

HOOVER TREATED WOOD PRODUCTS, INC

TECHNICAL NOTE

FOR ADDITIONAL INFORMATION: www.frtw.com or 1-800-TEC-WOOD (832-9663)

SPECIFICATIONS

EXTERIOR FIRE-X[®] Exterior Fire-Retardant-Treated Wood

PART 1 – General Product Information

- A. Lumber and plywood designated **EXTERIOR FIRE-X[®]** has a flame spread index of 25 or less (Class A) when tested in accordance with ASTM E84, “Standard Test Method for Surface Burning Characteristics of Building Materials.”
- B. **EXTERIOR FIRE-X[®]** fire-retardant-treated wood shows no evidence of significant progressive combustion when the test is extended for an additional 20-minute period. The flame front does not progress more than 10½ feet beyond the centerline of the burners at any time during the test. Surface burning characteristics for each species and product are listed by Underwriters Laboratories (UL).
- C. **EXTERIOR FIRE-X[®]** shows no increase in the listed classification when evaluated for flame spread after testing in accordance with ASTM D2898 “Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.”
- D. **EXTERIOR FIRE-X[®]** lumber and plywood is manufactured under the independent third-party inspection of Underwriters Laboratories Inc. (UL) Follow-Up Service and each piece shall bear the UL classified mark indicating the extended 30 minute ASTM E84 test and no increase in classification after ASTM D2898.
- E. **EXTERIOR FIRE-X[®]** shall be kiln dried after treatment (KDAT). The kiln drying process is monitored by Timber Products Inspection, Inc. (TP) the TP mark appears on the label.
- F. **EXTERIOR FIRE-X[®]** meets the performance requirements of AWWA U1, Specification H for Use Category UCFB (fire protection, exterior, above ground) and AWWA C20/C27 (Exterior Type).
- G. **EXTERIOR FIRE-X[®]** is available with a blue colorant or branding as required for identification by the nuclear power industry and Department of Defense (DOD) Mil Spec requirements, Type II (Exterior Type).
- H. **EXTERIOR FIRE-X[®]** is listed on the Qualified Products List (QPL) for Mil Spec Mil-L 19140-E

PART 2 - Fire-Retardant Treatment

- A. **EXTERIOR FIRE-X[®]** is manufactured by Hoover Treated Wood Products, Inc.
- B. **EXTERIOR FIRE-X[®]** is a proprietary product of Hoover Treated Wood Products Inc. No substitutions permitted.
- C. **EXTERIOR FIRE-X[®]** shall be kiln dried to maximum moisture content of 19% for lumber and 15% for plywood.
- D. **EXTERIOR FIRE-X[®]** lumber and plywood shall use design value adjustments and span ratings as published by the Hoover Treated Wood Products Inc.
- E. **EXTERIOR FIRE-X[®]** fire-retardant treatment is free of halogens, sulfates, chlorides, ammonium phosphate, and contains no added urea formaldehyde.
- F. Plywood shall have a minimum bond durability of Exposure 1 in accordance with US Product Standard PS 1, Construction and Industrial Plywood.

PART 3 – Execution

- A. **EXTERIOR FIRE-X[®]** is a leach resistant fire-retardant treatment and may be installed with direct exposure to precipitation; however, it cannot be substituted for preservative treated wood.
- B. **EXTERIOR FIRE-X[®]** fire-retardant-treated lumber and plywood used in structural applications shall be applied according to the lumber and plywood strength tables available from Hoover Treated Wood Products.
- C. Lumber and plywood of the appropriate size, grade and species and bond durability shall be specified by the design criteria for the intended application.
- D. Field cutting is allowed without end treating. Do not rip or mill fire-retardant-treated lumber. Cross cuts, joining cuts, and drilling holes are permitted in lumber. Fire-retardant-treated plywood may be cut in any direction.

DISCLAIMER OF LIABILITY FOR RELIANCE ON INFORMATION PROVIDED BY HOOVER TREATED WOOD PRODUCTS, INC.: The information contained herein is true and accurate to the best of our knowledge, but is provided without warranty or guarantee. Since the conditions of use are beyond our control, Hoover Treated Wood Products, Inc. (“Hoover”) disclaims all liability and assumes no legal responsibility for damages resulting from use of or reliance upon the information contained herein.

