Information**

NAME	CAS #	OSHA PEL	CGIH TL	OTHER LIMITS RECOMMENDED
<b>THIS PRODUCT HAS BEEN TESTED AS A WHOLE TO DETERMINE IT'S HAZARDS</b>	NA	ND	ND	245mg/m3

Recommended NFPA Rating: **HEALTH: 0 FIRE: 1 REACTIVITY: 0**

PA Right-to-Know : This product contains proprietary ingredients.

This product contains the following chemical(s) subject to the reporting requirements of Section 313 Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372 (the corresponding CAS number and typical percent by weights are also provided).

NAPHTHALENE - CAS# 91-20-3 Less than 0.4%

**Section III - Physical/Chemical Characteristics**

Boiling Point	224 c	Specific Gravity (H20=1)	0.90-0.93 @ 20c
Vapor Pressure (mm Hg @ 25c)	22.8	Melting Point	NE
Vapor Density (AIR=1)	NA	Evaporation Rate (Butyl Acetate=1)	NA

Solubility in Water **EMULSIFIES**

Appearance and Odor **AMBER LIQUID, MODERATE ODOR**

**Section IV - Fire and Explosion Hazard Data**

Flash Point **Over 200 F(TCC)** Flammable Limits **NA** LEL **NA** UEL **NA**

Extinguishing Media **FOAM, CARBON DIOXIDE, DRY CHEMICAL**

Special Fire Fighting Procedures **USE WATER SPRAY TO KEEP FIRE-EXPOSED CONTAINERS COOL. USE SUPPLIED AIR BREATHING APPARATUS EQUIPMENT. USE WATER SPRAY TO DISPERSE VAPORS.**

Unusual Fire and Explosion Hazards **EVACUATE PEOPLE DOWNWIND FROM FIRE. CONTROL RUNOFF WATER.**

**Section V - Reactivity Data**

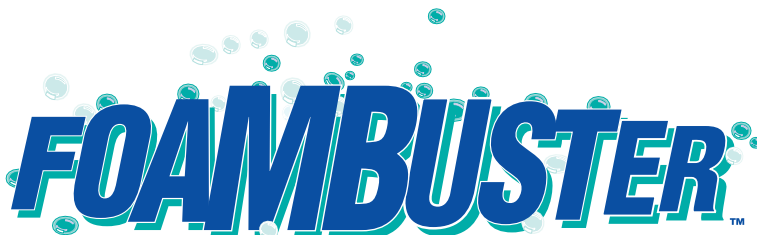
Stability	Unstable	X	Conditions to Avoid	<b>EXCESSIVE HEAT, SOURCES OF IGNITION.</b>
	Stable			

Incompatibility(materials to avoid) **STRONG OXIDIZERS**

Hazardous Decomposition or Byproducts **OXIDES OF CARBON UNDER FIRE CONDITIONS**

Hazardous Polymerization	May Occur	X	Conditions to Avoid	<b>NONE KNOWN</b>
	Will Not Occur			

<b>Section VI - Health Hazard Data</b>						
Route(s) of Entry:	Inhalation?	YES	Skin?	YES	Ingestion?	YES
Health Hazards (Acute and Chronic)	ACUTE ORAL LD <sub>50</sub> (rat): 5514mg/kg					
ACUTE DERMAL LD <sub>50</sub> (rabbit): >5000mg/kg, ACUTE INHALATION 4-hour LC <sub>50</sub> (rat):>5.88 mg/L						
THIS PRODUCT IS AN EYE IRRITANT (rabbit) - WASHING WITH WATER ELIMINATES IRRITATION - see below						
THIS PRODUCT IS NOT A SKIN IRRITANT (rabbit)						
CHRONIC: NO DATA AVAILABLE						
Carcinogenicity:	NTP?	NO	IARC Monographs?	NO	OSHA Regulated?	NO
Signs and Symptoms of Exposure	HIGH VAPOR CONCENTRATIONS MAY BE IRRITATING TO EYES AND RESPIRATORY TRACT, MAY CAUSE HEADACHES AND DIZZINESS.					
Medical Conditions Generally	EYE CONTACT MAY CAUSE EYE IRRITATION					
Aggravated by Exposure						
Emergency and First Aid Procedures	<b>INGESTION:</b> DO NOT INDUCE VOMITING, CALL A PHYSICIAN. <b>EYES:</b> IRRIGATE WITH WATER FOR AT LEAST 15 MINUTES, SEEK MEDICAL ATTENTION. <b>SKIN:</b> REMOVE ANY CONTAMINATED CLOTHING AND WASH SKIN WITH SOAP AND WATER. <b>INHALATION:</b> REMOVE VICTIM TO FRESH AIR, CALL A PHYSICIAN					
<b>Section VII - Precautions for Safe Handling and Use</b>						
Steps to be Taken in Case Material is Released or Spilled	ELIMINATE ALL SOURCES OF IGNITION. DIKE OR IMPOUND TO KEEP PRODUCT OUT OF SEWERS AND WATERCOURSES. ABSORB SPILL WITH INERT MATERIAL. SHOVEL INTO WASTE CONTAINERS. WASH AREA WITH WATER. ABSORB WATER WITH INERT MATERIAL. CONTINUE THIS PROCEDURE UNTIL NO ODOR REMAINS.					
Waste Disposal Method	DISPOSE OF WASTE AND WASTE CONTAINERS IN ACCORDANCE WITH LOCAL/STATE/FEDERAL REGULATIONS.					
Precautions to be Taken in Handling and Storing	KEEP CONTAINERS CLOSED WHEN NOT IN USE. KEEP FROM SOURCES OF IGNITION. DO NOT CONTAMINATE WATER, FOOD, FEED BY STORAGE OR DISPOSAL. FOLLOW GOOD INDUSTRIAL HYGIENE PRACTICES. STORE BETWEEN 40.5 F AND 120.5 F.					
Other Precautions	KEEP FROM CHILDREN AND ANIMALS. AFTER WORKING WITH THIS PRODUCT, THOROUGHLY CLEAN EQUIPMENT. WASH THOROUGHLY, CHANGE CLOTHING, AND CLEAN PROTECTIVE GEAR.					
<b>Section VIII - Control Measures</b>						
Respiratory Protection	A RESPIRATOR APPROVED BY NIOSH/MSHA SHOULD BE WORN WHERE VAPOR INHALATION COULD OCCUR.					
Ventilation	Local Exhaust	NA	Special	NA		
	Mechanical	PREFERRED	Other	NA		
Protective Gloves	CHEMICAL RESISTANT (e.g. rubber)			Eye protecti	CHEMICAL SPLASH GOGGLES	
Other Protective Clothing or Equipment	CHEMICAL RESISTANT APRON, CLEAN BODY-COVERING CLOTHING, BOOTS, HAT					
Work/Hygienic Practices	PREVENT EATING, DRINKING, TOBACCO USAGE AND COSMETIC APPLICATION TO PREVENT EXPOSURE.					
<p>THE SUBMISSION OF THIS MSDS MAY BE REQUIRED BY LAW BUT THIS IS NOT AN ASSERTION THAT THIS SUBSTANCE IS HAZARDOUS WHEN USED IN ACCORDANCE WITH PROPER SAFETY PRACTICES AND NORMAL HANDLING PROCEDURES.</p> <p><b><u>THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.</u></b></p>						



**A SILICONE DEFOAMER FOR USE IN AQUEOUS SOLUTIONS**

<b>ACTIVE INGREDIENTS:</b>	<b>(By Weight)</b>
Dimethylpolysiloxane .....	20.0%
<b>CONSTITUENTS INEFFECTIVE AS SPRAY ADJUVANT</b> .....	<b>80.0%</b>
<b>TOTAL</b> .....	<b>100.0%</b>

All ingredients are exempt from the requirement of a tolerance as specified in CFR 40, 180.1001(d).

