SPF Treated ACQ

SECTION 1. IDENTIFICATION

Product Identifier	SPF Treated ACQ
Other Means of Identification	ACQ Preserve and Preserve Plus Pressure Treated Wood
Other Identification	Spruce Pine Fir (SPF) treated wood with alkaline copper and quaternary ammonium compounds
Product Family	Treated Lumber
Recommended Use	SPF product is used for general lumber purpose. Note the majority of the hazards are determined based on wood dust (softwood) treated with quaternary ammonium compounds (ACQ) generated as a result of cutting, sanding or disturbing the product.
Manufacturer/Supplier Identifier	West Fraser, Williams Lake Plywood, LVL (Rocky Mountain House) and Alberta Plywood (Edmonton), Various Addresses, BC and AB, Various Postal Codes
Emergency Phone No.	West Fraser (Name not available), 1-604-895-2700 (fax: 1-604-681-6061) Chemtrec, 1-800-424-9300
SDS No.	006
Date of Preparation	March 10, 2016

SECTION 2. HAZARD IDENTIFICATION

Classification

Combustible dust - Category 1; Acute toxicity (Oral) - Category 2; Skin irritation - Category 2; Eye irritation - Category 2A; Carcinogenicity - Category 1; Specific target organ toxicity (single exposure) - Category 3; Specific target organ toxicity (repeated exposure) - Category 1; Aquatic hazard (Acute) - Category 2; Aquatic hazard (Chronic) - Category 2

Label Elements

Signal Word:
Danger
Hazard Statement(s):

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H350	May cause cancer.
H335	May cause respiratory irritation.
H372	Causes damage to organs (lungs, respiratory system, skin, liver) through prolonged or repeated exposure if inhaled and/or following skin contact.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statement(s):
Prevention:

P264	Wash hands and skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
P330 Rinse mouth.
P321 Specific treatment (see supplemental first aid instruction on this label).
P302 + P352 IF ON SKIN: Wash with plenty of water.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

May form combustible dust concentrations in the air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
softwood, allergenic and non-allergenic species	Not available	60-100	Wood dust (ligno-cellulosic materials)
Ethanolamine	141-43-5	3-7	monoethanolamine
Copper complex expressed as copper oxides	14215-52-2	1-5	Copper, bis(2-aminoethanolato-N,O)-
Benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	0.1-1	alkyl dimethyl benzyl ammonium chloride
Ammonium, didecyldimethyl-, chloride	7173-51-5	0.1-1	didecyl dimethyl ammonium chloride
Didecyldimethylammonium carbonate/bicarbonate	CBI*	0.1-1	dialkyl dimethyl ammonium carbonate/bicarbonate

Notes

Concentration of ingredients is presented according to WHMIS. Composition of softwood is estimated to be 90-98.5%. Other ingredients include ethanolamine (0.8-5.5%), benzyl-C12-18-alkyldimethyl chlorides (0-1%), ammonium didecyldimethyl chloride (0-1%), dialkyl dimethyl ammonium carbonate/bicarbonate (0-1%) and copper complex expressed as copper oxides.

This product contains one of the three given quaternary ammonium compounds (benzyl-C12-18-alkyldimethyl chlorides, ammonium didecyldimethyl chloride, and dialkyl dimethyl ammonium carbonate/bicarbonate) depending on the type of ACQ wood preservative used.

The hazards presented predominantly relate to wood dust pressure treated with ACQ products from softwood, allergenic and non-allergenic species. No CAS Number is available.
Concentrations are expressed in % weight/weight.

N.Av. = Not Available

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), get medical attention. Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment).

Skin Contact

Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for at least 20 minutes. If skin irritation or a rash occurs, get medical advice/attention. Clean contaminated clothing, shoes and leather goods.

Eye Contact

Rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Ingestion

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

First-aid Comments

Provide general supportive measures (comfort, warmth, rest). If exposed or concerned, get medical advice/attention.

Most Important Symptoms and Effects, Acute and Delayed

Information pertains to wood dust. May cause cancer. Can irritate the nose and throat. Can cause lung injury. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest. May cause asthma or an asthma-like reaction in some people. Repeated or prolonged exposure can irritate the skin. May cause dermatitis and an allergic skin reaction in some people.