HOOVER TREATED WOOD PRODUCTS, INC

TECHNICAL NOTE

FOR ADDITIONAL INFORMATION: www.frtw.com or 1-800-TEC-WOOD (832-9663)

LUMBER & PLYWOOD ENGINEERING DATA

EXTERIOR-FIRE-X[®] Exterior Fire-Retardant-Treated Wood

Exterior Fire-X[®] pressure treated fire retardant lumber is limited to uses where the lumber temperature does not exceed 150° F in:

- A. Walls
- B. Floors
- C. Roof/ceiling assemblies where ventilation is evenly distributed providing a uniform airflow over all interior roof surfaces effectively removing built up heat and moisture from the roof system.

DESIGN VALUE ADJUSTMENTS FOR EXTERIOR FIRE-X[®] LUMBER

Exterior Fire-X[®] treated lumber shall bear the mark of an ALSC approved lumber grading or inspection agency. The adjustments below apply to the design values for Southern Pine as listed in the National Design Specification^(a)

(a) ANSI / AWC National Design Specification (NDS) and NDS Supplement: Design Values for Wood Construction. American Wood Council www.awc.org

Property	Adjustment Factor
Extreme fiber in bending	0.85
Tension	0.80
Horizontal shear	0.90
Compression perpendicular to grain	0.90
Compression parallel to grain	0.90
Modulus of elasticity	0.90
Fastener/connector design loads	0.90

SPAN RATINGS FOR EXTERIOR FIRE-X[®] PLYWOOD

The following plywood roof sheathing and subfloor spans apply to span-rated plywood and/or plywood bearing the trademark of an approved inspection agency, treated with Exterior Fire-X[®]. Roof system ventilation shall be evenly distributed providing a uniform airflow over all interior roof surfaces, and sufficient to effectively remove moisture.

Panel Thickness Category	Untreated Span Index	Exterior Fire-X [®] Maximum Span (inches)	
		Roof Sheathing (1, 2, 5)	Wall & Subfloor (3)
15/32, 1/2	32/16	24	16
19/32, 5/8	40/20	32	20
23/32, 3/4	48/24	40	24
7/8 (4)		48	24

- (1) Clips, blocking or other edge supports must be used with roof sheathing.
- (2) Maximum roof load: 10 psf dead load plus 40 psf live load.
- (3) Maximum floor load: 10 psf dead load plus 100 psf live load.
- (4) Limited to 7/8" CDX plywood made with group 1 species.
- (5) EXTERIOR FIRE-X[®] treated plywood shall not be used in roof designs employing a radiant shield that is located underneath the bottom surface of the sheathing.

NOTE: THESE SPAN RATINGS ARE BASED ON TEST RESULTS FOR EXTERIOR FIRE-X TREATED PLYWOOD AFTER EXTENDED EXPOSURE TO ELEVATED TEMPERATURES AND MOISTURE.

Where Exterior Fire-X[®] treated plywood is used for diaphragm or shear wall design there is a 10% reduction.


DISCLAIMER OF LIABILITY FOR RELIANCE ON INFORMATION PROVIDED BY HOOVER TREATED WOOD PRODUCTS, INC.: The information contained herein is true and accurate to the best of our knowledge, but is provided without warranty or guarantee. Since the conditions of use are beyond our control, Hoover Treated Wood Products, Inc. ("Hoover") disclaims all liability and assumes no legal responsibility for damages resulting from use of or reliance upon the information contained herein.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

Meets Requirements of OSHA's 29 CFR 1910.1200 (7-1-13 Edition)

SECTION I - Identification

- (a) Product identifier used on the label; *EXTERIOR FIRE-X*[®]
- (b) Other means of identification; Ink stamp on Plywood, Lumber or Timbers.
- (c) Recommended use of the chemical and restrictions on use; Fire Retardant Treated Wood (FRTW) – Used in areas not in contact with the ground – can be exposed to the weather or wetting – used where the code permits the use of wood or fire-retardant-treated wood.
- (d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party;

MANUFACTURER	
Hoover Treated Wood Products, Inc. 154 Wire Road Thomson, Georgia 30824 706-595-5058	 www.frtw.com

- (e) Emergency phone number. 706-595-7355

SECTION II – Hazard(s) Identification

- (a) Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

All classifications have been performed considering sawing, grinding, drilling, sanding or machining of the product has taken place and wood dust, sawdust, and small wood chips are present. Only “**Softwoods**” are used in the production of the product. So data derived from “**Hardwoods**” studies has not been considered.

