

# HOOVER TREATED WOOD PRODUCTS, INC.

## *TECHNICAL NOTE*

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

### Certification for *EXTERIOR FIRE-X*<sup>®</sup> Fire Retardant Treated Wood

#### PART 1 – GENERAL

##### 1.01 PRODUCT IDENTIFICATION

- A. Lumber and plywood designated *EXTERIOR FIRE-X*<sup>®</sup> has a flame spread index of 25 or less (Class A) when tested in accordance with ASTM E 84, “Standard Test Method for Surface Burning Characteristics of Building Materials”.
- B. *EXTERIOR FIRE-X*<sup>®</sup> 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*<sup>®</sup> has been evaluated for flame spread with no increase in the listed classification after ASTM D 2898 “Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing”.
- D. *EXTERIOR FIRE-X*<sup>®</sup> lumber and plywood is manufactured under the independent third party inspection of Underwriters Laboratories Follow-Up Service and each piece bears the UL classified mark indicating the extended ASTM E 84 test, and no increase in classification after ASTM D2898.
- E. *EXTERIOR FIRE-X*<sup>®</sup> is labeled kiln dried after treatment (KDAT). Timber Products Inspection, Inc. (TP) provides inspection of the drying process and the Timber Products mark appears on the label.
- F. *EXTERIOR FIRE-X*<sup>®</sup> meets the performance requirements of AWPA U1, Specification H for Use Category UCFB (fire protection, exterior, above ground) and AWPA C20/C27 (Exterior Type).
- G. *EXTERIOR FIRE-X*<sup>®</sup> 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*<sup>®</sup> is listed on the Qualified Products List (QPL) for Mil Spec Mil-L 19140-E

#### PART 2 – PRODUCTS

##### 2.01 FIRE RETARDANT TREATMENT

- A. *EXTERIOR FIRE-X*<sup>®</sup> is manufactured by Hoover Treated Wood Products, Inc.
- B. *EXTERIOR FIRE-X*<sup>®</sup> shall be kiln dried to maximum moisture content of 19% for lumber and 15% for plywood.
- C. Kiln drying after treatment shall be monitored by Timber Products Inspection,
- D. *EXTERIOR FIRE-X*<sup>®</sup> lumber and plywood shall use design value adjustments and span ratings as published by the Hoover Treated Wood Products Inc.
- E. The fire retardant formulation is free of halogens, sulfates, chlorides, ammonium phosphate, and contains no added urea formaldehyde.
- F. Lumber and plywood of the appropriate size, grade and species and bond durability shall be specified by the design criteria for the intended application.
- G. Plywood shall have a minimum bond durability of Exposure 1 in accordance with US Product Standard PS 1, Construction and Industrial Plywood.

##### 2.02 PRODUCT SUBSTITUTION

*EXTERIOR FIRE-X*<sup>®</sup> is a proprietary product of Hoover Treated Wood Products Inc. No substitutions permitted.

#### PART 3 – EXECUTION

##### 3.01 FIELD CUTS

- A. Lumber: Do not rip or mill fire retardant treated lumber. Cross cuts, joining cuts, and drilling holes are permitted.
- B. Plywood: Fire retardant treated plywood may be cut in any direction.

##### 3.02 APPLICATION

- A. *EXTERIOR FIRE-X*<sup>®</sup> fire retardant treated lumber and plywood used in structural applications shall be applied according to the lumber and plywood strength tables provided by the manufacturer.
- B. *EXTERIOR FIRE-X*<sup>®</sup> 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.

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# Material Safety Data Sheet



## EXTERIOR FIRE-X<sup>®</sup> Treated Wood

### Section 1. Chemical Product and Company Identification

Product / Trade Name **EXTERIOR FIRE-X<sup>®</sup>** Treated Wood  
 Synonyms Fire Retardant Treated Wood(FRTW), XFX, Exterior FRTW, XFC  
 Product Use Controls Flame Spread and Maintains Strength Under Fire Conditions Longer Than Untreated Wood  
 MSDS Number HTWP-031 Revision 10/20/2005

Manufacturer Hoover Treated Wood Products, Inc.  
 154 Wire Road NW  
 Thomson, GA 30824  
 (706) 595-5058 (Non-Emergency) <http://www.frtw.com>

Emergency Phone (M-F 8am-5:30pm eastern) (706) 595-7355

### Section 2. Hazards Identification

HMIS

Health Hazard	0
Fire Hazard	0
Reactivity	0
Personal Protection	

Note: Personal protective equipment (PPE) is related to conditions of use. Determination of PPE is the responsibility of the employer. Refer to Section 8 (Exposure Controls / Personal Protection) of this MSDS for recommendations.