Immediate Medical Attention and Special Treatment

Target Organs

Lungs, respiratory system, skin, eyes, liver.

Special Instructions

Not available based on the literature reviewed.

Medical Conditions Aggravated by Exposure

No information on the pure product is available based on the literature reviewed. Information based on the ingredients indicate pre-existing skin and respiratory conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Wood dust is combustible. Use extinguishing agent suitable for wood and for surrounding fire: flammable / combustible information is not available for the pure product.
Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Combustible dust. May form combustible dust concentration in air.
Hazardous and thermal combustion products include: carbon monoxide, carbon dioxide, soot, and toxic and irritating fumes and gases, such as aldehydes, organic acids and polynuclear aromatic compounds. Never burn treated wood. See Section 10 Stability and Reactivity for more information.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous

vapours or gases and smoke.
Dust explosion hazard. Use water spray or fog to prevent dust formation and minimize risk of explosion.
If entry into area is required wear positive pressure SCBA and full Bunker Gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

For release of large quantities of dust: evacuate the immediate area. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Before entry, especially into confined areas, spray water or use a water mister to reduce dust to a minimum. Remove or isolate incompatible materials, ignition sources as well as other hazardous materials.

Environmental Precautions

Although none specifically required for wood dusts, ingredients exist in the product which may be harmful to aquatic or terrestrial life. It is good practice to prevent releases into the environment. If a large quantity of dust is inside a building, prevent it from entering drains, ventilation systems and confined areas. Do not allow into sewers, on the ground or into waterways. Never burn treated wood.

Methods and Materials for Containment and Cleaning Up

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Avoid dust generation as wood dust is combustible. Apply water to dust before cleaning up or shovelling. Avoid dry sweeping or using pneumatic powered air hoses to blow away dust. A high efficiency particulate air (HEPA) vacuum (explosion proof) may be used. Place dust into suitable, covered, labeled containers for disposal.

Other Information

Report large dust releases into the environment to local health, safety and environmental authorities, as required. Dispose dust in accordance with municipal, province/state, and federal requirements.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear gloves (nitrile) to prevent skin contact irritation. Avoid generating dusts. Protect eyes from dust.
Avoid breathing in dust and prevent skin contact (repeated or prolonged skin contact). Wear personal protective equipment to avoid direct contact with the dust.
General hygiene considerations: do NOT smoke in work areas. Do NOT eat, drink or store food in work areas. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

Conditions for Safe Storage

Store in an area that is cool and dry and separate from incompatible materials (see Section 10: Stability and Reactivity). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Follow all precautions given on this safety data sheet.
Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH® TLV®		OSHA PEL		NIOSH REL	
Chemical Name	**TWA**	**STEL [C]**	**TWA**	**STEL**	**TWA**	**STEL**
softwood, allergenic and non-allergenic species	1.0 mg/m3 (I) A4		15 mg/m3		1.0 mg/m3	
Copper complex expressed as copper oxides	0.2 mg/m3		0.1 mg/m3		0.1 mg/m3	
Ethanolamine	3 ppm	6 ppm		6 ppm	3 ppm	6 ppm
Benzyl-C12-18-alkyldimethyl, chlorides	25 ppm	35 ppm				

The OSHA PEL of 15 mg/m³ is for total dust (particulates not otherwise classified (PNOC)) and has a TWA exposure limit of 5 mg/m³ for the respirable fraction.

The exposure limit for Benzyl-C12-C18 alkyldimethyl, chlorides is based on ammonia gas (ACGIH TLV for ammonia).
Allergenic and non-allergenic softwood species have an IARC 1 notation (Carcinogenic to Humans).
All softwood dusts have an ACGIH A4 notation (Not Classifiable as a Human Carcinogen).
The product may be hazardous if disturbed to create dust (e.g. sanding, cutting). Exposure controls are recommended based on wood dust of softwood, allergenic and non-allergenic species treated with alkaline copper and quaternary ammonium compounds.
The exposure limits for copper complex expressed as copper oxides is presented from copper oxide.

Consult local authorities for provincial or state exposure limits. ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. C = Ceiling limit. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. I = Inhalable fraction. A4 = Not classifiable as a human carcinogen. NIOSH = National Institute for Occupational Safety and Health. REL = Recommended Exposure Limit.