Acute Toxicity – N/A

Skin Corrosion/Irritation – Irritant, category 2³

Serious Eye Damage/Eye Irritation – Irritant, category 2B

Respiratory or Skin Sensitization:

Respiratory Sensitizer, category 1, sub-category 1B

Skin Sensitizer, category 1, sub-category 1B

Germ Cell Mutagenicity – N/A

Carcinogenicity – Carcinogen, category 2

Reproductive Toxicity – N/A

Specific Target Organ Toxicity Single Exposure – N/A

Specific Target Organ Toxicity Repeated or Prolonged Exposure – N/A

Aspiration Hazard – N/A

Explosives – N/A

Flammable Gases – N/A

Flammable Aerosols – N/A

Oxidizing Gases – N/A

Gases Under Pressure – N/A

Flammable Liquids – N/A

Flammable Solids – Readily Combustible Solids, category 2

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

Self-Reactive Chemicals – N/A
 Pyrophoric Liquids – N/A
 Pyrophoric Solids – N/A
 Self-Heating Chemicals – N/A
 Chemicals Which, In Contact With Water, Emit Flammable Gases – N/A
 Oxidizing Liquids – N/A
 Oxidizing Solids – N/A
 Organic Peroxides – N/A
 Corrosive to Metals – N/A

N/A = Not Applicable

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones);



Warning

Causes Skin Irritation

Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Wash all body parts which have come into contact with any sawdust generated from sawing, grinding, drilling, sanding, or machining thoroughly after handling.</p> <p>Wear protective gloves. Any type that creates a barrier is acceptable – Selection should be oriented to decrease contact with splinters and slivers of wood.</p>	<p>If on skin: Wash with plenty of water and soap.</p> <p>If skin irritation occurs: Get medical advice.</p> <p>Take off contaminated clothing and wash it before reuse.</p>		

Warning

Causes Eye Irritation


Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Wash all body parts which have come into contact with any sawdust generated from sawing, grinding, drilling, sanding, or machining thoroughly after handling.</p>	<p>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: Get medical advice.</p>		

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD



Danger

May Cause Allergy Or Asthma Symptoms Or Breathing Difficulties If Inhaled

Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Avoid breathing dust.</p> <p>In case of inadequate ventilation wear respiratory protection.</p> <p>Adequate ventilation is considered that which keeps exposure limits at or below 15mg/m³</p>	<p>If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.</p> <p>If experiencing respiratory symptoms: Call a poison center.</p> <p> For a poison emergency in the U.S. call 1-800-222-1222</p>		<p>Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.</p>



Warning

May Cause An Allergic Skin Reaction

Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Avoid breathing dust.</p> <p>Contaminated work clothing must not be allowed out of the workplace</p> <p>Wear protective gloves. Any type that creates a barrier is acceptable – Selection should be oriented to decrease contact with splinters and slivers of wood.</p>	<p>If on skin: Wash with plenty of water and soap.</p> <p>If skin irritation occurs: Get medical advice.</p> <p>Wash contaminated clothing before reuse.</p>		<p>Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.</p>

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD



Warning

Suspected Of Causing Cancer Of The Upper Respiratory System

Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Obtain special instructions before use.</p> <p>Do not handle until all safety precautions have been read and understood.</p> <p>Wear protective gloves and eye protection. Acceptable gloves are any type that creates a barrier – Glove selection should be oriented to decrease contact with splinters and slivers of wood.</p>	<p>If exposed or concerned: Get medical advice.</p>	<p>Store locked up.</p>	<p>Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.</p>



Warning

Flammable Solid

Precautionary Statements			
Prevention	Response	Storage	Disposal
<p>Keep away from heat, sparks, open flames and hot surfaces. - No smoking.</p> <p>Ground or Bond container and receiving equipment.</p> <p>Use explosion-proof electrical, ventilating, lighting, and processing equipment.</p> <p>Wear protective gloves and eye protection. Acceptable gloves are any type that creates a barrier – Glove selection should be oriented to decrease contact with splinters and slivers of wood.</p>	<p>In case of fire: Use water or wood appropriate fire extinguishers to extinguish.</p>		

SAFETY DATA SHEET (SDS) for EXTERIOR FIRE-X® TREATED WOOD

(c) Describe any hazards not otherwise classified that have been identified during the classification process;

If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

The Occupational Safety and Health Administration (OSHA) in the United States defines combustible dust as "a solid material composed of distinct particles or pieces, regardless of size, shape, or chemical composition, which presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations".