### Emergency Overview

Product appearance and odor is no different than the wood before treatment. Wood species dictates appearance and odor. Generally a light to dark brown solid. Southern Pine is the predominant species used. Sapwood is yellowish white and heartwood, reddish brown. Wood dust consists of finely divided particles generated from sawing, sanding, routing, or chipping solid dimensional lumber or other wood products.

Acute or prolonged exposure to wood dust or chips from the product may cause mild irritation of the eyes, skin, gastrointestinal tract and respiratory tract. Product may form explosive dust/air mixtures if high concentration of product dust is suspended in air.

### Potential Health Effects

**Inhalation:** Airborne treated or untreated wood dust may cause nose, throat or lung irritation. Various species of untreated wood dust can elicit allergic respiratory response in sensitized persons.

**Eye Contact:** Treated or untreated wood dust may cause mechanical irritation.

**Skin Contact:** Handling wood may result in skin exposure to splinters. Prolonged and/or repeated contact with treated or untreated wood dust or chips may result in mild irritation. Various species of untreated wood dust can elicit allergic type skin irritation in sensitized persons.

**Ingestion:** Not anticipated to occur.

**Chronic Wood Dust (treated or untreated) Effects:** Wood dust, depending on species, may cause dermatitis on prolonged, repetitive contact; may cause respiratory sensitization and/or irritation.

**Potential Environmental Effects**

No known significant environmental effects.

***Section 3 Composition / Information On Ingredients***

CAS #	Component	Approximate % By Weight <sup>1</sup>
Not Available	Wood / Wood Dust	> 87%
Proprietary	Polymerized Resin of Nitrogen-Phosphorus Complex	< 13%
68424-85-1	Alkyl (c12-16) dimethylbenzylammonium chloride	< 0.06 %
7173-51-5	Dimethyldidecylammonium chloride	< 0.27%
50-00-0	Formaldehyde <sup>2</sup>	

<sup>1</sup> The values presented will vary due to the variability of treatment and the natural variability of wood

<sup>2</sup> Formaldehyde possibly present in those products bonded with formaldehyde based glues

***Section 4. First Aid Measures***

**Inhalation:** Remove from wood dust exposure. If breathing has stopped administer artificial respiration. Seek medical aid if symptoms persist.

**Eye Contact:** Gently flush any particles from the eyes with large amounts of water for at least 15 minutes. DO NOT RUB THE EYES. Seek medical aid if irritation persists.

**Skin Contact:** Rinse wood dust off with water. DO NOT RUB. Once the skin is free of the wood dust, wash thoroughly with soap and water. Wash contaminated clothing before reuse. Seek medical aid if severe irritation develops.

**Ingestion:** Rinse the victim's mouth out with water. Do not induce vomiting. If symptoms develop, call a physician or poison center at (800) 222-1222.

***Section 5. Fire Fighting Measures***

**Flammable Properties**

This product resist burning - Class A per ASTM E-84 (Flame Spread <25). Fire from a separate fuel source may be intense enough to cause thermal decomposition releasing toxic fumes and/or gasses. Wood dust is combustible, and may form explosive mixtures with air in the presence of an ignition source.

**Extinguishing Media**

**Suitable Media:** Water Fog, Foam, CO<sub>2</sub>, or Dry Chemical - Use methods for the surrounding fire.

**Protection of Firefighters**

**Specific Hazards:** Wood dust may present a strong to severe explosion hazard if dust cloud contacts an ignition source. Use water to wet down wood dust to reduce likelihood of ignition or dispersion of dust into air. Remove burned or wet dust to open area after fire is extinguished. Combustion or thermal decomposition can yield dangerous fumes of phosphorous compounds, nitrogen compounds, carbon dioxide, carbon monoxide, aliphatic aldehydes, or polycyclic aromatic hydrocarbons.

**Protective Equipment and Precautions:** Wear complete fire service protective equipment (Full Bunker Gear), including full-face NIOSH and NFPA – approved self-contained breathing apparatus (SCBA). Avoid inhaling any combustion products.