Appropriate Engineering Controls

For large scale use of this product (industrial manufacturing):
Engineering methods to control hazardous conditions (dust) are preferred. Methods include mechanical ventilation (dilution and local exhaust), process or personnel enclosure, control of process conditions, and process modification (e.g., substitution with a less hazardous material).
Do not allow dust from the product to accumulate in the air in work or storage areas, or in confined spaces.
Exhaust dust directly to the outside through explosion proof ducting / ventilation systems, taking any necessary precautions for environmental protection.

If engineering controls, administrative controls and work practices are not effective in controlling exposure to dust from this product, then wear suitable personal protective equipment including approved respiratory protection.

Individual Protection Measures

Eye/Face Protection

Wear safety glasses with side shields or goggles if dusty conditions exist or are likely to be generated.

Skin Protection

Based on treated wood dust: wear protective clothing and gloves.
Wear gloves (e.g., nitrile) to prevent skin contact irritation.Wear personal protective clothing (cotton coveralls or disposable Tyvek coveralls) to protect against skin contact depending on the work task and risk assessment.
Launder clothes before re-use. Wash separately from other clothes.

Respiratory Protection

Respirators are not normally required if the product is used with minimal disturbance and minimal dust is generated. The following respirator requirements are recommended for dusty conditions.
If the product is disturbed (e.g., cutting, sanding): wear a minimum half facepiece respirator with P100 cartridges for protection against treated wood dusts and their applicable exposure standards. Wear a half facepiece respirator for protection up to 10 times the exposure standard and a tight fitting full facepiece respirator for protection up to 50 times the exposure standard. Wear a full facepiece respirator if eye irritation occurs.
Recommendations apply only to NIOSH approved respirators. Consult an Industrial Hygienist for respirator decisions depending on work environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Light green.
Odour	Not available
Odour Threshold	Not available
pH	Not applicable
Melting Point/Freezing Point	Not applicable (melting); Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not available

Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	< 1
Solubility	Insoluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not applicable
Auto-ignition Temperature	204 - 260 ºC (399 - 500 ºF)
Decomposition Temperature	Not available
Viscosity	Not applicable (kinematic); Not applicable (dynamic)

Other Information

Physical State	Solid
Molecular Formula	Not available
Molecular Weight	Not available
Critical Temperature	Not available
Other Physical Property 1	Lower Explosive Limit: 40 g/m³ (wood dust); Upper Explosive Limit: Variable (wood dust)
Other Physical Property 2	The autoignition temperature, LEL and UEL for wood dust vary with exact composition, particle size, moisture level, rate of heating and dust concentration.

SECTION 10. STABILITY AND REACTIVITY

Reactivity

See Incompatible Materials for a list of chemical reactions that could occur with other materials.

Chemical Stability

Normally stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Possibility of Hazardous Reactions

No information is available for the pure product based on the literature reviewed. Ingredients with information available is presented:
Softwood, allergenic and non-allergenic species: None expected under normal conditions of storage and use.
Monoethanolamine: None expected under normal conditions of storage and use.
Copper complex expressed as copper oxides: None expected under normal conditions of storage and use.
Quaternary ammonium compounds: None known.

Conditions to Avoid

Keep away from heat, sparks, open flames, static discharge, and other ignition sources. Avoid generation of dust through cutting, sanding or disturbing the pure product. May form explosive dust-air mixtures. May auto-ignite at temperatures above 204.0 ºC (399.2 ºF).

Incompatible Materials

No information is available for the pure product based on the literature reviewed. Ingredients with information available is presented.
Softwood, allergenic and non-allergenic species: Incompatible with oxidizing materials.
Monoethanolamine: Strong oxidizers, strong acids, acetic anhydride, halogenated hydrocarbons.
Copper complex expressed as copper oxides: hydrazine, hydrogen, sodium hypobromite, manganese dioxide.
Quaternary ammonium compounds: Strong acids.
Corrosivity to metals: This product may react with metals. Ingredients with information available is presented:
Monoethanolamine: iron, type 3003 aluminum, cast B-356 aluminum, copper and alloys, brass, bronze, zinc, zinc alloys, galvanized steel.
Copper complex expressed as copper oxides: explodes when heated with powdered aluminum, anilinium perchlorate, magnesium and phthalic anhydride.
Quaternary ammonium compounds: Contact with copper, tin, aluminum, and zinc alloys (causes corrosion).