Dust particles with an effective diameter of less than 420 microns (those passing through a U.S. No. 40 standard sieves) should be deemed to meet the criterion of the definition.

(d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration $\geq 1\%$ and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

N/A

SECTION III - Composition/Information on Ingredients

Except as provided for in paragraph (i) of §1910.1200 on trade secrets:

For Substances

- (a) Chemical name;
- (b) Common name and synonyms;
- (c) CAS number and other unique identifiers;
- (d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.

For Mixtures

In addition to the information required for substances:

- (a) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of §1910.1200 and
 - (1) Are present above their cut-off/concentration limits; or
 - (2) Present a health risk below the cut-off/concentration limits.
- (b) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of §1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures (See A.0.5.1.2) with similar chemical composition. In these cases, concentration ranges may be used.

For All Chemicals Where a Trade Secret is Claimed

Where a trade secret is claimed in accordance with paragraph (i) of §1910.1200, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

See Below For Requirements –

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

Chemical, Common or Synonyms Name	Approximate %	CAS #
Wood (mainly softwoods such as pine)	87% to 94%	None
Polymerized Resin of Nitrogen-Phosphorus Complex	5% to 12%	None
Alkyl (C ₁₂₋₁₆) dimethylbenzylammonium chloride benzyl-c12-c16-alkyldimethylammoniumchlorides BENZYLDIMETHYLALKYLAMMONIUM CHLORIDE quaternaryammoniumcompounds,benzyl-c12-c16-alkyldimethyl,chlorides	≤ 0.06%	68424-85-1
Dimethyldidecylammonium chloride DIDECYL-DIMETHYLAMMONIUM CHLORIDE N-Decyl-N,N-dimethyl-1-decanaminium chloride 1-Decanaminium,N-decyl-N,N-dimethyl-,chloride ddac(didecyldimethylammoniumchloride) didecyldimethyl-ammoniu chloride DIDECYLDIMONIUM CHLORIDE	≤ 0.27%	7173-51-5
5-Chloro-2-methly-4-Isothiazolin-3-one methylchloroisothiazoline	≤ 0.01%	26172-55-4
2-Methyl-4-Isothiazolin-3-one Methylisothiazolinone	≤ 0.01%	2682-20-4
Magnesium Nitrate	≤ 0.01%	10377-60-3
Engineered Wood Products may contain bonding agents such as phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin and other ingredients below reportable levels	Balance	

SECTION IV – First-aid Measures

- (a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion;



First Aid Procedures

First Aid for Inhalation: – If inhalation symptoms appear remove from area of exposure and monitor. If persistent irritation, severe coughing, allergic-type responses or breathing difficulty occurs, get medical attention.

First Aid for Skin Contact: – If skin contact symptoms appear remove from area of exposure and monitor. Remove contaminated clothing. Wash affected area with soap and water. If irritation persists after washing, get medical attention.

First Aid for Eye Contact: – Wood dust may cause mechanical irritation. Treat dust in eye as foreign object. Remove contact lenses if worn. Flush eyes with large amounts of water to remove dust particles. Do not rub the eyes. Seek medical attention if irritation persists.

First Aid for Ingestion: – Not applicable under normal use, and considered unlikely. If occurred - Do not induce vomiting unless directed by a medical care giver, drink water. Never give anything by mouth to an unconscious person. Seek medical advice.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

Notes to Physician: – All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

(b) Most important symptoms/effects, acute and delayed.

Potential Health Effects

Inhalation

Wood dust may cause nasal dryness, irritation, coughing and sinusitis. Repeated exposures (even below 15 mg/m³) to certain wood dusts such as Western Red Cedar, can produce allergic responses in some sensitive individuals. Wood dust can be irritating to eyes, nose and respiratory tract following prolonged exposure.

Skin Contact

Various species of wood dust may evoke allergic contact dermatitis in sensitized individuals. If an allergy preexists or develops, it may be necessary to remove the sensitized worker from further exposure to wood dust or wood-based products. The chemical components may cause slight to mild irritation.

Eye Contact

Dust or splinters may cause irritation or injury to the eyes. The chemical components can cause burning sensation, tearing, and redness.

Ingestion

Not applicable under normal use, and considered unlikely. If occurred may result in irritation of the digestive tract.

(c) Indication of immediate medical attention and special treatment needed, if necessary.