*Section 6. Accidental Release Measures*

**Personal Precautions:** None necessary.

**Environmental Precautions:** None necessary.

**Methods for Containment:** Product is an article – none necessary.

**Methods for Clean-up:** None necessary.

**Other Information:** No additional information available.

*Section 7. Handling and Storage*

**Handling**

Do not generate airborne dust in the presence of an ignition source when sawing, cutting, sanding, grinding, routing or chipping wood. Wash hands after handling and before eating. Avoid contact of wood dust with skin and eyes. Avoid breathing wood dust. Avoid skin penetration by wood splinters. Launder clothing worn when generating wood dust before reuse. Do not eat, drink, or smoke when handling this product or in areas where dust of this product are present. Use appropriate personal protective equipment (PPE).

**Storage**

Protect from physical damage. Do not store in standing water. Store dead packed **EXTERIOR FIRE-X<sup>®</sup>** treated lumber and plywood off the ground, in a dry place, protected from weather. While at the job site, before installation, cover with plastic tarps, allowing for adequate air circulation. Keep away from open flame. Follow good hygienic and housekeeping practices. Clean-up areas where wood dust settles to avoid excessive accumulation of this combustible material. Minimize practices that generate airborne dust.

**Section 8. Exposure Controls / Personal Protection**

**Exposure Guidelines**

Name	CAS#	Agency	Exposure Limits	Comments
Wood Dust	None	OSHA	PEL-TWA 15 mg/m <sup>3</sup>	Total dust
		OSHA	PEL-TWA 5 mg/m <sup>3</sup>	Respirable dust fraction
		ACGIH	TLV-TWA 0.5 mg/m <sup>3</sup>	Inhalable, Western red cedar
		ACGIH	TLV-TWA 1 mg/m <sup>3</sup>	Inhalable, All other species
		Recommended <sup>1</sup>	PEL-TWA 5 mg/m <sup>3</sup>	Softwood or hardwood total dust
		Recommended <sup>1</sup>	PEL-STEL 10 mg/m <sup>3</sup>	Softwood or hardwood total dust
		Recommended <sup>1</sup>	PEL-TWA 2.5 mg/m <sup>3</sup>	Western red cedar total dust
Formaldehyde <sup>2</sup>	50-00-0	OSHA	PEL-TWA 0.75 ppm	
		OSHA	PEL-STEL 2 ppm	
		ACGIH	TLV-TWA 0.3 ppm	

<sup>1</sup> In AFL-CIO v. OSHA 965 F. 2d 962 (11th Cir. 1992), the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust that OSHA had established at that time. The 1989 PELs were: TWA 5 mg/m<sup>3</sup>; STEL (15 MIN) - 10 mg/m<sup>3</sup> (ALL SOFTWOODS AND HARDWOODS, EXCEPT WESTERN RED CEDAR); WESTERN RED CEDAR: TWA - 2.5 mg/m<sup>3</sup>.

Wood dust is now officially regulated as an organic dust under the Particulates Not Otherwise Regulated (PNOR) or Inert or Nuisance Dust categories at PELs noted under the Hazardous Ingredients section of this MSDS. However, A NUMBER OF STATES HAVE INCORPORATED PROVISIONS OF THE 1989 STANDARD IN THEIR STATE PLANS. ADDITIONALLY, OSHA HAS ANNOUNCED THAT IT MAY CITE COMPANIES UNDER THE OSH ACT GENERAL DUTY CLAUSE UNDER APPROPRIATE CIRCUMSTANCES FOR NON-COMPLIANCE WITH THE 1989 PELs.

<sup>2</sup> Formaldehyde possibly present in those products bonded with formaldehyde based glues

**Engineering Controls**

Use ventilation as necessary to keep exposure to airborne contaminants below the exposure limits. Due to the explosive potential of wood dust when suspended in air, ventilation systems should be kept clean and precautions should be taken to prevent sparks or other ignition sources.

**Personal Protective Equipment (PPE)**

**Eye / Face Protection:** When sawing, cutting, sanding, grinding, routing or chipping wood wear safety glasses with side shields.

**Skin Protection:** When sawing, cutting, sanding, grinding, routing or chipping wood, wear clothing that covers the skin – long pants, long sleeve shirts, hat, gloves and shoes. When simply handling the product gloves should be worn to protect from splinters.

**Respiratory Protection:** When sawing, cutting, sanding, grinding, routing or chipping wood, actions that can generate wood dust, a dust mask should be worn.

**General Hygiene Considerations:** Wash thoroughly after handling and before eating, drinking, or smoking. Launder clothing worn when generating wood dust before reuse.