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**  
 See Inside Panel for Additional Precautionary Statements

SN 0306/0810

Cal. Reg. No. 5905-50072-AA

Manufactured For  
**HELENA CHEMICAL COMPANY**  
 225 SCHILLING BOULEVARD, SUITE 300 • COLLIERVILLE, TENNESSEE 38017

**OPM #111695**

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING ►

**NET CONTENTS:**

## PRECAUTIONARY STATEMENTS CAUTION

### BEFORE USING THIS PRODUCT READ ALL PRECAUTIONS, DIRECTIONS FOR USE, CONDITIONS OF SALE - LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES.

Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing vapors or spray mist. Avoid contact with skin, eyes, or clothing. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. In addition, follow precautionary statements on the accompanying pesticide(s) label(s).

FIRST AID	
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

## ENVIRONMENTAL HAZARDS

Do not contaminate water sources by cleaning of equipment or disposal of rinsate.

## STORAGE AND DISPOSAL

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

**STORAGE:** Store in original container only. Keep container tightly closed. Do not allow water to be introduced into the contents of this container. Do not store near heat or open flame. Do not store with oxidizing agents or ammonium nitrate.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be dispersed on site or at an approved waste disposal facility. Do not contaminate water sources by runoff from cleaning of equipment, disposal of cleaning equipment wash waters, or spray waste.

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

For help in chemical emergencies involving spill, leak, fire or exposure, call toll free 1-800-424-9300.

## GENERAL INFORMATION

**FOAM BUSTER™** is a high-quality organosilicone solution which is designed to prevent the formation, suppress or break foam in aqueous spray mixes.

## DIRECTIONS FOR USE

To control foam before it forms, add one (1) ounce of **FOAM BUSTER™** to one hundred (100) gallons of aqueous carrier before pesticides or any other product is added to the spray tank. To control foam that has already formed in the tank, add one (1) to two and one-half (2.5) ounces of **FOAM BUSTER™**.

The foaming characteristics of a tank mix also may reflect the hardness of the water being used. Very soft water (low hardness) will require a larger amount of **FOAM BUSTER™** than the rates above to control foam. In areas where soft water is prevalent, it is recommended that a small mixture of tank ingredients be combined to determine the correct dosage of **FOAM BUSTER™**.

## CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

**Read the Conditions of Sale – Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.**

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

© Copyright Helena Holding Company, 2010.

**FOAM BUSTER™** is a trademark of Helena Holding Company.

## A SILICONE DEFOAMER FOR USE IN AQUEOUS SOLUTIONS

ACTIVE INGREDIENTS:	(By Weight)
Dimethylpolysiloxane .....	20.0%
<b>CONSTITUENTS INEFFECTIVE AS SPRAY ADJUVANT.</b> .....	<b>80.0%</b>
<b>TOTAL</b> .....	<b>100.0%</b>

All ingredients are exempt from the requirement of a tolerance as specified in CFR 40, 180.1001(d).

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**See Inside Panel for Additional Precautionary Statements**

SN 0306/0810

Cal. Reg. No. 5905-50072-AA

**Manufactured For  
HELENA CHEMICAL COMPANY  
225 SCHILLING BOULEVARD, SUITE 300 • COLLIERVILLE, TENNESSEE 38017**

Material Safety Data Sheet

Effective Date: 23-JAN-2012  
Product: FOAMBUSTER 20

I. IDENTIFICATION

Chemical Name: DIMETHYL POLYSILOXANE  
Chemical Family: SILICONES  
Formula: NOT APPLICABLE, FORMULATED MIXTURE  
Synonyms: 20% SILICONE DEFOAMER  
CAS Number: 63148-62-9  
EPA Number: NONE REQUIRED

II. PHYSICAL DATA

Boiling Point: INITIAL - 212 DEG F.  
Freezing Point: <35 DEGREES F.  
Spec Gravity: 1.000 @ 72 F  
Vapor Pressure: NOT ESTABLISHED  
Vapor Density: NOT ESTABLISHED  
Solubility: DISPERSIBLE  
Volatiles: <1%  
Evaporation: NOT ESTABLISHED  
Melting Point: NOT APPLICABLE  
Appearance: MILKY, WHITE LIQUID, FAINT ODOR

III. INGREDIENTS

Material	CAS Number	Percent	TLV	Hazard
DIMETHYL POLYSILOXANE		20.00	N/E	SKIN & EYE IRRITANT
WATER AND NONIONIC EMULSIFIERS		80.00	N/E	NONHAZARDOUS

IV. FIRE AND EXPLOSION HAZARD

Flash Point: >200 DEGREES F.  
Autoignition Temp: NOT APPLICABLE  
Flammable Limit: NOT APPLICABLE  
Extinguishing Media: DRY CHEMICAL, ALCOHOL FOAM, AND CARBON DIOXIDE.  
Special Fire Fight Proc: WEAR SELF-CONTAINED BREATHING APPARATUS AND AVOID BREATHING FUMES.  
Fire and Expl Hazard: NONE NOTED.

V. HEALTH HAZARD

Carcinogen Information: NONE CURRENTLY KNOWN.



Material Safety Data Sheet

Effective Date: 23-JAN-2012  
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ACUTE EFFECTS OF OVER EXPOSURE  
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Swallowing: NONE CURRENTLY KNOWN.  
Skin Absorption: NONE CURRENTLY KNOWN.  
Inhalation: NONE CURRENTLY KNOWN.  
Skin contact: MAY CAUSE IRRITATION AFTER REPEATED EXPOSURE.  
Eye Contact: MAY CAUSE EYE IRRITATION.  
Chronic Effects: NONE CURRENTLY KNOWN.  
Other Hazard: NONE CURRENTLY KNOWN.