N/A

SECTION V – Fire-fighting Measures

(a) Suitable (and unsuitable) extinguishing media.

FIRE EXTINGUISHING MEDIA: Water, foam or Fire Extinguishers designated for wood. Partially burned dust is especially hazardous if dispersed into the air. Remove burned or wet dust to open area after fire is extinguished.

(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).

EXPLOSIVE LIMITS: Sawing, sanding or machining wood products can produce wood dust as a by-product. Wood dust is a strong to severe explosion hazard if a dust “cloud” contacts an ignition source. 212°F (100°C) has been suggested as the upper temperature limit for continuous exposure for wood without risk of ignition (wood dust may require a still lower temperature). An airborne concentration of 40 grams of dust per cubic meter of air is often used as the lowest explosion limit (LEL) for wood dust.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

HAZARDOUS COMBUSTION PRODUCTS: Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes and organic acids. Chemical treatment has little or no effect on the above possibilities from untreated wood.

AUTOIGNITION TEMPERATURE: Unknown (Chemical Treatment Retards).

(c) Special protective equipment and precautions for fire-fighters.

None

SECTION VI - Accidental Release Measures

- (a) Personal precautions, protective equipment, and emergency procedures.
- (b) Methods and materials for containment and cleaning up.

Not applicable for product in purchased form. Sweep or vacuum up sawdust for recovery or disposal. Wood dust clean-up and disposal activities should be accomplished in a manner to minimize creation of airborne dust.

SECTION VII - Handling and Storage

- (a) Precautions for safe handling.
- (b) Conditions for safe storage, including any incompatibilities.

HANDLING:

Protective Gloves – Work gloves are recommended to avoid splinters.

Eye Protection – Safety goggles or glasses are recommended when machining to protect against sawdust and flying wood particles.

Protective Clothing or Equipment – Recommended as typical with any wood working.

Work/Hygienic Practices - Practice good hygiene, wash hands after use and before eating, drinking or using tobacco products.

STORAGE:

No ground contact allowed. Product is shipped dry and should not be exposed to the weather until installed. Water spray may be used to wet down wood dust generated by sawing, grinding, drilling, sanding or machining to reduce the likelihood of ignition or dispersion of dust into the air.

SECTION VIII - Exposure Controls/Personal Protection

(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

- (b) Appropriate engineering controls.
- (c) Individual protection measures, such as personal protective equipment.

EXPOSURE GUIDELINES:

Chemical	OSHA PEL	ACGIH TLV
Wood (mainly softwoods such as pine)	15 mg/m ³ TWA (Listed under Particulates Not Otherwise Regulated - Total dust) 5 mg/m ³ TWA Respirable Fraction	1 mg/m ³ TWA* *Inhalable Fraction
Polymerized Resin of Nitrogen-Phosphorus Complex	None Listed	None Listed
Alkyl (C ₁₂₋₁₆) dimethylbenzylammonium chloride	None Listed	None Listed
Dimethyldidecylammonium chloride	None Listed	None Listed
5-Chloro-2-methyl-4-Isothiazolin-3-one	None Listed	None Listed
2-Methyl-4-Isothiazolin-3-one	None Listed	None Listed
Magnesium Nitrate	None Listed	None Listed
Engineered Wood Products may contain bonding agents such as phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin and other ingredients below reportable levels	Unknown	Unknown

ENGINEERING CONTROLS: Due to the explosive potential of wood dust when suspended in air, precautions should be taken during sawing, grinding, drilling, sanding or machining of wood products to prevent sparks or other ignition sources in ventilation equipment. Use of totally enclosed motors is recommended. Provide local exhaust as necessary to meet OSHA requirements for airborne exposure limits.

INDIVIDUAL PROTECTION MEASURES:

RESPIRATORY PROTECTION: When sawing, grinding, drilling, sanding or machining, a dust mask is recommended. Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed.

VENTILATION REQUIREMENTS: In enclosed environments, ventilation may be required in order to maintain exposure limits.

PROTECTIVE GLOVES: Not required. However, cloth, canvas, or leather gloves are recommended to minimize potential splinters, slivers or mechanical irritation when handling product or wood dust generated from the product.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

EYE PROTECTION: Goggles or safety glasses are recommended when excessive exposures to wood dust may occur (e.g. during clean up).

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As necessary to limit exposure when handling the product or wood dust generated from the product.