### Section 9. Physical and Chemical Properties

**Appearance:** Product appearance and odor is no different than the wood before treatment. Wood species dictates appearance and odor. Generally a light to dark brown solid. Southern Pine is the predominant species used. Sapwood is yellowish white and heartwood, reddish brown. Wood dust consists of finely divided particles generated from sawing, sanding, routing, or chipping solid dimensional lumber or other wood products.

**Odor:** Wood Smell – Pine Pitch Mainly

**Odor Threshold:** Not Applicable

**Physical State:** Solid

**pH:** Not Applicable

**Melting/Freezing:** Not Applicable

**Initial Boiling Point and Boiling Range:** Not Applicable

**Flash Point:** Not Applicable

**Evaporation Rate:** Not Applicable

**Upper/Lower Flammability or 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.

**Vapor Pressure:** Not Applicable

**Vapor Density:** Not Applicable

**Specific Gravity or Relative Density:** 0.30 to 0.70 Depending On Wood Species (water=1)

**Solubility:** Insoluble

**Partition Coefficient:** Not Applicable

**Auto-Ignition Temperature:** 400° F – 500° F

**Decomposition Temperature:** > 300° F Char Starts

### Section 10. Stability and Reactivity

**Chemical Stability:** Stable under normal conditions.

**Conditions to Avoid:** Open flame will cause product to char. Product may ignite at temperature in excess of 400° F. Avoid prolonged continuous temperature above 212° F.

**Incompatible Materials:** Strong Acids, Open Flame, and Strong Oxidizers

**Hazardous Decomposition Products:** Thermal decomposition products include carbon monoxide, carbon dioxide, aliphatic aldehydes, resin acids, phosphorous compounds, nitrogen compounds and polycyclic aromatic hydrocarbons.

**Possibility of Hazardous Reactions:** None known.

**Section 11. Toxicological Information**

No specific toxicological data is available on the fire retardant wood itself. However, considerable information is available regarding the toxicity of its components and untreated wood. The presence of the fire retardant in the treated wood or wood dust is not expected to affect its inherent toxicity characteristics.

**Carcinogenicity:** **EXTERIOR FIRE-X®** Treated Wood and its components are not listed as carcinogens by ACGIH, NIOSH, or IARC. Wood dust is classified as a carcinogen by ACGIH, NIOSH, and IARC. This classification is based on an increased incidence of nasal and paranasal cancer in people exposed to wood dusts. Carcinogenicity of wood dust: ACGIH – A1 Confirmed Human Carcinogen (related to wood dusts-hard wood; NIOSH – Occupational carcinogen (related to wood dust); IARC -- Monograph 62, 1995 (related to wood dust)(Group 1 (carcinogenic to humans)). IARC has listed formaldehyde as a probable human carcinogen.

**Wood Dust:**

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 70 kg or 150 pound person). Source: *OSHA Regulated Hazardous Substances*, Government Institutes, Inc., February 1990.

**Carcinogenicity Listing:**

- NTP: Wood dust, *Known Human Carcinogen*
- IARC Monographs: Wood dust, Group 1
- OSHA Regulated: Not listed

**NTP:** According to its *Tenth Report on Carcinogens*, NTP states, "Wood dust is known to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in humans. An association between wood dust exposure and cancer of the nose has been observed in many case reports, cohort studies, and case-control studies that specifically addressed nasal cancer. Strong and consistent associations with cancer of the nasal cavities and paranasal sinuses were observed both in studies of people whose occupations are associated with wood dust exposure and in studies that directly estimated wood dust exposure."

**IARC – Group I:** Carcinogenic to humans; sufficient evidence of carcinogenicity. This classification is primarily based on studies showing an association between occupational exposure to wood dust and adenocarcinoma to the nasal cavities and paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure to wood dust and cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum.

**Section 12. Ecological Information**

Nitrogen is a critical element for plant growth and a basic constituent of proteins. In excess, however, it can make soil conditions less favorable for plant growth, damage aquatic life, and impair human health.

Phosphorus is an essential nutrient for plants and animals; however, excessive accumulation of nutrients can represent too much of a good thing, especially in water bodies such as lakes, streams and estuaries. Loading of nutrients to surface waters causes changes in ecological function, and often has undesirable environmental and economic consequences.

Eutrophication is the enrichment of freshwater and marine systems with nutrients, particularly nitrogen and phosphorus.

Environmental Toxicity: None known.

Environmental Fate: Wood is a naturally occurring product and decomposes into soil and soil enrichments. The nitrogen and phosphorus compounds are plant nutrients and are normal soil additives.



