SAFETY DATA SHEET



TREE-äge® Insecticide

Section 1. Identification

GHS product identifier	: TREE-äge® Insecticide
Product use	: Insecticide.
Supplier's details	: Arborjet 99 Blueberry Hill Road Woburn, MA 01801, USA 1-781-935-9070
e-mail address of person responsible for this SDS	: ajinformation@arborjet.com
Emergency telephone number (with hours of operation)	: 1-800-255-3924 (CHEM-TEL)

Section 2. Hazards 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	 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2
	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 47.9%
GHS label elements	
Hazard pictograms	
Signal word	: Warning
Hazard statements	: Causes serious eye irritation. Suspected of damaging fertility or the unborn child.
Precautionary statements	
Prevention	 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye or face protection: Recommended: splash goggles. Wash hands thoroughly after handling.
Response	 IF exposed or concerned: Get medical attention. 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.
Storage	: Store locked up.
Disposal	 Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture Other means of identification

: Mixture

: Not available.

CAS number/other identifiers

CAS number : Not applicable.

: 1 Liter 040-4100 8 Case 040-4105

Product code

Ingredient name	%	CAS number
Tetrahydrofurfuryl alcohol (THFA)	≥25 - <50	97-99-4
Avermectin B1, 4"-deoxy-4"-(methylamino)-, (4"R)-, benzoate (1:1)	≥3 - <5	155569-91-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment 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	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position 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. Get medical attention. 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	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. 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	: Causes serious eye irritation.			
Inhalation	: No known significant effects or critical hazards.			
Skin contact	: No known significant effects or critical hazards.			
Ingestion	: No known significant effects or critical hazards.			
Over-exposure signs/symptoms				
Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness			

Section 4. First aid measures

Inhalation	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations	
Skin contact	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations	
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations	

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

Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (<15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valporic acid) in patients with potentially toxic emamectin benzoate exposure
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, foam or CO2. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide Toxic gas
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.
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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised 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 environmental pollution (sewers, waterways, soil or air).
Methods and materials for containment and cleaning up		
Small spill	:	Stop leak if without risk. Move containers from spill area. 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. 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.

Section 7. Handling and storage

Precautions for safe handling

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
: 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.
: Store in accordance with local regulations. 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. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name		Exposure limits
Tetrahydrofurfuryl alcohol		AIHA WEEL (United States, 10/2011). TWA: 0.5 ppm 8 hours.
Appropriate engineering controls	local exhaust ventilation or c	dust, fumes, gas, vapor or mist, use process enclosures, other engineering controls to keep worker exposure to w any recommended or statutory limits.
Environmental exposure controls	they comply with the require cases, fume scrubbers, filter	or work process equipment should be checked to ensure ements of environmental protection legislation. In some rs or engineering modifications to the process equipment emissions to acceptable levels.
Individual protection measure	ures	
Hygiene measures	eating, smoking and using the Appropriate techniques show	face thoroughly after handling chemical products, before he lavatory and at the end of the working period. uld be used to remove potentially contaminated clothing. g before reusing. Ensure that eyewash stations and safety rkstation location.
Eye/face protection	assessment indicates this is gases or dusts. If contact is	with an approved standard should be used when a risk necessary to avoid exposure to liquid splashes, mists, possible, the following protection should be worn, unless higher degree of protection: chemical splash goggles. gles
Skin protection		
Hand protection	worn at all times when hand necessary. Considering the during use that the gloves an noted that the time to breakt glove manufacturers. In the protection time of the gloves	bus gloves complying with an approved standard should be ling chemical products if a risk assessment indicates this is parameters specified by the glove manufacturer, check re still retaining their protective properties. It should be through for any glove material may be different for different case of mixtures, consisting of several substances, the s cannot be accurately estimated. al: butyl rubber, nitrile rubber, neoprene rubber, polyvinyl
Body protection		ent for the body should be selected based on the task being blved and should be approved by a specialist before
Other skin protection		ny additional skin protection measures should be selected formed and the risks involved and should be approved by a is product.
Respiratory protection	standard if a risk assessmer based on known or anticipat working limits of the selected	ifying or air-fed respirator complying with an approved nt indicates this is necessary. Respirator selection must be ted exposure levels, the hazards of the product and the safe d respirator. Use a NIOSH approved respirator with an e or canister with any R, P or HE filter.
Personal protective equipment (Pictograms)		

Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Liquid.
Color	: Blue.
Odor	: Aromatic.
Odor threshold	: Not available.
рН	: 4.6
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: >107.8°C (>226°F) [Pensky-Martens.]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: Not available.
Solubility	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: 350°C (662°F)
Decomposition temperature	: Not available.
Viscosity	: Not available.

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	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
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
Tetrahydrofurfuryl alcohol Avermectin B1, 4"-deoxy-4"- (methylamino)-, (4"R)-, benzoate (1:1)	LD50 Oral LD50 Oral	Rat Rat	1600 mg/kg 76 mg/kg	-
TREE-äge	LC50 Inhalation Gas. LD50 Dermal LD50 Oral	Rat Rabbit Rat - Female	>2.54 mg/l >5000 mg/kg 3129 mg/kg	4 hours - -

Irritation/Corrosion

Section 11. Toxicological information

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Product/ingredient name	Result	Species	Score	Exposure	Observation
Tetrahydrofurfuryl alcohol	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
TREE-äge	Eyes - Severe irritant Skin - Mild irritant	Rabbit Rabbit	-	-	-

<u>Sensitization</u>

J	Route of exposure	Species	Result
TREE-äge	skin	Guinea pig	Not sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

<u>Specific target organ toxicity (repeated exposure)</u> Not available.