WORK/HYGIENIC PRACTICES: Follow good hygienic and housekeeping practices. Clean up areas where wood dust settles to avoid excessive accumulation of this combustible material. Minimize compressed air blow down or other practices that generate high airborne-dust concentrations. Do not handle material near food, feed or drinking water. Use good personal hygiene. Wash hands before eating or smoking.

SECTION IX - Physical and Chemical Properties

(a) Appearance (physical state, color, etc.);

(b) Odor;

If plywood - Rigid panel usually ½” to ¾” thick and 4’ width and 8’ length. If Lumber – Plank usually 2” nominal thickness but can vary from ½” to 4” with widths varying from 2” to 12” wide and lengths normally from 6 to 18 feet. If Timbers – Thickness is greater than 4” and widths and lengths vary. Color and odor are dependent upon wood specie. Chemical treatment only darkens the woods natural color.

(c) Odor threshold; N/A

(d) pH; N/A

(e) Melting point/freezing point; N/A

(f) Initial boiling point and boiling range; N/A

(g) Flash point; N/A

(h) Evaporation rate; N/A

(i) Flammability (solid, gas); Wood Dust Combustible

(j) Upper/lower flammability or explosive limits; Wood Dust $\geq 40 \text{ g/m}^3$

(k) Vapor pressure; N/A

(l) Vapor density; N/A

(m) Relative density; Variable - Dependent on wood species and moisture content (typically 22 – 37 lbs/ft³)

(n) Solubility(ies); None

(o) Partition coefficient: n-octanol/water; N/A

(p) Auto-ignition temperature; Auto-ignition Temperature is $\geq 572 \text{ F}$

(q) Decomposition temperature; $\geq 572 \text{ F}$

(r) Viscosity. N/A

SECTION X - Stability and Reactivity

- (a) Reactivity; N/A
- (b) Chemical stability; Stable under normal conditions. Wood dust generated from sawing, grinding, drilling, sanding or machining the product is combustible. Keep in cool, dry place away from ignition sources.
- (c) Possibility of hazardous reactions; None Known
- (d) Conditions to avoid (e.g., static discharge, shock, or vibration); Large accumulations of air-borne wood dust. Product in direct ground contact. Product becoming wet.
- (e) Incompatible materials; Oxidizing agents, Drying Oils, Strong Bases, and Reducing Agents.
- (f) Hazardous decomposition products. Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes, oxides of sodium, oxides of phosphorus. Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

SECTION XI - Toxicological Information

Description of the various toxicological (health) effects and the available data used to identify those effects, including:

- (a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
- (b) Symptoms related to the physical, chemical and toxicological characteristics;
- (c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;
- (d) Numerical measures of toxicity (such as acute toxicity estimates).
- (e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

PRODUCT AS PRODUCED:

Is an article and no toxicological information is available.

OSHA: Wood products are not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, wood dust generated by sawing, sanding or machining this product may be hazardous.

COMPONENTS:

Alkyl (c₁₂₋₁₆) dimethylbenzylammonium chloride (cas# 68424-85-1) -

TOXICITY

ACUTE

- oral LD50 (rat): 404 mg/kg

- dermal LD50 (rabbit): 3346 mg/kg

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

- eye irritation (rabbit): Severe irritation that did not clear by day 3, post dose.
- skin irritation (rabbit): Severe irritation that did not clear by day 3, post dose.
- skin corrosivity (rabbit - DOT): Corrosive
- photoallergenicity/sensitization (guinea pig – Buehler): Not photoallergenic or a contact sensitizer.

GENOTOXICITY/MUTAGENICITY

- Ames Assay (in vitro – rat hepatocytes): Not mutagenic with or without metabolic activation.
- Chromosome Aberration (in vitro – human lymphocytes): Not mutagenic with or without metabolic activation.

REPRODUCTIVE/DEVELOPMENTAL

- developmental (rat – oral): NOAEL – 10 mg/kg/day for both maternal and neonatal. No evidence of developmental toxicity effects was observed at exposure doses ranging from 10-100 mg/kg/day administered from day 6 through 18 of gestation. Clear signs of maternal toxicity were observed at the high-dose level of 100 mg/kg/day.
- developmental (rabbit - oral): NOAEL – 3 mg/kg/day for both maternal and neonatal. No evidence of developmental toxicity effects was observed at exposure doses ranging from 1 to 9 mg/kg/day administered from day 6 through 18 of gestation. Clear signs of maternal toxicity were observed at the high-dose level of 9 mg/kg/day.
- reproductive/developmental (rat – two generation feeding): NOAEL – 1000 ppm. Neonatal and maternal adverse effects were observed in animals dosed at 2000 ppm.