EMERGENCY AND FIRST AID PROCEDURES  
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Swallowing: GIVE MINIMUM OF 2 GLASSES OF WATER. INDUCE VOMITING AND CONSULT A PHYSICIAN.  
Skin: WASH SKIN THOROUGHLY WITH SOAP AND WATER. IF IRRITATION DEVELOPS, CONSULT A PHYSICIAN.  
Inhalation: MOVE TO FRESH AIR IF IRRITATION IS NOTED.  
Eyes: FLUSH EYES WITH WATER FOR 15 MINUTES, HOLDING EYELIDS OPEN. IF IRRITATION DEVELOPS, CONSULT A PHYSICIAN.  
Notes to Physician: IN THE EVENT OF AN ADVERSE RESPONSE, TREATMENT SHOULD BE DIRECTED TOWARD CONTROL OF THE SYMPTOMS.

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VI. REACTIVITY  
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Stability: Stable  
Conditions to Avoid: NONE CURRENTLY KNOWN.  
Polymerization: Will Not Occur  
Conditions to Avoid: NONE CURRENTLY KNOWN.  
Incompatibility material: NONE CURRENTLY KNOWN.  
Hazardous Combustion: MAY PRODUCE CARBON OXIDES AND SILICON OXIDES UNDER FIRE CONDITIONS.

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VII. SPILL OR LEAK PROCEDURES  
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Spill or Leak Proc: DIKE AND ABSORB SPILL WITH AN ABSORBENT SUCH AS CLAY, SAND, OR SAWDUST. TRANSFER TO SUITABLE CONTAINERS FOR PROPER DISPOSAL. FLUSH SPILL AREA WITH WATER. ABSORB AND PLACE IN SAME CONTAINERS WITH OTHER MATERIAL.  
Waste Disposal Method: THIS MATERIAL MUST BE DISPOSED OF ACCORDING TO FEDERAL, STATE, OR LOCAL PROCEDURES UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT.  
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Material Safety Data Sheet

Effective Date: 23-JAN-2012  
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VIII. SPECIAL PROTECTION INFORMATION  
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Respiration: NONE NEEDED UNDER NORMAL CONDITIONS.  
Ventilation: LOCAL EXHAUST SUFFICIENT.  
Gloves: IMPERVIOUS  
Eyes: CHEMICAL WORKERS GOGGLES.  
Other: EYE WASH STATION, IMPERVIOUS APRON AND  
FOOTWEAR.

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IX. SPECIAL PRECAUTIONS  
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Special precaution: KEEP OUT OF REACH OF CHILDREN. DO NOT STORE  
WITH FOOD, FEED, OR OTHER MATERIAL TO BE USED  
OR CONSUMED BY HUMANS OR ANIMALS. DO NOT  
CONTAMINATE WATER SUPPLIES, LAKES, STREAMS, OR  
PONDS.  
Other precaution: NOT REGULATED UNDER RCRA OR CERCLA  
("SUPERFUND").

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X. SHIPPING INFORMATION  
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Shipping name: NOT REGULATED BY DOT, IATA AND IMO.	
Hazard Class: NONE	
Identification No: NONE	
Labels Required: NONE	
Placarding: NONE	
Freight Class: SILICONE EMULSION, LIQUID, NOIBN	
Chemical Name	Equivalent R.Q.
-----	-----
NOT APPLICABLE	NOT APPLICABLE

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XI. GENERAL PRODUCT INFORMATION  
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National Fire Protection Association Rating:  
(Rating level: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Minimum)

Health: 1                      Fire: 0                      Reactivity: 0

S.A.R.A. Title III Hazard Classification: (Yes/No)

Immediate (Acute) Health: Y	Delayed (Chronic) Health: N
Sudden Release of pressure: N	Fire: N
Reactive: N	

Helena Chemical Company  
PH: 901-761-0050  
CHEMTREC: 800-424-9300

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Mail inquiries to: 225 Schilling Blvd., Suite 300 Collierville, TN 38017  
Helena Chemical Company believes that the data contained herein is factual.  
This data is not to be taken as a warranty or representation of legal  
responsibility. It is offered solely for your consideration, investigation  
and verification.

# NU-ARBOR

## ANTI-TRANSPIRANT

### DIRECTIONS FOR USE

To assure uniform mixing and application please follow label directions. NU-ARBOR Anti-Transpirant application should be made to provide coverage of both upper and lower surfaces of the foliage and all woody parts above ground level.

For effective and economical coverage of trees and shrubs, use a sprayer which will provide a spray, droplets size of 150 microns or smaller. Mist blowers or air blast tree sprayers using sufficient water to provide effective coverage are ideal. Hand held high pressure hydrolic sprayers may be used provided they give thorough coverage of the plant.

For small applications, use a hand pump sprayer or a trigger pump sprayer and apply thoroughly to the point of drip off.

### APPLICATION: Frost damage reduction

To reduce winter wind-burn, sun-scald and winter kill damage in trees, shrubs, and ornamentals

Apply in the fall after deciduous trees have dropped their foliage, but before daytime temperatures are below 40°F. Spray at the rate of one (1) part NU-ARBOR Anti-Transpirant to 20-25 parts water.

This one time application will reduce winterkill damage and keep plants their healthy color through the winter.

### APPLICATION: Anti-transpirant

Transplanting flowers, shrubs and trees

To reduce transplanting shock, mix NU-ARBOR Anti-Transpirant at the rate of one (1) part to 20-25 parts of water and spray or dip plants before transplanting. When NU-ARBOR Anti-Transpirant is sprayed, take care to spray under the leaves where the stomates are located. Apply spray to the point of drip off. For large orchards use 1-1/2 to 2 gallons per acre in sufficient water for full coverage of foliage.

Indoor plants and Christmas trees

To extend the life of fresh cut flowers, decrease the watering requirements of indoor plants, and help Christmas trees from drying out.

Spray the entire foliage thoroughly with a mixture of one (1) part NU-ARBOR Anti-Transpirant to 20-25 parts of water. Spray Christmas trees to the point of drip off.

Sod transplanting

To extend the life of palleted sod, mix 1 quart of NU-ARBOR Anti-Transpirant with sufficient water and apply evenly to 1,000 sq. ft. of sod prior to cutting. Allow 1 hour drying time before cutting.



## NU-ARBOR ANTI-TRANSPIRANT GENERAL INFORMATION

NU-ARBOR Anti-Transpirant is a unique polymer which is highly effective in reducing rapid water loss in plants, thus aiding in the reduction of plant damage due to transplanting, drought, or winter wind-burn, sun-scald and winter-kill.

NU-ARBOR Anti-Transpirant is also effective in retarding the yellowing in palleted and rolled sod.

NU-ARBOR Anti-Transpirant adheres to plant tissues in an invisible, non-toxic membrane which will not wash or wear away even under abnormal conditions.

NU-ARBOR Anti-Transpirant is non-toxic, non-foaming and non-flammable.

NU-ARBOR Anti-Transpirant cleans up easily with household ammonia. Under most conditions NU-ARBOR Anti-Transpirant will dry within 20 minutes of application.

### SPRAY PREPARATION

To assure a proper and uniform spray mixture, remove oil, rust, scale, pesticide residues and other foreign matter from tanks and entire spray systems. Flush with clean water.