Aspiration hazard

Not available.

Information on the likely : Not available. routes of exposure

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

Section 11. Toxicological information

Delayed and immediate effect	cts and also chronic effects from short and long term exposure
Short term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	ects
Not available.	
General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: Suspected of damaging the unborn child.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Avermectin B1, 4"-deoxy-4"- (methylamino)-, (4"R)-, benzoate (1:1)	Acute EC50 1 ppb Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 174 ppb Fresh water Chronic NOEC 0.088 ppb Marine water Chronic NOEC 6.5 ppb	Fish - Oncorhynchus mykiss Daphnia - Daphnia magna Fish - Pimephales promelas	96 hours 21 days 32 days

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

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

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information DOT TDG **Mexico** ADR/RID IMDG IATA Classification Classification Classification UN3082 UN3082 UN3082 UN number Not regulated. Not available. UN3082 ENVIRONMENTALLY ENVIRONMENTALLY ENVIRONMENTALLY ENVIRONMENTALLY **UN proper** Not available. HAZARDOUS HAZARDOUS HAZARDOUS HAZARDOUS shipping name SUBSTANCE, SUBSTANCE. SUBSTANCE, SUBSTANCE. LIQUID, N.O.S. LIQUID, N.O.S. LIQUID, N.O.S. LIQUID, N.O.S. (Avermectin (Avermectin (Avermectin (Avermectin B1, 4"-deoxy-B1, 4"-deoxy-B1, 4"-deoxy-B1, 4"-deoxy-4"-4"-4"-4"-(methylamino)-, (methylamino)-, (methylamino)-, (methylamino)-, (4"R)-, (4"R)-, (4"R)-, (4"R)-, benzoate (1:1)) benzoate (1:1)) benzoate (1:1)) benzoate (1:1)) Transport Not available. 9 9 9 9 hazard class(es) **Transport Label** ¥_2 ¥_2 ¥ Ш Ш Ш Ш Packing group Yes. Marine Yes. Environmental No. No. Yes. Pollutant: Yes hazards Additional The The marine The The environmentally environmentally environmentally pollutant mark information hazardous hazardous is not required hazardous substance substance when substance mark is not mark is not transported in mark is not required when required when sizes of ≤5 L or required when transported in transported in ≤5 kg. transported in sizes of ≤5 L or sizes of ≤5 L or sizes of ≤5 L or ≤5 kg. ≤5 kg. ≤5 kg. Tunnel code (E)

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 14. Transport information

Transport in bulk according : Not available. to Annex II of MARPOL 73/78 and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations	1	TSCA 8(a) CDR E	Exempt/Part	ial exemption:	Not determin	ed	
	United States inventory (TSCA 8b): Not determined.						
		FIFRA Information Environmental Prof federal pesticide la hazard information pesticide chemical label:	otection Ager aw. These re n required for	ncy and is subj equirements di r safety data sh	ect to certain I ffer from the c neets, and for	abeling require lassification cr workplace labe	ements under iteria and els of non-
		WARNING: Causes substantia Do not get in eyes Wear protective e Harmful if swallow Wash thoroughly chewing gum, usin Remove and wash	s or on clothir yewear. ved. with soap an ng tobacco, o	ng. d water after ha	et.	efore eating, dr	inking,
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	:	Not listed					
Clean Air Act Section 602 Class I Substances	:	Not listed					
Clean Air Act Section 602 Class II Substances	:	Not listed					
DEA List I Chemicals (Precursor Chemicals)	:	Not listed					
DEA List II Chemicals (Essential Chemicals)	:	Not listed					
SARA 302/304							
Composition/information	on	ingredients					
No products were found.							
SARA 304 RQ	:	Not applicable.					
SARA 311/312							
Classification	:	Immediate (acute) Delayed (chronic)					
Composition/information	on	ingredients					
Name		%	Fire hazard	Sudden release of	Reactive	Immediate (acute) bealth	Delayed (chronic)

		hazard	release of pressure		(acute) health hazard	(chronic) health hazard
Tetrahydrofurfuryl alcohol Avermectin B1, 4"-deoxy-4"- (methylamino)-, (4"R)-, benzoate (1:1)	≥25 - <50 ≥3 - <5	No. No.	No. No.	No. No.	Yes. Yes.	Yes. No.

State regulations

Section 15. Regulatory information

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Massachusetts	: The following components are listed: TETRAHYDROFURFURYL ALCOHOL
New York	: None of the components are listed.
New Jersey	: None of the components are listed.
Pennsylvania	: The following components are listed: 2-FURANMETHANOL, TETRAHYDRO-
International regulation	<u>IS</u>
<u>Chemical Weapon Co</u>	nvention List Schedules I, II & III Chemicals
Not listed.	
Montreal Protocol (An	nexes A, B, C, E)
Not listed.	
Stockholm Conventio	n on Persistent Organic Pollutants
Not listed.	
	n on Prior Inform Consent (PIC)
Not listed.	
	col on POPs and Heavy Metals
Not listed.	
International lists	
National inventory	
Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
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Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
y = - ,	On basis of test data Calculation method Calculation method

Date of issue/Date of revision

Version : 2

11/12

Section 16. Other information

<u>History</u>	
Date of printing	: 02/20/2015.
Date of issue/Date of revision	: 02/20/2015.
Date of previous issue	: July 2011
Version	: 2
Key to abbreviations	 ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	: Not available.

✓ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.