

Safety Data Sheet

Medium Density Fiberboard

Section 1: Identification

Product Name

Synonyms

- **MDF**

- Superior MDF, Premier MDF; Fibrex®; Custom MDF; Vesta MDF; VESTA FR MDF

This SDS is applicable for all Arauco North America Medium Density Fiberboard manufactured at the sites noted including MDF specialty products such as Fibrex® thin HDF, moisture-resistant (MR), flame-retardant (FR), panels manufactured with ultra-low emitting resins, and panels laminated with thermally fused laminate (TFL)/melamine.

Product Description

Recommended use

Manufacturing Sites

- A wood product composed of wood and cured amino resins
- Building Materials – Decorative, Furniture, General Construction
- St. Stephen, NB
Sault Ste. Marie, ON
Bennettsville, SC
Moncure, NC
Malvern, AR
Eugene, OR

Supplier

ARAUCO North America
5901-B Peachtree Dunwoody Rd NE,
Suite 500
Atlanta, GA 30328
USA
<http://www.arauco-na.com/>

Telephone (General)

- 800-261-4890

Suppliers

- **Canadian Regional Center**

80 Tiverton Court, Suite 701
Markham L3R 0G4
Canada

Tel: (905) 475-9686
Fax: (905) 475-3827

- **US Eastern Regional Center**

515 River Crossing Drive,
Suite 110
Fort Mill, SC 29715

Tel: (877) 273-7680
Fax: (800) 808-1454

- **US Western Regional Center**

2550 NE Old Salem Road
Albany, OR 97321
Tel: (888) 650-6302
Fax: (541) 928- 4116

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

- OSHA HCS 2012**
- This product is generally an article but is regulated under OSHA for the release of wood dust during mechanical operations releasing dust. The free formaldehyde levels are below OSHA reporting requirements. The classifications below are based upon wood dust.

Skin Irritation 2
Skin Sensitization 1
Eye Mild Irritation 2B
Respiratory Sensitization 1
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Carcinogenicity 1A
Combustible Dust

Label elements

OSHA HCS 2012

DANGER



- Hazard statements**
- Causes skin irritation
 - May cause an allergic skin reaction
 - Causes eye irritation
 - May cause respiratory irritation
 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
 - May cause cancer via inhalation of respirable dust
 - May form combustible dust concentrations in air.

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Do not breathe dust.
 - Contaminated work clothing should not be allowed out of the workplace.
 - In case of inadequate ventilation wear respiratory protection.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves/protective clothing/eye protection.
- Response**
- IF ON SKIN: Wash with plenty of soap and water.
 - If skin irritation or rash occurs: Get medical advice/attention.



Safety Data Sheet

COMPOSITE PANELS

 Building Materials
 Structural,
 Industrial or Decorative

 PAGE
 3 of 13

Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF exposed or concerned: Get medical advice/attention.

Storage/Disposal • Store away from water and ignition sources. It is recommended to store the product in an area with relative humidity and temperature that approximates end use conditions.

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

OSHA HCS 2012 • This product is not considered hazardous under the U.S. OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Other information

NFPA • Health = 1, Flammability = 1, Reactivity = 0, Special Information = None

HMIS • Health = *1, Flammability = 1, Reactivity = 0, PPE = E

* Chronic Health Hazard

E = Safety glasses, gloves, and a dust respirator

Section 3 - Composition/Information on Ingredients

Mixtures

These wood products are composed of wood and cured amino resins. See Section 8 for exposure limits discussion.

Components shown below may appear in some or in various combinations in a particular MDF product. With the exception of Formaldehyde, only hazardous components above the appropriate cut-off limit are shown.

Composition			
Chemical Name	Identifiers	%	Hazardous
Wood fibers *	CAS: Not Available	73% TO 93%	Yes
Cured Amino Resin	CAS: Proprietary	0% TO 17%	No
Cured Amino Resin	CAS: Proprietary	0% TO 16.5%	Yes
Urea	CAS: 57-13-6	0% TO 3%	Yes
Formaldehyde	CAS: 50-00-0	<0.1%	Yes

* Wood contains trace amounts of various chemicals present in the environment which are absorbed by trees through natural growth. A comprehensive listing of species is available upon request.

All products produced at Arauco NA mills are certified to the Composite Panel Association's Eco-certified Composite (ECC) Sustainability Standard which requires adherence to the strict California Air Resources Board (CARB) Composite Wood Formaldehyde Air Toxic Control Measure (CARB ATCM 93120.12).