Fill spray or mix tank with 1/2 or 3/4 the desired amount of water. Start agitation. Add the required amount of NU-ARBOR Anti-Transpirant and continue filling to the desired volume of water. Prepare only as much spray mixture as can be applied on the date of mixing. Maintain agitation during mixing and spraying to assure uniform suspension.

Store unused NU-ARBOR Anti-Transpirant in its original container only, out of the reach of children and animals.

### WARRANTY

1. The manufacturer guarantees and warrants that the content and total net weight are as stated within lawful limits.

2. Liability of the manufacturer under this warranty or otherwise, shall be limited to refund of the purchase price and such refund is expressly agreed by buyer to be the exclusive remedy. THE MANUFACTURER MAKES NO OTHER EXPRESS OR IMPLIED GUARANTEE, WARRANTY OR REPRESENTATION, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PURPOSE. THE MANUFACTURER SHALL NOT BE LIABLE FOR DIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES. No modification of this warranty and the disclaimers herein authorized are valid unless made expressly in writing signed by the manufacturer.

**CAUTION: KEEP OUT OF THE REACH OF CHILDREN**

**NET VOLUME 2 1/2 GALLONS (9.45 Liters)**

**NET WEIGHT 28 LBS. (12.7 kg)**



**NU-ARBOR**

Tree & Shrub Care Products

A Division of GRAND ARBOR GROUP, INC.

1730 Olson NE Suite A

Grand Rapids, MI 49503

(888) 773-8777 FAX: (616) 456-7780

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NU-ARBOR Products sold exclusively through Authorized Distributors

# PENTRA-BARK®

## BARK PENETRATING SURFACTANT

### PRINCIPLE FUNCTIONING AGENTS:

Alkylphenol ethoxylate, polysiloxane polyether copolymer, propylene glycol .....	99.8%
CONSTITUENTS INEFFECTIVE AS A SPRAY ADJUVANT .....	0.2%
<b>TOTAL</b> .....	<b>100.0%</b>

All ingredients are exempt from tolerance requirements under 40 CFR, 180.

U. S. EPA 83416

### CAUTION

#### KEEP OUT OF REACH OF CHILDREN

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling.

**Personal Protective Equipment:** Wear protective eyewear, long-sleeved shirt and long pants, shoes plus socks when mixing or applying **PENTRA-BARK®**.

#### FIRST AID

**If Swallowed:** Call a physician or Poison Control Center immediately. Do not induce vomiting, unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow.

**If on Skin:** Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If in Eyes:** Flush with water for at least 15 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible.

#### GENERAL INFORMATION

**PENTRA-BARK®** is a superior nonionic wetting agent, designed for improving penetration through bark of water based basal applications. **PENTRA-BARK®** may be used in agriculture, horticulture, industrial, and forestry operations. It is designed for fast spreading, uniform distribution and absorption of spray on leaf and stem surfaces. **PENTRA-BARK®** may be used with most pesticides and fertilizer products (see cautionary statements under directions for use). Optimum application and consequent effects can be influenced by many factors. It is recommended that the spray be observed and adjuvant rates be adjusted accordingly. During application, insure thorough coverage without excessive runoff.

#### DIRECTIONS FOR USE

**PENTRA-BARK®** is a nonionic organosilicone wetting agent designed for use in certain agricultural and horticultural uses where a nonionic surfactant is recommended. Suggested Rates for the use with various categories of chemicals are as follows:

#### Ounces of PENTRA-BARK® to add per 100 gal. of spray mixture

##### Chemical Group

Insecticides, Miticides & Fungicides .....	6 to 32 fl. oz.
Herbicides .....	12 to 64 fl. oz.
Glyphosate formulations without added surfactants .....	12 to 64 fl. oz.
Defoliant & Desiccants .....	12 to 64 fl. oz.
Fertilizers & Micronutrients .....	4 to 32 fl. oz.

**NOTE:** Carefully read and follow the specific directions contained on the label of the chemical used. Before adding **PENTRA-BARK®** to spray tank mixes or before using with a pesticide or fertilizer where a nonionic adjuvant is not specifically recommended but not prohibited by the manufacturer, the user or application advisor must have experience with the combination or must have conducted a phytotoxicity trial of their own. For local recommendations, consult a competent agricultural authority.

**Basal Bark Treatment:** **PENTRA-BARK®** is specially designed to aid penetration of fertilizers, nutrients, insecticides, fungicides, and herbicides through the bark. Use 1% to 2 1/2% **PENTRA-BARK®** by volume of spray solution. Consult pesticide label for specific use rates and application method, or contact your Quest Representative.

**Aerial Application:** When applying aerially, follow pesticide label directions including minimum water volume per acre. Do not substitute **PENTRA-BARK®** for water required by the pesticide label.

**Irrigation Injection:** Applications of **PENTRA-BARK®** through irrigation systems are possible provided the recommended use rates and dilutions are maintained and local, state, and federal guidelines are followed.

**Water Penetration of Hard-to-Wet Soils:** For most efficient water penetration of hard-to-wet soils and the even distribution of applied moisture, use 1 pint per 100 gallons of water as a spot or area treatment.

**NOTE:** Not for use with aquatic applications in the State of Washington.

#### MIXING

Spray mixing and application equipment must be cleaned according to cleaning directions on prior pesticide label before application.

To minimize and help prevent foaming, fill tank 2/3 to 3/4 full of water. Add pesticides and/or fertilizers as directed by label or in the following sequence: 1) Micronutrients and fertilizer; 2) Dry flowables and dispersible granules; 3) Flowables; 4) Water soluble pesticides; 5) Emulsifiable concentrates.

While agitating, add **PENTRA-BARK®** and mix for 1 to 2 minutes with lower than normal agitation. Continue filling tank maintaining minimal agitation. For most effective results, apply within 36 hours after mixing.

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not store near heat or open flame. Store in original container.

**Pesticide:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration.

#### NOTICE TO BUYER

To the extent permitted by law, all conditions and warranties and statutory or other rights of action which buyer or any other user may have against Quest Products Corp. are hereby excluded. Quest Products Corp. hereby gives notice to buyer and other users that it will not accept responsibility for any indirect or consequential loss arising from reliance on product information provided by Quest Products Corp. or on its behalf unless it is established that such information or advice was provided negligently and that the product has been used strictly as directed. Quest Products Corp's liability shall in all circumstances be limited to replacement of product or a refund of the purchase price thereof.

*Pentra-Bark® is a registered trade mark of Quest Products Corporation.*

*Patent pending.*



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# AGRICHEM®

## MATERIAL SAFETY DATA

### 1. PRODUCT IDENTIFICATION

Product Name	<b>PENTRA-BARK</b>
Synonyms	Polyalkyleneoxide modified heptamethyltrisiloxane
Chemical Family	Silicone-Polyether Copolymer
General Description	Silicone Based Surfactant

### 2. HAZARDOUS INGREDIENTS

OSHA REGULATED

COMPONENT	CAS. NO	WT%	EXPOSURE LIMITS
Polyalkyleneoxide modified heptamethyltrisiloxane			

### 3. EFFECTS OF OVEREXPOSURE

IF IN EYES: Severely irritating.  
IF ON SKIN: Slightly irritating. This material could increase dermatitis conditions.  
IF INGESTED: Not expected to cause adverse effects unless swallowed in large amounts.  
IF INHALED: Not expected to cause adverse conditions.