### Section 13. Disposal Considerations

Recover or recycle if possible.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Dispose of as you would any other discarded wooden building component.

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

### Section 14. Transport Information

Not regulated as a hazardous material by the U.S. Department of Transportation.

Not listed as a hazardous material in Canadian Transportation of Dangerous Goods (TDG).

### Section 15. Regulatory Information

#### US Federal Regulations

All components are on the U.S. EPA TSCA Inventory List.

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

**FIFRA:** No information is available.

**CERCLA:** Not Applicable

**OSHA:** Wood dust may be hazardous under the criteria of the federal OSHA Hazard Communication standard 29 CFR 1910.1200.

**FDA:** Not Applicable

#### State Right-To-Know

This product is not considered hazardous for SARA Title III sections 311/312.

Other state regulations may apply. Check individual state requirements.

Pennsylvania: Wood dust (certain hardwoods as beech and oak) softwood appears on Pennsylvania's *Appendix A – Hazardous Substance Lists*.

#### Canada

**WHMIS Classification:** Wood dust is not considered a controlled product.

**DSL/NDL:** CAS# 68424-85-1 is listed on Canada's DSL List.

## Section 16. Other Information

**Effective Date:** 10/20/2005

**Prepared By:** Hoover Treated Wood Products, Inc.

**User's Responsibility:**

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 or any nature whatsoever resulting from the use of or reliance upon this information. The user has the responsibility to make sure that this sheet is the most up-to-date issue.

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.

**Definition of Common Terms:**

ACGIH	=	American Conference of Governmental Industrial Hygienists
C	=	Ceiling Limit
CAA	=	Clean Air Act
CAS#	=	Chemical Abstracts System Number
CERCLA	=	Comprehensive Environmental Response, Compensation and Liability Act
CFR	=	Code of Federal Regulations
CWA	=	Clean Water Act
DOT	=	U. S. Department of Transportation
DSL	=	Domestic Substance List
EC50	=	Effective concentration that inhibits the endpoint to 50% of control population
EPA	=	U.S. Environmental Protection Agency
FIFRA	=	Federal Insecticide, Fungicide and Rodenticide Act
IARC	=	International Agency for Research on Cancer
IATA	=	International Air Transport Association
IBC	=	International Building Code
IMDG	=	International Maritime Dangerous Goods
LC50	=	Concentration in air resulting in death to 50% of experimental animals
LCLo	=	Lowest concentration in air resulting in death
LD50	=	Administered dose resulting in death to 50% of experimental animals
LDLo	=	Lowest dose resulting in death
LEL	=	Lower Explosive Limit
LFL	=	Lower Flammable Limit
MSHA	=	Mining Safety and Health Administration
NAP	=	Not Applicable
NAV	=	Not Available
NFPA	=	National Fire Protection Association
NIOSH	=	National Institute for Occupational Safety and Health
NPRI	=	Canadian National Pollution Release Inventory
NTP	=	National Toxicology Program
OSHA	=	Occupational Safety and Health Administration
PEL	=	Permissible Exposure Limit
RCRA	=	Resource Conservation and Recovery Act
SARA	=	Superfund Authorization and Reauthorization Act
STEL	=	Short-Term Exposure Limit (15 minutes)

STP	=	Standard Temperature and Pressure
TCLo	=	Lowest concentration in air resulting in a toxic effect
TDG	=	Canadian Transportation of Dangerous Goods
TDLo	=	Lowest dose resulting in a toxic effect
TLV	=	Threshold Limit Value
TSCA	=	Toxic Substance Control Act
TWA	=	Time-Weighted Average (8 hours)
UFL	=	Upper Flammable Limit
WHMIS	=	Workplace Hazardous Materials Information System

**Hazard Information Label Text:**

**FIRE RETARDANT TREATED WOOD DUST  
CAUTION!**

Sawing, sanding or machining wood products can produce wood dust that can cause a flammable or explosive hazard.

Wood dust may cause lung, upper respiratory tract, eye and skin irritation. Some wood species may cause dermatitis and/or respiratory allergic effects.

- Avoid dust contact with ignition sources.
- Sweep or vacuum dust for recovery or disposal.
- Avoid prolonged or repeated breathing of wood dust in the air.
- Avoid dust contact with eyes and skin.
- Refer to FIRE RETARDANT TREATED WOOD MSDS for additional information.

**FIRST AID:** In case of contact, flush eyes or skin with water. If irritation persists, call a physician.

**CONTACT:** For additional information, please contact the manufacturer.