Hazardous Decomposition Products

No information is available for the pure product based on the literature reviewed. Ingredients with information available

is presented:
Softwood, allergenic and non-allergenic species: Under normal conditions of storage and use, hazardous decomposition products should not be produced. If a fire occurs, hazardous combustion products will be emitted: carbon monoxide, carbon dioxide, soot, and toxic and irritating fumes and gases, such as aldehydes, organic acids and polynuclear aromatic compounds.
Monoethanolamine: Combustion may produce irritants and toxic gases (nitrogen oxides).
Copper complex expressed as copper oxides: decomposes to cuprous oxide and oxygen at 1026-1030ºC (copper oxide)
Quaternary ammonium compounds: May decompose in a fire and produce irritating vapours and toxic gases, ammonia, copper compounds and nitrogen oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

The predominant toxicity of treated wood products pertains to the dust created or generated by the processing or disturbance (cutting, sanding) of the raw product. This product contains one of the three given quaternary ammonium compounds depending on the type of ACQ wood preservative used. Toxicity information is presented as quaternary ammonium compounds where applicable.

Likely Routes of Exposure

Inhalation; skin contact; eye contact; incidental ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Copper complex expressed as copper oxides		0.5-2 mg/kg (rat)	
Ethanolamine	> 1210 mg/m3 (mouse) (4-hour exposure) (aerosol)	1720 mg/kg (female rat)	1000 mg/kg (rabbit)
Benzyl-C12-18-alkyldimethyl, chlorides		850 mg/kg (rat)	2300 mg/kg (rabbit)
Ammonium, didecyldimethyl-, chloride		84 mg/kg (rat)	2750 mg/kg (rabbit)
Didecyldimethylammonium carbonate/bicarbonate	Not available	245 mg/kg (rat)	< 1000 mg/kg (rat)

Inhalation ATEmix = 17.29 mg/L (4-hour exposure) (dust/mist)
0% of the mixture consists of an ingredient or ingredients of unknown acute toxicity (inhalation)
Softwood, allergenic and non-allergenic LD50 oral: > 5000 mg/kg
Oral ATEmix = 9.98 mg/kg
0% of the mixture consists of an ingredient or ingredients of unknown acute toxicity (oral)
Dermal ATEmix = 11365.68 mg/kg
0% of the mixture consists of an ingredient or ingredients of unknown acute toxicity (dermal)

Skin Corrosion/Irritation

Softwood, allergenic and non-allergenic species: handling and/or processing this material may generate a dust which can cause irritation of the skin.
Monoethanolamine: corrosive to the skin.
Copper complex expressed as copper oxides: may cause irritation.
Quaternary ammonium compounds: may be corrosive / irritating, and cause ulceration or blistering.
Based on information available, product or dust from the product is an irritant, but is not expected to be corrosive.

Serious Eye Damage/Irritation

Softwood, allergenic and non-allergenic species: handling and/or processing this material may generate a dust which can cause irritation of the eyes.
Monoethanolamine: corrosive to the eyes.
Copper complex expressed as copper oxides: may cause irritation.
Quaternary ammonium compounds: may be corrosive / irritant, possible blindness.
Based on information available, product or dust from the product is an irritant, but is not expected to be corrosive.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Softwood, allergenic and non-allergenic species: handling and/or processing this material may generate a dust which can cause respiratory tract irritation, asthma, coughing / wheezing, allergic reactions and sinusitis.
Monoethanolamine: irritation to the nose, throat and respiratory tract.
Copper complex expressed as copper oxides: irritation to the nose, throat and respiratory tract.
Quaternary ammonium compounds: corrosive / irritant to the upper respiratory tract. Breathing difficulty and CNS effects.

Skin Absorption

Monoethanolamine: Can be absorbed through the skin.