### 4. EMERGENCY FIRST AID

IF IN EYES: Hold eyelids open and flush with a steady stream of water for at least 15 minutes. GET MEDICAL ATTENTION.  
IF ON SKIN: Wash affected area with plenty of soap and water. Remove contaminated clothing. Launder contaminated clothing separately.  
IF INGESTED: If large amounts are accidentally ingested, call a physician or poison control center.  
IF INHALED: Remove to fresh air. Apply artificial respiration if necessary.

### 5. REACTIVITY DATA

STABILITY: Stable under normal conditions.  
CONDITIONS TO AVOID: None known.  
MATERIALS TO AVOID: None known.  
POLYMERIZATION: Will not occur.  
DECOMPOSITION PRODUCTS: Silicon dioxide, carbon dioxide, and traces of incompletely burned carbon products.

### 6. PHYSICAL PROPERTIES

APPEARANCE AND ODOR: Clear to amber liquid. Slight polyether odor.  
BOILING POINT: 760 mm Hg:>150° C (copolymer)  
FREEZING POINT: Not determined  
PH: 7.4  
SPECIFIC GRAVITY: 1.046  
VAPOR PRESSURE: At 20° C <1mm Hg  
% VOLATILE (by weight %): <1  
EVAPORATION RATE (Ether=1): <1  
SOLUBILITY IN WATER: Soluble

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## 7. NFPA HAZARD RATING (National Fire Protection Association)

	FIRE		FIRE:	Materials that must be preheated before ignition can occur.
HEALTH 1	0	0 REACTIVITY	HEALTH:	Materials which on exposure should cause irritation but only minor residual injury even if no treatment is given.
	-		REACTIVITY:	Materials which in themselves are normally stable, even under fire exposure conditions, and which are
	SPECIAL			

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## 8. FIRE AND EXPLOSION HAZARD INFORMATION

FLASHPOINT:	240° F (PMCC)
FLAMMABLE LIMITS IN AIR:	Not determined
AUTOIGNITION TEMPERATURE:	Not determined
EXTINGUISHING MEDIA:	Use carbon dioxide or dry chemical for small fires and water fog or foam (alcohol, polymer, or ordinary) for large fires. Water stream may spread flames.
SPECIAL FIRE FIGHTING PROCEDURES:	Fire fighters should use self-contained breathing apparatus and full turnout gear. Prevent runoff of firewater. Avoid exposure to smoke.
UNUSUAL FIRE HAZARD:	Do not use water or foam directly on the fire.

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## 9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:	Store in a cool, dry area away from sources of heat or ignition.
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## 10. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Not required under normal use conditions. If required, use NIOSH/MSHA approved respirator for organic vapors.
VENTILATION:	Local exhaust.
PROTECTIVE GLOVES:	Chemical resistant gloves.
EYE PROTECTION:	Safety glasses.
OTHER PROTECTION:	Chemical resistant coveralls or apron.
USER SAFETY RECOMMENDATIONS:	Safety showers and eyewash should be easily accessible.

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## 11. SPILL OR LEAK PROCEDURES

SPILLS OR RELEASES:	Dike the area using absorbent or materials such as sand or clay. Recover and contain as much product as possible using absorbent. Clean spill area using a solution of water and detergent. Collect and contain wash water and all contaminated absorbent for disposal. If spilled on the ground, the affected area should be excavated to a depth of 1 – 2 inches. Prevent the spilled product or washings from reaching public sewers or waterways. Wear appropriate protective equipment during the cleanup. Ensure that tools and equipment are adequately decontaminated.
WASTE & CONTAINER DISPOSAL:	Dispose of in accordance with Federal, State, and Local regulations.
CONTAINER DISPOSAL:	Dispose of in an approved facility according to Federal, State and Local regulations.



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## 12. REGULATORY INFORMATION

### COMPOUNDS WHICH REQUIRE REPORTING UNDER SARA TITLE III

A.	Sara regulated compounds	Section	CAS No.	Percent
	Not Listed	302-304		
	Not Applicable	312		
	Not Listed	313		

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The recommendation for safe handling and protection procedures are believed to be generally suitable for the standard uses of this compound. However, each user should identify his intended uses of this material and determine whether they are appropriate. All data included in this document is releases as typical values and should not be utilized to determine the suitability of this material for a particular use or purpose. No warranty, either expressed or implied, is hereby made, nor do we give permission, inducement, or recommendations to practice any patented invention without license. All data is offered for consideration, investigation and verification purposes only.

### **AGRICHEM MANUFACTURING INDUSTRIES PTY. LTD.**

4-8 Chetwynd. St. Loganholme, Queensland. 4129. Australia  
Ph: +61 7 3801 4888

# MATERIAL SAFETY DATA SHEET

## THERMX-70

<b>MANUFACTURED BY:</b>	Cellu-Con, Inc.	<b>EMERGENCY TELEPHONE:</b>	DAY	559-568-0190
			EVENING	559-568-2255
<b>ADDRESS:</b>	19994 Meredith Drive, Strathmore, CA 93267			
<b>PRODUCT:</b>	Thermx-70			
<b>HAZARDOUS INGREDIENTS:</b>	None			
<b>CHEMICAL NAME:</b>	Yucca Extract			
<b>CAS REGISTRY NUMBER:</b>	90147-57-2			
<b>PHYSICAL DATA:</b>				
<b>BOILING POINT:</b>	105° C	pH.: 6.0		
<b>SOLUBILITY IN WATER:</b>	100%	DENSITY:	10.7LBS./GALLON	
<b>APPEARANCE AND ODOR:</b>	Brown liquid, slight, sweet odor			
<b>FIRE AND EXPLOSION HAZARD DATA</b>				
<b>FLASH POINT:</b>	N/A			
<b>EXTINGUISHING MEDIA:</b>	Water, dry chemical, foam			
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b>	None			
<b>HEALTH HAZARD DATA</b>				
<b>THRESHOLD LIMIT DATA:</b>	Above 20,000 mg/kg. Regulated under FDA 21 CFR 172.510 as a flavoring substance, wetting, foaming agent in animal and human food.			
<b>EFFECTS OF OVEREXPOSURE TO SKIN:</b>	Some people with continual overexposure to concentrated product develop a mild skin rash and itching. Accidental introduction into eyes of the concentrated product can cause reddening and irritation.			
<b>EMERGENCY AND FIRST AID PROCEDURES:</b>	Skin rash, wash with soap and water, apply cortisone crème. Eyes, flush eyes with water. See physician if symptoms persist.			
<b>SPILL OR LEAK PROCEDURES:</b>	Normal cleanup procedures. Remove from surfaces with wash-off water. Dispose of waste in Class 1 or approved site.			
<b>SPECIAL PROTECTION INFORMATION</b>	When repackaging or mixing with other ingredients, avoid exposure to skin by wearing non-absorbent gloves. Protect eyes with face shield.			
<b>SPECIAL PRECAUTIONS</b>	Product is a high foaming agent. Avoid vigorous mixing with air when diluted in water. Use of an anti-foaming agent will reduce foaming problems.			