CALIFORNIA RESIDENTS: This product contains one or more chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation** • IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Skin** • IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
- Eye** • IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Ingestion** • Health effects are not known or expected to occur under normal use. Low hazard for usual industrial or commercial handling.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable • SMALL FIRES: Dry chemical, CO₂, water spray or regular foam.

Extinguishing Media LARGE FIRE: Water spray, fog or regular foam.

Unsuitable • No data available

Extinguishing Media

Firefighting Procedures • No special procedures. Fire-fighting procedures for wood products are well known.

Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards** • MDF is not an explosion hazard. Sawing, sanding, or machining MDF could result in the by-product wood dust. Wood dust may present a strong to severe explosion hazard if a dust cloud contacts an ignition source.
- Airborne concentrations of 40 grams per cubic meter are often used as the lower explosive limit (LEL) for wood dusts. OSHA interprets the explosive level as having no visibility within five feet or less.
- Hazardous Combustion Products** • Burning of MDF can result in carbon dioxide, carbon monoxide, oxides of nitrogen, aldehydes, cyanides and other hazardous gases and particles.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Do not breathe dust.

Emergency Procedures • No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.

Environmental precautions

- No known significant environmental effects.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Not applicable for product in purchased form. Dust generated from sawing, sanding, drilling or routing this product may be vacuumed or shoveled for recovery or disposal. Wood dust clean-up and disposal activities should be accomplished in a manner to minimize creation of airborne dust.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • No special precautions for handling product. Use good safety and industrial hygiene practices. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Conditions for safe storage, including any incompatibilities

Storage • Avoid storage where exposure to water could occur or near a source of ignition. It is recommended to store the product in an area with relative humidity and temperature that approximates end use conditions. Keep away from sources of ignition - No Smoking.

Incompatible Materials or Ignition Sources • Keep away from ignition sources.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines • No data available.

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Wood dust	TWAs	1 mg/m ³ TWA <i>as Wood dust, all soft and hard woods</i>	1 mg/m ³ TWA <i>as Wood dust, all soft and hard woods</i>	15 mg/m ³ , total dust (5 mg/m ³ , respirable fraction) (as nuisance dust)
Formaldehyde (50-00-0)	TWAs	0.3 ppm STEL	0.016 ppm TWA	0.75 ppm TWA

Exposure controls

Engineering Measures/Controls • Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values. Due to the explosive potential of wood dust when suspended in air, precautions should be taken during sanding, sawing or machining of wood products to prevent sparks or other ignition sources in ventilation equipment. Use of totally enclosed motors is recommended.

Personal Protective Equipment

Pictograms



Respiratory • Use of a NIOSH/MSHA approved dust respirator is recommended where airborne dust levels exceed appropriate PELs and TLVs.

Eye/Face • Wear safety glasses.

- Hands**
- Wear protective gloves - Rubberized cloth, canvas or leather gloves.
- Skin/Body**
- Wear long sleeves and/or protective coveralls.
- General Industrial Hygiene Considerations**
- Practice good housekeeping and avoid creating/breathing dust. Do not allow dust to collect. Maintain, clean, and fit test respirators in accordance with OSHA regulations.
- Environmental Exposure Controls**
- No data available

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid A panel product manufactured from wood fibers bonded with synthetic resins or other bonding system	Appearance/Description	MDF panel.
Color	Straw yellow (light brown)	Odor	No distinctive odor.
Taste	No data available.	Odor Threshold	Not relevant
General Properties			
Boiling Point	Not relevant	Melting Point	Not relevant
Decomposition Temperature	No data available	pH	Not relevant
Specific Gravity/Relative Density	Not relevant	Density	No data available
Bulk Density	No data available	Water Solubility	Insoluble
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	No data available
Evaporation Rate	Not relevant	VOC (Vol.)	0 %
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Burning Time	No data available
Autoignition	425 to 475 F(218.3 to 246.1 C)	Flammability (solid, gas)	No data available

Section 10: Stability and Reactivity

Reactivity

- The product is stable.

Chemical stability

- Stable

Possibility of hazardous reactions

- Hazardous polymerization not indicated. Hazardous polymerization will not occur.

Conditions to avoid

- Exposure to water, ignition source, high relative humidity and high temperature.

Incompatible materials

- Incompatible Materials: Acids (strong), Oxidizers (strong)

Hazardous decomposition products

- Hazardous decomposition may occur. Thermal and/or thermal oxidative decomposition can produce irritating and toxic fumes and gases, generating carbon oxides, nitrogen oxides, HCN, aldehydes and organic acids.

Section 11 - Toxicological Information

Information on toxicological effects

Other Material Information

- Not applicable for product in purchased form. Individual component information is provided below if available.