Ingestion

Monoethanolamine: may cause irritation to the throat, stomach, abdominal pain, nausea and vomiting if ingested.
Copper complex expressed as copper oxides: nausea, vomiting, poisoning.
Quaternary ammonium compounds: corrosive to GI tract, vomiting, abdominal pain.

Aspiration Hazard

Not applicable.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Softwood, allergenic and non-allergenic species: repeated inhalation of dust may cause lung damage. Chronic exposure to wood dusts may cause nasal cancer, dermatitis reactions, asthma, pneumonitis, coughing, changes in nasal mucosa, wheezing, fever and other signs and symptoms associated with chronic bronchitis.
Monoethanolamine: severe bronchitis, pulmonary edema, dermatitis. CNS stimulation at low concentrations and CNS depression at high concentrations; possible liver effects (unconfirmed).
Copper complex expressed as copper oxides: liver disease, may induce eczema or allergic responses in some individuals.
Quaternary ammonium compounds: Effects of chemical pneumonitis, pulmonary edema, liver and kidney disorders due to inhalation of vapours. Possible effects on the liver and central nervous system evident in rat studies (relevance to humans is unknown). May cause skin ulceration, dermatitis.

Respiratory and/or Skin Sensitization

No evidence in literature reviewed on product or ingredients.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
softwood, allergenic and non-allergenic species	Group 1	A4	Not Listed	Not Listed
Copper complex expressed as copper oxides	Not Listed	Not designated	Not Listed	Not Listed
Ethanolamine	Not Listed	Not designated	Not Listed	Not Listed
Benzyl-C12-18-alkyldimethyl, chlorides	Not Listed	Not designated	Not Listed	Not Listed
Ammonium, didecyldimethyl-, chloride	Not Listed	Not designated	Not Listed	Not Listed
Didecyldimethylammonium carbonate/bicarbonate	Not Listed	Not designated	Not Listed	Not Listed

No information is available for the pure product based on the literature reviewed. Ingredients with information available is presented:
Allergenic and non-allergenic softwood species: IARC 1 notation (Carcinogenic to Humans). Wood dusts are a potential nasal cancer. All softwood dusts have an ACGIH A4 notation (Not Classifiable as a Human Carcinogen).
Key to Abbreviations

IARC = International Agency for Research on Cancer. Group 1 = Carcinogenic to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A4 = Not classifiable as a human carcinogen. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

Reproductive Toxicity

Development of Offspring

No information on pure product.
Monoethanolamine: does not cause developmental toxicity.
Quaternary ammonium compounds: no developmental toxicity observed in rat studies. A rabbit study indicated an increased number of dead fetuses/litter and decreased fetal body weight at 10 mg/kg.

Sexual Function and Fertility

No evidence in literature reviewed on product or ingredients.

Effects on or via Lactation

No information is available for the pure product or the ingredients based on the literature reviewed.

Germ Cell Mutagenicity

No evidence in literature reviewed on product or ingredients.

Interactive Effects

No evidence in literature reviewed on pure product.
Monoethanolamine: a study with mice showed ingestion enhanced the repair of the liver injury caused by intraperitoneal injection of carbon tetrachloride 24 hours earlier.

SECTION 12. ECOLOGICAL INFORMATION

Inclusion of Ecological Information on a Safety Data Sheet (SDS) is optional under the US Hazard Communication Standard (2012), and the Canadian WHMIS regulations. In other jurisdictions, inclusion of Ecological Information may be a requirement. For specific requirements, contact the relevant regulatory authorities in the jurisdiction where the SDS is intended to be used.

Lumber treated with quaternary ammonium compounds should be stored under cover and at least 100 feet away from water sources/water bodies.

Ecotoxicity

The wood preservatives in this product can be harmful to both terrestrial and aquatic plant or animal life.