# Therm X70<sup>TM</sup>

**Natural Wetting Agent**

SOIL  
CONDITIONER

OMRI  
Listed

**DIRECTIONS FOR USE:**

**Soil:** Use one pint (16 oz.) per acre.

**Problem Soil:** For saline, alkali, and water penetration problems, use 1 quart (32 oz.) per acre, first application.

**Row Crops:** Mix with starter or side dress fertilizer. Can also be metered into first irrigation water.

**Trees and Vines:** Dilute in sufficient water for coverage and spray soil surface to be irrigated or meter into first irrigation water.

**Transplants:** Mix with transplant water to apply one pint (16 oz.) per acre.

**Plants:** Use four fluid ounces per 100 gallons of water to reduce surface tension and improve wetting in agricultural sprays.

If foaming is a problem, use an anti-foaming agent in the spray formulation or fertilizer solution.

*Not A Plant Food Ingredient*

Patent Pending

**Active Ingredient:**

% By Wt.

20 .....Saponin extracted from  
Yucca schidigera.

80.....From plant extract.

**Notice To Buyer:**

Seller makes no warranty, expressed or implied, concerning the uses of this product other than indicated on this label. Buyer assumes all risk of use or handling of this material when such use and/or handling are contrary to the label instructions.

**Net contents:**

**Gallons:**



# Material Safety Data Sheet

Product Name: TRANSFILM Anti-Transpirant

MSDS No.: 834-6

Version No.: 003

EPA Registration No.: -None-

## 1. Basic Information:

**Manufacturer:** PBI/Gordon Corporation  
**Address:** 1217 West 12th Street  
**City, State Zip:** Kansas City, MO 64101-1407  
**Information Contact:** Environmental, Health, & Safety Dept.  
**Information Telephone Number:** (816)421-4070  
**Emergency Contact:** Chemtrec  
**Emergency Telephone Number:** (800)424-9300



1	Health
0	Flammability
0	Reactivity
B	Pers. Protection

Last Update: 10/2/00

Chemical State:  Liquid  Gas  Solid  
 Chemical Type:  Pure  Mixture

## 2. Ingredients:

Trade Secret (ND = Not Disclosed)

CAS No.	Chemical Name	% Range	EHS		IARC		SARA 313		OSHA	ACGIH	Other
			NTP		SUB Z		PEL	TLV	Limits		
111422	Diethanolamine	1.7	N	N	N	N	Y	NI	0.46 ppm	3 ppm	

## 3. Hazardous Identification:

Hazard Category:

Acute  Chronic  Fire  Pressure  Reactive

Hazardous Identification Information:

## 4. First Aid Measures:

**Route(s) of Entry:**

Contact, inhalation and ingestion.

**Health Hazards (Acute and Chronic):**

EYES: Contact may cause irritation and burning.

SKIN: Contact may cause irritation and reddening.

INHALATION: May irritate respiratory tract.

INGESTION: May irritate gastrointestinal tract.

**Signs and Symptoms:**

NI

**Medical Conditions Generally Aggravated by Exposure:**

Existing dermatitis may be aggravated by overexposure.

**Emergency First Aid Procedure:**

EYES: Flush with large amounts of clean water for 10-15 minutes, holding lids open. If irritation persists, seek medical attention.

SKIN: Remove contaminated clothing. Bathe and shampoo with soap and water to remove chemicals from skin and hair. If irritation persists, seek medical attention. Launder contaminated clothing separately prior to reuse.

INHALATION: Remove victim to fresh air. If irritation persists, seek medical attention.

INGESTION: Call a physician or Poison Control Center.

**Other Health Warnings:**

NI

## 5. Fire Fighting Measures:

**Flash Point:** >220°F **F.P. Method:**

**Lower Explosive Limit:** NI

**Upper Explosive Limit:** NI

**Fire Extinguishing Media:**

Water spray, dry chemical, CO2 or foam.

**Special Fire Fighting Procedures:**

Wear self-contained breathing apparatus and full protective clothing.

**Unusual Fire and Explosion:**

Burning may produce irritating or poisonous gases.

## 6. Accidental Release Measures:

**Steps to be Taken in Case Material is Released or Spilled:**

See Section 8 for Personal Protective Equipment. Contain and collect the spilled material with inert absorbent, and place in containers for proper disposal.

## 7. Handling and Storage:

**Precautions to be Taken:**

Avoid contact with skin. Keep from children and pets. Avoid cross-contamination of food and feed. Do not reuse container.

**Other Precautions:**

NI

## 8. Exposure Controls/Personal Protection:

**Ventilation Requirements:**

Local exhaust.

**Personal Protective Equipment:**

EYE PROTECTION: Safety glasses or goggles.

PROTECTIVE CLOTHING: Long sleeves and pants; chemical-resistant gloves and shoes.

RESPIRATORY PROTECTION: If exposure limits may be exceeded,

# Material Safety Data Sheet

Product Name: TRANSFILM Anti-Transpirant

MSDS No.: 834-6

Version No.: 003

EPA Registration No.: -None-

## Exposure Controls/Personal Protection (Continued)

wear a respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a NIOSH approved respirator with any R, P or HE filter.

### 9. Physical and Chemical Properties:

**Boiling Point:** 220°F                      **Melting Point:** NI  
**Evaporation Rate (Butyl Acetate = 1):** <1  
**Vapor Pressure (mm Hg.):** <17@20°C  
**Vapor Density (Air = 1):** >1  
**Specific Gravity (H2O = 1):** 0.98429  
**Solubility in Water:** Infinite.  
**Appearance and Odor:** Milky white suspension; banana odor

#### Other Information:

pH: 9.0-10.0  
 Freezing point <35°F  
 Density: 8.2 pounds/gallon

### 10. Stability and Reactivity:

**Stability:**  
 Stable.

**Incompatibility (Materials to Avoid):**  
 Do not mix with acidic materials as this may ruin the product.

**Decomposition/By-Products:**  
 None known.

**Hazardous Polymerization:**  
 Will not occur.

### 11. Toxicological Information:

No toxicological data available.

### 12. Ecological Information:

### 13. Disposal Considerations:

Cover and label the containers. Waste product, absorbent and waste water should be disposed of according to local, state and Federal regulations. Contact the local EPA for assistance.

### 14. Transport Information:

The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

Freight Class: Adhesive, Adjuvants, Spreaders or Stickers, Liquid - NMFC #4610

In our current available sizes, this product does not qualify as a Hazardous Material.