Components		
Cured Amino Resin	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 8394 mg/kg; Inhalation-Rat LC50 • >167 mg/m ³ 4 Hour(s); Irritation: Eye-Rabbit • 100 µL 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
Urea	57-13-6	Acute Toxicity: Ingestion/Oral-Rat LD50 • 8471 mg/kg; Ingestion/Oral-Rat TDLo • 750 mg/kg; <i>Kidney, Ureter, and Bladder:Urine volume increased; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Na; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:K;</i> Irritation: Skin-Human • 20 % 24 Hour(s) • Moderate irritation; Multi-dose Toxicity: Inhalation-Rat TCLo • 288 mg/m ³ 17 Week(s)-Intermittent; <i>Kidney, Ureter, and Bladder:Other changes in urine composition; Blood:Other changes; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Cl;</i> Tumorigen / Carcinogen: Ingestion/Oral-Rat TDLo • 821 g/kg 1 Year(s)-Continuous; <i>Tumorigenic:Neoplastic by RTECS criteria; Blood:Tumors; Blood:Lymphoma, including Hodgkin's disease</i>
Formaldehyde	50-00-0	Acute Toxicity: Ingestion/Oral-Rat LD50 • 100 mg/kg; Inhalation-Rat LC50 • 203 mg/m ³ ; <i>Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change; Behavioral:Convulsions or effect on seizure threshold; Behavioral:Excitement;</i> Irritation: Eye-Rabbit • 750 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 2 mg 24 Hour(s) • Severe irritation; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 500 mg/kg 20 Day(s)-Intermittent; <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Transaminases;</i> Inhalation-Mouse TCLo • 400 ppb 12 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Endocrine:Changes in spleen weight; Biochemical:Metabolism (intermediary):Other proteins;</i> Mutagen: Micronucleus test • Inhalation-Human • 2 ppm 15 Minute(s); Micronucleus test • Inhalation-Human • 0.1 ppm 8 Hour(s); Reproductive: Inhalation-Rat TCLo • 12 µg/m ³ 24 Hour(s)(15D pre/1-22D preg); <i>Reproductive Effects:Effects on Newborn:Growth statistics (e.g., reduced weight gain); Reproductive Effects:Effects on Newborn:Other postnatal measures or effects</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012•Acute Toxicity - Data lacking (Oral, dermal, inhalation)
Aspiration Hazard	OSHA HCS 2012•Data lacking
Carcinogenicity	OSHA HCS 2012•Carcinogenicity 1A
Germ Cell Mutagenicity	OSHA HCS 2012•Data lacking
GHS Properties (cont'd)	Classification
Skin corrosion/Irritation	OSHA HCS 2012•Skin Irritation 2

Skin sensitization	OSHA HCS 2012 •Skin Sensitizer 1
STOT-RE	OSHA HCS 2012 •Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	OSHA HCS 2012 •Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	OSHA HCS 2012 •Data lacking
Respiratory sensitization	OSHA HCS 2012 •Respiratory Sensitizer 1
Serious eye damage/Irritation	OSHA HCS 2012 •Eye Mild Irritation 2B

Target Organs • Skin/Dermal, Lungs, Respiratory System

Route(s) of entry/exposure • Inhalation, Skin, Eye

Medical Conditions Aggravated by Exposure • Dusts may aggravate asthma or other respiratory disorders.

Potential Health Effects

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs include:

Inhalation

Acute (Immediate) • May cause respiratory irritation.

Chronic (Delayed) • Repeated and prolonged exposure may cause cancer. Repeated and prolonged exposure may cause sensitization of the respiratory system.

Skin

Acute (Immediate) • May cause irritation.

Chronic (Delayed) • Repeated and prolonged exposure may cause sensitization.

Eye

Acute (Immediate) • May cause irritation.

Chronic (Delayed) • No data available.

Ingestion

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • Under normal conditions of use, no health effects are expected.

Carcinogenic Effects • Wood dust is listed by NTP known to be a Human Carcinogen (10th Report), IARC Monographs: Wood dust, Group 1 - IARC Group 1: 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 of 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 hypopharynx, oropharynx, lymphatic and hematopoietic systems, lungs, stomach, colon or rectum.

Carcinogenic Effects				
	CAS	OSHA	IARC	NTP
Wood dust as Wood dust, all soft and hard woods	Not Available	Not Listed	Group 1-Carcinogenic	Known Human Carcinogen
Formaldehyde	50-00-0	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen

Section 12 - Ecological Information

Toxicity

- No information available at this time. As with all foreign substances do not allow to enter the storm drainage systems. These wood products are not expected to pose an ecological hazard as a result of their intended use.