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Ethanolamine	150 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; static)			
Benzyl-C12-18-alkyldimethyl, chlorides	0.52 mg/L (96-hour)	0.47 mg/L (48-hour)	0.87 mg/L (96-hour)	
Ammonium, didecyldimethyl-, chloride	0.27 mg/L (Lepomis macrochirus (bluegill); 96-hour; fresh water; static)			0.064 mg/L (48-hour)
Didecyldimethylammonium carbonate/bicarbonate	0.241 mg/L (Lepomis macrochirus (bluegill); 96-hour)	0.057 mg/L (Daphnia magna (water flea); 48-hour)		0.022 mg/L (96-hour)

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea

Benzyl-C12-18-alkyldimethyl, chlorides		0.032 mg/L	0.004 mg/L	
Didecyldimethylammonium carbonate/bicarbonate	0.015 mg/L (Pimephales promelas (fathead minnow))		0.023 mg/L (Daphnia magna (water flea); 21-day)	

Persistence and Degradability

No information is available for the pure product. Ingredients with information is presented:
Monoethanolamine: will exist as a vapour if release to air and if released to water will not adsorb onto solids/sediment.
Quaternary ammonium compounds: readily biodegradable.

Bioaccumulative Potential

No information is available for the pure product. Ingredients with information is presented:
Monoethanolamine: the potential for bioconcentration in aquatic organisms is low.
Quaternary ammonium compounds: biodegrades in soil and may bioconcentrate in organisms.

Mobility in Soil

No information is available for the pure product. Ingredients with information is presented:
Monoethanolamine: very high mobility.
Quaternary ammonium compounds: will migrate from water to soil/sediment. Immobile in soil.

Other Adverse Effects

No information is available for the pure product or the ingredients based on the literature reviewed.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Store product for disposal as described under Storage in Section 7 of this safety data sheet.
Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	2491	Ethanolamine (Ethanolamine)	8	III
US DOT	1760	corrosive liquid N.O.S.	8	III
US DOT	2923	corrosive toxic N.O.S. (Ammonium, didecyldimethyl-, chloride)	8 (6.1)	II
US DOT	3267	corrosive liquid, basic, organic, N.O.S. (Didecyldimethylammonium carbonate/bicarbonate)	8	III
IATA (Air)	2491	Ethanolamine (Ethanolamine)	8	III
IATA (Air)	1760	corrosive liquid N.O.S.	8	III
IATA (Air)	2923	corrosive toxic N.O.S. (Ammonium, didecyldimethyl-, chloride)	8 (6.1)	II
IATA (Air)	3267	corrosive liquid, basic, organic, N.O.S. (Didecyldimethylammonium carbonate/bicarbonate)	8	III
IMO (Marine)	2491	Ethanolamine (Ethanolamine)	8	III
IMO (Marine)	1760	corrosive liquid N.O.S., marine pollutant	8	III
IMO (Marine)	2923	corrosive toxic N.O.S. (Ammonium, didecyldimethyl-, chloride)	8 (6.1)	II
IMO (Marine)	3267	corrosive liquid, basic, organic, N.O.S. (Didecyldimethylammonium carbonate/bicarbonate)	8	III

Environmental Hazards	Marine Pollutant (Copper complex expressed as copper oxides)
Special Precautions	Please note: No information is available for the pure product based on the literature reviewed. Wood and wood products treated with wood preservatives are exempt from TDG regulations. Information is presented for ingredients: Ethanolamine: this compound is not listed as a marine pollutant by TDG.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Emergency Response Guide No.	No information is available for the pure product based on the literature reviewed.

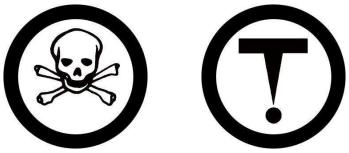
SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Wood and wood products are exempt from WHMIS reporting requirements and classification and disclosure is voluntary on MSDS. GHS reporting requirements are based on the intended use of the product.

Canada

WHMIS 1988 Classification



Class D1A Class D2A; D2B

D1A - Very Toxic; D2A - Very Toxic (Carcinogenicity); D2B - Toxic (Skin irritant; Eye irritant)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Ethanolamine, didecyl dimethyl ammonium chloride, and alkyl dimethyl benzyl ammonium chloride are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)

No ingredients are listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Ethanolamine, didecyl dimethyl ammonium chloride, and alkyl dimethyl benzyl ammonium chloride are listed on the TSCA Listing.

Additional USA Regulatory Lists

Ethanolamine:
SARA 302 Components: not subject to the reporting requirements of SARA Title III, Section 302.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21): not subject to the reporting requirements of SARA Title III, Section 311/312.
SARA Title III Section 313 (40 CFR 372.65): not subject to the reporting requirements of SARA Title III, Section 313.