### 15. Regulatory Information:

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: All components of this product that are required to be on the TSCA inventory are listed on the inventory.

CERCLA REPORTABLE QUANTITY: 5882 pounds of the formulation

## Regulatory Information (Continued)

which contains 100 pounds of Diethanolamine

#### SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None  
 SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard, Delayed Health Hazard  
 SECTION 313 TOXIC CHEMICALS: Diethanolamine, CAS# 111-42-2

RCRA STATUS: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

### 16. Other Information:

REASON FOR ISSUE: To revise MSDS to the ANSI Z400.1-1998 format

NOTE: NI means not indicated.

The information and statements in this Material Safety Data Sheet are believed to accurately reflect the scientific evidence used in making the hazard determination, but is not to be construed as a warranty or representation for which we assume legal responsibility. Additional information may be necessary or desirable depending on particular, exceptional or variable conditions or circumstances of use or storage or because of locally applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information available to you and must make independent determinations of the suitability of the information for your particular circumstances or conditions and of the completeness of the information available from all sources to assure both the proper use of the material described herein and the safety and health of employees.



# TRANSFILM®

## ANTI-TRANSPIRANT & STICKER

### AN EMULSION OF POLYETHYLENES – POLYTERPENES

Principal Functioning Agents:

Polymeric terpenes.....	13.54%
Oxidized polyethylene.....	14.93%
Constituents Ineffective as Spray Adjuvants.....	71.53%
<b>TOTAL</b>	<b>100.00%</b>



**READ THE ENTIRE LABEL FIRST.**

### GENERAL INFORMATION

TRANSFILM® is an improved anti-transpirant that effectively reduces the water loss of plants. Coating the leaves with a thin film of TRANSFILM can provide a water-impermeable barrier that reduces the water loss from transpiration. TRANSFILM will coat the leaf surface with a clear, glossy film that remains durable and stable.

TRANSFILM is a mixture of polyethylenes and polyterpenes and forms an emulsion with water. TRANSFILM combines the features of a uniform film coverage on the leaves with the ease of use. Applications of TRANSFILM can complement sound water management practices and can improve the establishment and survival of plants exposed to extreme or adverse conditions.

Landscape contractors, retail garden centers, wholesalers, and municipalities have applied TRANSFILM to deciduous trees, conifers, container stock, and bedding plants. Anti-transpirants such as TRANSFILM are applied to leaf surfaces to relieve the plant from water stress during storage, shipping, and establishment. For example, bare-root and burlap transplants may suffer transplant shock because the water absorption rate of the roots cannot match the transpiration rate. Foliar applications of TRANSFILM before transplanting help the transplant when the root system cannot compensate for the amount of water loss by transpiration. So, the benefits of TRANSFILM are that transplant shock can be decreased, plant losses can be minimized, and the transplant season can be extended.

TRANSFILM may decrease the blue color of plants with blue-green leaves or needles such as Colorado Blue Spruce and Blue Rug Juniper. Once the blue color has been reduced, it will not return to leaves and needles which were treated. The color of leaves and needles which emerge after treatment will not be affected. Treated plants are not otherwise harmed.

### MIXING INSTRUCTIONS AND CLEAN-UP

#### SPRAY PREPARATION:

Check the spray tank and the equipment for cleanness before preparing the spray solution. TRANSFILM should be mixed with water. Do not combine pesticides with TRANSFILM except when the labeling of the pesticide permits a tank mixture.

Fill the spray tank with 1/2 to 3/4 of the required amount of water and begin agitation. Add the required amount of TRANSFILM, and add the balance of water. Maintain agitation during mixing and spraying to ensure a uniform emulsion. Refer to Table 1 for quick-mix instructions.

**Cleaning the spray equipment:** Immediately clean the spray equipment with a soap solution according to the following instructions. Prepare a soap solution by mixing one (1) cup of detergent with two (2) gallons of water.

### MIXING CHART

**Table 1. Quick-mix instructions for preparing 1 to 100 gallons of spray solution at 2.5 to 10% concentrations (v/v) with water for foliar applications.**

Spray Solutions, Gallons	Amount of TRANSFILM required for:		
	2.5%	5.0%	10.0%
1	3 fl. oz.	6 fl. oz.	12 fl. oz.
2.5	8 fl. oz.	16 fl. oz.	32 fl. oz.
5	1 pint	2 pints	4 pints
10	1 quart	2 quarts	4 quarts
15	0.38 gallon	0.75 gallon	1.5 gallons
20	0.50 gallon	1.0 gallon	2.0 gallons
50	1.25 gallons	2.5 gallons	5.0 gallons
100	2.5 gallons	5.0 gallons	10.0 gallons

Equal Measures: 1.0 gallon = 4 quarts = 8 pints = 128 fl. oz.

Equal Concentrations (v/v):  
 2.5% = one (1) gallon of TRANSFILM mixed with 40 gallons of water.  
 5.0% = one (1) gallon of TRANSFILM mixed with 20 gallons of water.  
 10.0% = one (1) gallon of TRANSFILM mixed with 10 gallons of water.

**For hand operated sprayers (backpack, knapsack, compression, or plunger sprayers):** Rinse spray tank with water. Then, add soap solution and flush hoses, spray gun, nozzles, and strainers. Do not allow the spray solution of TRANSFILM to dry in the sprayer.

**For engine driven pumps (piston, diaphragm, centrifugal, roller, and gear pumps):** Rinse with water. Then add soap solution and flush the tank, hoses, lines, nozzles, strainers, and pumps. Do not allow the spray solution of TRANSFILM to dry in the sprayer.

**To clean surfaces that were sprayed accidentally:** Mix one (1) cup of detergent with two (2) gallons of water. Scrub the surface until clean and rinse with water.

### USE INSTRUCTIONS

#### WINTER DESICCATION

**TO REDUCE WINTER DESICCATION ON CONIFERS AND BROADLEAF EVERGREENS:** Mix one (1) gallon of TRANSFILM with 10 to 20 gallons of water (Table 2). Or prepare a 5.0 to 10.0% (v/v) spray concentration according to the instructions in Table 1. Apply as a thorough cover spray in the late fall or early winter. Spray volumes will vary according to the plant size. Use adequate spray volumes to provide uniform coverage of all needles.

TRANSFILM will maintain the plant vigor throughout the winter.

#### CHRISTMAS TREES AND GREENERY

**TO REDUCE THE DRYING OF CHRISTMAS TREES AND HOLIDAY GREENERY:** TRANSFILM can reduce the drying of Christmas trees and holiday greenery and preserve the plant quality. Mix one (1) gallon of TRANSFILM with 40 gallons of water. Or, prepare a 2.5% (v/v) spray concentration according to the instructions in Table 1.

Apply as a thorough cover spray before shipping or during storage at the retailers. Spray volumes will vary according to the plant size. Use adequate spray volumes to provide uniform coverage of all needles and leaves.