Persistence and degradability

- No data available

Bioaccumulative potential

- No data available

Mobility in Soil

- No data available

Section 13 - Disposal Considerations

Waste treatment methods

- Product waste**
- Burn in a municipal incinerator. Dispose of in an approved landfill. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

- Packaging waste**
- No data available.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	No Data Available	No Data Available	No Data Available	No Data Available	No Data Available
TDG	No Data Available	No Data Available	No Data Available	No Data Available	No Data Available

Special precautions for user

- No special precautions.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- No data available

Other information

- DOT**
- Not regulated as a hazardous material.

TDG • Not regulated as a dangerous good.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the mixture

SARA Hazard Classifications

- Acute, Chronic

Component	CAS	Inventory	
		Canada DSL	TSCA
MDF TERRA	Not Applicable	Not listed. All components are on the Canada DSL or are excluded from listing.	Not listed. All components are on the TSCA inventory or are excluded from listing.

Canada

Labor

Canada - WHMIS - Classifications of Substances

•MDF and ingredients (unless listed below)	N/A	Not listed or below de minimis reporting quantities
•Formaldehyde	50-00-0	A, B1, D1A, D2A, D2B; B3, D1A, D2A, D2B, E (regulated under Formol)

Canada - WHMIS - Ingredient Disclosure List

•MDF and ingredients (unless listed below)	N/A	Not listed or below de minimis reporting quantities
•Formaldehyde	50-00-0	0.1% (concentration in product is below de minimis)

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•MDF and ingredients (unless listed below)	N/A	Not Listed
•Formaldehyde	50-00-0	1000 lb TQ

Environment

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•MDF and ingredients (unless listed below)	N/A	Not Listed
•Formaldehyde	50-00-0	100 lb final RQ; 45.4 kg final RQ

U.S. - CERCLA/SARA - Section 304 Extremely Hazardous Substances EPCRA RQs

•MDF and ingredients (unless listed below)	N/A	Not Listed
•Formaldehyde	50-00-0	100 lb EPCRA RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA TPQs

•MDF and ingredients (unless listed below)	N/A	Not Listed
•Formaldehyde	50-00-0	500 lb TPQ

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•MDF and ingredients (unless listed below)	N/A	Not Listed
•Formaldehyde	50-00-0	0.1% de minimis concentration (concentration in product is below de minimis)



Safety Data Sheet

COMPOSITE PANELS

*Building Materials
Structural,
Industrial or Decorative*

 PAGE
11 of

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• MDF and ingredients (unless listed below)	N/A	Not Listed
• Formaldehyde	50-00-0	carcinogen, initial date 1/1/88 (gas)
• Wood dust as Wood dust, all soft and hard woods	N/A	carcinogen, initial date 12/18/09

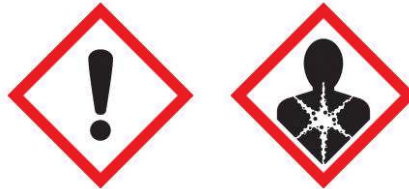
Section 16 - Other Information

- Classification method for mixtures**
- Cut-off values/concentration limits of ingredients.
- Last Revision Date**
- February 7, 2014
- Preparation Date**
- June 1, 2015
- Disclaimer/Statement of Liability**
- The information contained in this Safety Data Sheet is based on the experience of occupational 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 sheet is the most up-to-date issue.
 - Arauco North America is a trade name used by Flakeboard Company Limited, Flakeboard America Limited, Arauco Panels USA LLC, and other North America affiliates, each of which is an independent company and is not liable or responsible for acts or obligations of its affiliates.

GHS Product Hazard Label

MDF

According to OSHA 29 CFR 1910.1200 HCS



DANGER

This product is generally an article but is regulated under OSHA for the release of wood dust during mechanical operations releasing dust. No adverse health effects are expected if the product is handled in accordance with the product label and the product Safety Data Sheet. Symptoms or effects that may arise if the product is mishandled and overexposure occurs include:

Causes skin irritation.

May cause an allergic skin reaction.

Causes eye irritation.

May cause respiratory irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause cancer via inhalation of respirable dusts.

May form combustible dust concentrations in air.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

In case of inadequate ventilation wear respiratory protection.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF exposed or concerned: Get medical advice/attention.

Store away from water and sources of ignition. It is recommended to store the product in an area with relative humidity and temperature that approximates end use conditions.

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

California Proposition 65 Notification Requirement

Warning

Drilling, sawing, or machining wood products generates wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

ARAUCO North America, 5901-B Peachtree Dunwoody Rd NE, Suite 500
Atlanta, GA 30328
General Information: 800-261-4890