Copper complex expressed as copper oxides:
SARA 302 Components: not subject to the reporting requirements of SARA Title III, Section 302.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21): Acute health hazard
SARA Title III Section 313 (40 CFR 372.65): Yes – 0.3-2.1%
Clean Water Act (307): Yes

Alkyl dimethyl benzyl ammonium chloride:
SARA 302 Components: not subject to the reporting requirements of SARA Title III, Section 302.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21): Acute health hazard
SARA Title III Section 313 (40 CFR 372.65): not subject to the reporting requirements of SARA Title III, Section 313.
Food and Drug Act (FDA): Yes
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): Yes

Didecyl dimethyl ammonium chloride:
SARA 302 Components: not subject to the reporting requirements of SARA Title III, Section 302.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21): Acute health hazard; reportable quantity (RQ) = 100 lb
SARA Title III Section 313 (40 CFR 372.65): not subject to the reporting requirements of SARA Title III, Section 313.

Dialkyl dimethyl ammonium carbonate/bicarbonate:
SARA 302 Components: no data
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21): no data
SARA Title III Section 313 (40 CFR 372.65): no data

OSHA: All of the chemicals in this product are covered by OSHA.

State Regulations:
California Proposition 65: wood dust (carcinogen)

US State Notifications & Warnings:
New Jersey
Identification: Right-to-Know
Warning: wood dust; ethanolamine; copper complex expressed as copper oxides; didecyl dimethyl ammonium chloride

Pennsylvania
Identification: Right-to-Know
Warning: wood dust; ethanolamine; copper complex expressed as copper oxides

Minnesota
Identification: Right-to-Know
Warning: wood dust; ethanolamine;

Massachusetts
Identification: Right-to-Know
Warning: ethanolamine; copper complex expressed as copper oxides

New York
Identification: Right-to-Know
Warning: copper complex expressed as copper oxides

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 2** **Flammability - 2** **Instability - 0**
	Based on softwood, allergenic and non-allergenic species
SDS Prepared By	Amec Foster Wheeler Environment & Infrastructure
Phone No.	604-294-3811
Date of Preparation	March 10, 2016
Key to Abbreviations	% - Percent °C – Degrees Celsius

°F – Degrees Farenhuit
hr – Hour
kg - Kilogram
L - Litre
Ppm - parts per million
LC50 – Airborne concentration required to produce 50% mortality in animal test subjects.
LD50 – Dose (provided either orally, or dermally) required to produce 50% mortality in animal test subjects.
mg/m3 – milligrams of contaminant per cubic metre of air
mmHg – Millimetres of mercury
N.Ap. – Not applicable
N.Av. Not available
ACGIH – American Conference of Governmental Industrial Hygienists
CALIFORNIA EPA PROPOSITION 65 – List of Carcinogens and Reproductive Toxins recognized in California Environmental Protection Agency
CAS No. – Chemical Abstract Society Number
CERCLA – US Comprehensive Environmental Response, Compensation, and Liability Act
PEL – Permissible Exposure Level
RCRA – US Resource and Conservation Recovery Act
REL – Recommended Exposure Limit
SARA TITLE III – US Superfund Amendments and Reauthorization Act
TLV – Threshold Limit Value
TSCA – US Toxic Substances Control Act
TWA – Time Weighted Average
UN/NA – United Nations / North American Product Identification Number
WHMIS – Workplace Hazardous Materials Information System
AIHA® = AIHA® Guideline Foundation. HSDB® = Hazardous Substances Data Bank
NTP = National Toxicology Program
OSHA = US Occupational Safety and Health Administration
RTECS® = Registry of Toxic Effects of Chemical Substances
GHS - Global Harmonized System

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Disclaimer

This product has been classified in accordance with the hazard criteria for the Controlled Products Regulations (CPR) and the Global Harmonized System (GHS) and the MSDS / SDS contains all of the information required by the CPR and GHS." At the time of preparation, the information and data contained in this MSDS / SDS are believed to be accurate and have been compiled from sources that are believed to be reliable (e.g., CCOHS CHEMINFO, HSDB, RTECS, DSL/NDSL, ESIS, ECHA, online information).

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