#### TURFGRASS

**TO REDUCE THE DESICCATION OF CUT AND ROLLED SOD:** TRANSFILM can reduce the water loss of rolled sod during transit and can improve the establishment during adverse conditions. Apply as a broadcast treatment to the sod at least one (1) hour before cutting and rolling sod. Apply 2.5 gallons of TRANSFILM per acre. Spray volumes of 50 gallons per acre are recommended to ensure uniform coverage.

**TO REDUCE THE WINTER AND SUMMER DESICCATION OF FINE TURFGRASS (INCLUDING GOLF GREENS):** Apply as a broadcast treatment to the dormant turfgrass (inactive growth) in the late fall or

early winter when the air temperatures are above 32°F. Apply 2.5 gallons of TRANSFILM per acre with spray volumes of 20 to 80 gallons per acre. Or, apply 8 fl. oz. of TRANSFILM per 1,000 sq. ft. of turfgrass with spray volumes of 0.5 to 2.0 gallons per 1,000 sq. ft.

**REDUCE DEW FORMATION ON TURFGRASS:** Dew formation can promote the development of turfgrass diseases. While TRANSFILM is not a fungicide, it has the ability to reduce dew formation and leafblade wetness. Apply 2 gallons of TRANSFILM per acre with spray volumes of 20 to 80 gallons per acre. Or, apply 6.4 fl.oz. of TRANSFILM per 1,000 sq.ft. of turfgrass with spray volumes of 0.5 to 2 gallons per 1,000 sq.ft.

**SPRAY ADDITIVE WITH TURFGRASS FUNGICIDES:** TRANSFILM may be applied in a tank mix with fungicides (snow mold fungicides, for example). TRANSFILM will increase the adherence of the fungicide to the leaf surface.

Use TRANSFILM at 0.25% to 0.5% (v/v) in the final spray mixture with fungicides. This concentration is equal to 1 to 2 quarts of TRANSFILM per 100 gallons of spray solution or 0.3 to 0.6 fl.oz. of TRANSFILM per 1 gallon of spray solution. Do not exceed 0.5% (v/v) of the spray solution. Observe all Directions for Use and Precautionary Statements as specified on the container labels of each fungicide.

### TRANSPLANT SHOCK

**TO REDUCE TRANSPLANT SHOCK TO CONIFERS, BROADLEAF EVERGREENS, DECIDUOUS TREES AND SHRUBS:** Mix one (1) gallon of TRANSFILM with 20 to 40 gallons of water (Table 2). Or, prepare a 2.5 to 5.0% (v/v) spray concentration according to the instructions in Table 1. Choose the spray concentration for the length of protection required.

Apply as a thorough cover spray before shipping and transplanting. Use an adequate spray volume to wet the leaves and stems. Spray the undersides of the leaves and apply to the drip point.

Do not spray or dip the roots of rooted cuttings, balled transplants, or bare-rooted transplants.

	Spray Concentration of TRANSFILM for:	
	• Survival against transplant shock. • Reduction of water loss during transit.	• Conservation of water. • Reduction of desiccation during winter and storage.
<b>Conifers:</b> (Cedars, Cypressess, Fir, Hemlock, Juniper, Pines, Spruce, and Yew)	2.5 to 5%	5 to 10%
<b>Broadleaf Evergreens:</b> (Abelia, Anise, Azalea, Barberry, Boxwood, Camellia, Cotoneaster, Euonymus, Gardenia, Heather, Holly, Jasmine, Leucothoe, Magnolia, Oleander, Photinia, Pittosporum, Privet, Rhododendron)	2.5 to 5%	5 to 10%
<b>Deciduous Trees &amp; Shrubs:</b> (Ash, Basswood, Birch, Bottlebrush, Nonbearing Cherry, Chestnut, Cottonwood, Crabapple, Dogwood, Eleagnus, Elm, Forsythia, Hawthorn, Hibiscus, Hydrangea, Lilac, Linden, Maple, Myrtle, Oak, Russian Olive, Bradford Pear, Redbud, Rose, Spirea, Sycamore, Viburnum, Weigelas)	2.5 to 5%	—
<b>Christmas Trees &amp; Greenery</b>	—	2.5%

\*Not for use on trees/plants grown for food.

**TO REDUCE THE TRANSPLANT SHOCK TO GROUNDCOVERS, VINES, BEDDING PLANTS, AND FLOWERS:** Mix one (1) gallon of TRANSFILM with 20 to 40 gallons of water (Table 3). Or, prepare a 2.5 to 5.0% (v/v) spray concentration according to the instructions in Table 1. Choose the spray concentration for the length of protection required.

Apply as a thorough cover spray or dip the plants before shipping and transplanting. Use an adequate spray volume to wet the leaves and stems. Spray the undersides of the leaves and apply to the drip point. Do not spray or dip the roots of the transplants.

### SALT AIR DAMAGE

Thoroughly wet foliage, then apply using 1 gallon of TRANSFILM in 20 to 40 gallons of water or 2.5 to 5% (v/v) spray concentration according to Table 1.

### SOIL MOISTURE CONSERVATION

**TO CONSERVE THE SOIL MOISTURE FOR GROUNDCOVERS, VINES, BEDDING PLANTS, AND FLOWERS:** TRANSFILM can supplement water management practices. Apply as a foliar application to the established plants before the expected period of soil moisture stress. Apply one (1) gallon of TRANSFILM per acre (Table 3). Spray volumes of 50 gallons per acre are recommended to ensure uniform coverage. Repeat applications as required to maintain the coverage of the new plant growth.

Band sprays and directed sprays to the rows or plants are preferred, and these methods provide complete coverage. A broadcast application with a uniform distribution and thorough coverage is acceptable.

	Spray Concentration of TRANSFILM for:	Amount of TRANSFILM for:
	• Survival against transplant shock.	• Conservation of soil water and plant maintenance.
<i>Groundcovers and Vines:</i> (Ajuga, Honeysuckle, Ivy, Periwinkle, Juniper, Sedum, Pachysandra, Euonymus, Hosta). <i>Bedding Plants: Flowers</i> (Annual and Perennial).	2.5 to 5.0%	1.0 Gallon/Acre

### INDOOR PLANTS

**TO EXTEND THE IRRIGATION INTERVAL OF INDOOR PLANTS:** Periodic applications of TRANSFILM can reduce the water requirements and extend the irrigation intervals of plants maintained in greenhouses, nurseries and other indoor sites. Mix one (1) gallon of TRANSFILM with 40 gallons of water. Or, prepare a 2.5% (v/v) spray concentration according to the instructions in Table 1. Repeat the application at 90 to 120 day intervals or as needed.

Apply as a thorough cover spray. Use an adequate spray volume to wet the leaves and stems. Spray the undersides of the leaves and apply to the drip point.

STORAGE AND DISPOSAL
<b>STORAGE:</b> Keep from freezing.
<b>CONTAINER DISPOSAL:</b> Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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