SUBCHRONIC

- oral toxicity (dog - 8 week - feeding): No adverse systemic or target organ effects were noted at dosage levels ranging from 400 to 1600 ppm in the diet. Slightly reduced weight gain and cholesterol values were observed in the 1200 and 1600 ppm exposure dose groups.
- oral toxicity (rat – 90 day - feeding): No systemic or target organ effects were observed at a dosage level of approximately 500 ppm in the diet. Adverse effects were noted at the higher dosage levels of 1000 and 4000 ppm.
- dermal toxicity (rat – 90 day): No systemic toxicity effects were noted in any of the exposure groups; however, slight irritation was observed in all treatment groups up to 20 mg/kg/day.

CHRONIC

- oral toxicity (dog – 1 year - feeding): NOAEL – 400 ppm. Clear treatment related effects were observed in the high dosage level group, 1200 ppm. No specific target organ toxicity was observed and treatment had no effect on survival.
- oral toxicity/oncogenicity (rat – 2 year): NOAEL - 1000 ppm. Treatment related effects were noted in high-dosage level group, 2000 ppm. Survival and tumor incidences, as compared with controls, were not affected.

ECOTOXICITY

AQUATIC

- LC50 (bluegill sunfish – 96 hour, static): 0.52 mg/l
- LC50 (rainbow trout – 96 hour, static): 0.93 mg/l
- LC50 (sheepshead minnow – 96 hour, static): 0.86 mg/l
- EC50 (*Daphnia magna* – 48 hour, static): 0.058 mg/l
- LC50 (mysid shrimp – 96 hour, static): 0.092 mg/l

Dimethyldidecylammonium chloride (cas# 7173-51-5) -

TOXICITY

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

ACUTE

- oral LD50 (rat): 450 mg/kg; 412 mg/kg (males); 292 mg/kg (females) (3 tests)
- dermal LD50 (rabbit): 3342 mg/kg, 4300 mg/kg (2 tests)
- eye irritation (rabbit): Extreme irritation that did not clear by day 7, post dose
- skin irritation (rabbit): Severe irritation that did not clear by day 7, post dose
- skin sensitization (0.2% active solution) (guinea pig): Not a sensitizer

GENOTOXICITY/MUTAGENICITY

- mutagenicity (Ames test - Salmonella Sp.): Not mutagenic
- mutagenicity (in vitro - CHO/HGPRT): Not mutagenic
- mutagenicity (in vitro - DNA synthesis): Not mutagenic

REPRODUCTIVE/DEVELOPMENTAL

- teratogenicity (rat): No statistically significant teratogenic effects observed with administration of doses from 10 to 50 mg/kg during days 6 through 15 of gestation.
- teratogenicity (rabbit): No statistically significant teratogenic effects observed with administration of doses from 10 to 50 mg/kg during days 6 through 15 of gestation.

ECOTOXICITY

- LC50 (salmon - 96 hour): 1.0 mg/l
- LC50 (bluegill sunfish - 96 hour): 0.32 mg/l
- LC50 (mysid shrimp - 96 hour): 0.069 mg/l
- EC50 (Daphnia magna - 48 hour): 0.94 mg/l

The Following Are Taken As A Group:

5-Chloro-2-methyl-4-Isothiazolin-3-one
2-Methyl-4-Isothiazolin-3-one
Magnesium Nitrate

(Acute Toxicity) -

The below statements are with the above components at 10.6%, 3.5% and 15.0% respectively; numerous times the actual present in the product.

ROUTES OF ENTRY: Inhalation, dermal absorption, skin contact and eye contact.

SIGNS AND SYMPTOMS OF ACUTE OVEREXPOSURE:

Eyes - Corrosive to eyes. Severely irritating to the eyes and may cause eye burns. May cause permanent eye injury.

Skin - Corrosive to the skin. Severely irritating to the skin and may cause chemical burns to the skin. May cause allergic skin sensitization of susceptible persons. May be fatal if absorbed through the skin.

Ingestion - May be harmful or fatal if swallowed. Ingesting may produce chemical burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Inhalation - Harmful if inhaled. Inhalation of vapors, mists or sprays can cause irritation or burns of the nose, throat and lungs.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

CHRONIC OVEREXPOSURE: Allergic contact dermatitis observed. Collective data indicate non-mutagenic; not teratogenic.

CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?:

- NATIONAL TOXICOLOGY PROGRAM (Y/N): N
- IARC MONOGRAPHS (Y/N) N
- OSHA (Y/N) N:

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

TOXICOLOGICAL DATA:

Dermal LD50 - rabbit: > 1,000 mg/kg

Oral LD50 - rat: 481 mg/Kg

Eye Irritation - rabbit: corrosive

Skin Irritation - rabbit: corrosive

Inhalation LC50 (4hr) – 1.23 mg/l (aerosol)

WOOD DUST (softwood or hardwood) -

OSHA Hazard Rating = 3.3; moderately toxic with probable oral lethal dose to humans being 0.5-5 g/kg (about 1 pound for a 150 pound person) Source: *OSHA Regulated Hazardous Substances*, Government Institutes, Inc., February 1990.

Wood dust generated from sawing, grinding, drilling, sanding or machining may cause nasal dryness, irritation, coughing and sinusitis. NTP and IARC classify wood dust as a human carcinogen (IARC Group 1). This classification is based primarily on increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust.

SECTION XII - Ecological Information

- (a) Ecotoxicity (aquatic and terrestrial, where available); Not available
- (b) Persistence and degradability;
- (c) Bioaccumulative potential;

Environmental fate of wood dust would be expected to be biodegradable.

- (d) Mobility in soil; N/A
- (e) Other adverse effects (such as hazardous to the ozone layer). None Known

SECTION XIII - Disposal Considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.

The producer has made a determination that this product is not considered hazardous waste under Federal hazardous waste regulations 40 CFR Part 261. Incinerate or landfill in accordance with Local, State, and Federal regulations.

SECTION XIV – Transport Information

- (a) UN number;
- (b) UN proper shipping name;
- (c) Transport hazard class(es);
- (d) Packing group, if applicable;
- (e) Environmental hazards (e.g., Marine pollutant (Yes/No));
- (f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

- (g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

This product is not regulated as a dangerous good or hazardous material by the U.S. Department of Transportation (DOT).

SECTION XV - Regulatory Information

Safety, health and environmental regulations specific for the product in question.

Toxic Substance Control Act (TSCA): N/A

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): N/A

Domestic Substance List (DSL): N/A

OSHA: Wood products per se are not hazardous under the criteria of the federal OSHA Hazard Communication Standard 29CFR 1910.1200. However, wood dust generated by sawing, sanding or machining wood products may be hazardous and hence included under 1910.1200.

STATE RIGHT-TO-KNOW:

California Prop 65:

Warning: Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer.

Pennsylvania – When cut or otherwise machined, wood products may emit wood dust. Wood dust appears on Pennsylvania's Appendix A, Hazardous Substance List.

New Jersey – When cut or otherwise machined, wood products may emit wood dust. Wood dust appears on New Jersey's Environmental Hazardous Substance List.

Section 302 extremely hazardous substance: No regulated ingredients.

SARA 313 Information: This product contains two chemical ingredients with known CAS number that exceed the de minimis reporting levels established by SARA Title III, section 313 and 40 CFR section 372. These are Alkyl (C₁₂₋₁₆) dimethylbenzylammonium chloride and Dimethyldidecylammonium chloride.

SAFETY DATA SHEET (SDS) for *EXTERIOR FIRE-X*[®] TREATED WOOD

SARA 311/312 Hazard Category: This product has been reviewed according to the EPA “Hazard Categories” promulgated under SARA Title III Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

An immediate (acute) health hazard	Yes
A delayed (chronic) health hazard	Yes
A corrosive hazard	No
A fire hazard	No
A reactivity hazard	No
A sudden release hazard	No

FDA: Not intended for use as a food additive or indirect food contact item.

SECTION XVI - Other Information

The date of preparation of the SDS or the last change to it.

Current Issue: 04/30/2015

Previous Issue: None

User’s Responsibility: The information contained in this Safety Data Sheet is based on the experience of health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user’s responsibility to determine if the product is suitable for its proposed application(s) and to follow necessary safety precautions. The user has the responsibility to make sure that this SDS is the most up-to-date issue.

NOTICE: Although the information and recommendations set forth herein (hereinafter “Information”) are presented in good faith and believed to be correct as of the date hereof, Hoover Treated Wood Products, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will Hoover Treated Wood Products, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon this information. **NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.**