Safety Data Sheet (SDS)

Bark

1. Identification

TRADE NAME(S):	Bark
SYNONYMS and/or GRADES:	Wood Waste
PRODUCT USES:	Raw Materials/Fuel or Wastes
CHEMICAL NAME/CLASS:	Wood Products
MANUFACTURER'S NAME:	Weyerhaeuser
ADDRESS:	220 Occidental Ave S., Seattle, WA 98104
EMERGENCY PHONE (DOT):	(844) 523-4081 (3E Company)
BUSINESS PHONE:	(206) 539-3910
INTERNET ACCESS:	See Section 16
DATE:	August 27, 2018

2. Hazard(s) Identification

Signal Word: DANGER

NOTE: This material, which contains wood and varying amount of tramp soil may become hazardous as the result of downstream activities (e.g. grinding, processing) which generate small airborne particles. If the material contains a significant amount of dust as shipped, then the product may produce hazardous airborne levels of wood and bark dust while being transported or handled by downstream users, creating potential hazards as described below:

Classification	Hazard Statement(s)	Pictogram(s)
HEALTH Carcinogen- Category 1 (If crystalline silica present) (H350)*	Crystalline silica may cause cancer of the lung	
Carcinogen- Category 1A (H350)	Wood dust may cause nasopharyngeal cancer and/or cancer of the nasal cavities and paranasal sinuses by inhalation	
Toxicity - Repeated Exposure, Inhalation (Category 1) (H372) (If crystalline silica present)	Crystalline silica may cause damage to the respiratory system through prolonged or repeated exposures if inhaled	

2. Hazard(s) Identification (cont'd.)

Skin Irritation Category 2 (H315) Specific Target Organ Toxicity- Single Exposure (STOT) Category 3 (H335)	causes skin irritation May cause respiratory irritation	
Eye Irritation Category 2B (H320)	Causes eye irritation	None
Combustible Dust (OSHA Defined Hazard)	If product contains or is converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air	None

*****Hazard codes (GHS)

HMIS Rating (Scale 0-4):	**Health =**	3*	**Fire =**	1	**Physical Hazard =**	0
NFPA Rating (Scale 0-4):	**Health =**	1	**Fire =**	1	**Reactivity =**	0

Precautionary Statement(s):

Prevention Statements**:**

P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from sparks, flame or other heat sources.
P243: Take precautionary measures against static discharge.
P261+284: Avoid breathing dust. In case of inadequate ventilation wear an approved respirator suitable for conditions of use.
P271: Use outdoors or in a well-ventilated area.
P280: Wear appropriate protective equipment for eye and skin exposure.

Response Statements:

P304+P340+P313: If inhaled and breathing becomes difficult, remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a doctor or other qualified medical professional.
P333+P313: If skin irritation or rash occurs get medical advice/attention.
P352+P264: If on skin wash with plenty of soap and water.
P362+P364: Take off contaminated clothing and wash before reuse.
P305+P351+P338: If in eyes, rinse cautiously for several minutes. Remove contact lenses if present and easy to do so.

Disposal:

P501: Dispose of in accordance with federal, state and local regulations.

Ingredients of Unknown Acute Toxicity (>1%): NAP

3. Composition/Information on Ingredients

Ingredients	CAS#	Wt. %
Wood (Bark and wood dust, softwoods and hardwoods)	None	98-100
Silica (Crystalline)*	14808-60-7	0-2

* Silica content will vary by the amount of tramp soil material present and its mineral composition

4. First Aid Measures

Inhalation: Remove to fresh air. Seek medical help if persistent irritation, severe coughing or breathing difficulty occurs.

Eye Contact: Treat dust in eye as a foreign object. Flush with water to remove dust particles. Remove contact lenses if present and easy to do so. Avoid touching or rubbing eyes to avoid further irritation or injury. Seek medical help if irritation persists.

Skin Contact: Bark dust can elicit contact dermatitis. Seek medical help if rash, irritation or dermatitis persists.

Skin Absorption: Not known to be absorbed through the skin.

Ingestion: Not applicable under normal use.

Symptoms or Effects:

Acute Symptoms/Effects – Bark dust may cause mechanical irritation of the respiratory system. Dust can cause physical obstructions in the nasal passages, resulting in dryness of nose, dry cough, and sneezing. Dust may cause mechanical irritation of the eyes.

Delayed Symptoms/Effects – None noted. See Section 11 for additional information on chronic effects.

5. Fire-fighting Measures

Extinguishing Media and Restrictions: Water, carbon dioxide and sand.

Specific Hazards, Anticipated Combustion Products: Thermal decomposition (i.e. smoldering, burning) products include carbon monoxide, carbon dioxide, aliphatic aldehydes, terpenes, and polycyclic aromatic hydrocarbons.

Autoignition Temperature: Variable [typically 400°-500°F (204°-260°C)]

Special Firefighting Equipment/Procedures: No special equipment anticipated. Beware of potential combustible dust explosion hazard.

Unusual Fire and Explosion Hazards: Depending on moisture content and more importantly, particle diameter and airborne concentration, bark and wood dust may explode in the presence of an ignition source. If suspended in air in an enclosure or container and ignited, an explosion may occur due to the development of internal pressure causing rupture. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the Minimum Explosible Concentration (MEC) for wood dusts. Conduct regular housekeeping inspections and cleaning to prevent excessive dust accumulations. Design and maintain control equipment to minimize fugitive combustible dust emissions. Ensure that ventilation systems are operating properly to capture, transport and contain combustible dust while controlling ignition sources. Reference NFPA 652 “Standard on the Fundamentals of Combustible Dust”.

6. Accidental Release Measures

Steps to be taken in case Material Is Released or Spilled: Sweep or vacuum up for recovery and disposal. Avoid creating dusty conditions whenever feasible. Maintain good housekeeping to avoid accumulation of wood dust on exposed surfaces. Use approved filtering face piece respirator (“dust mask”) or higher levels of respiratory protection as indicated and goggles where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort.

7. Handling and Storage

Precautions to be taken in Handling and Storage: Dried bark dust may pose a combustible dust hazard. Keep away from ignition sources. Avoid eye contact. Avoid prolonged or repeated contact with skin. Avoid prolonged or repeated breathing of wood/bark dust and associate soil material. Store in well-ventilated, cool, dry place away from open flame.

8. Exposure Control Measures/Personal Protection

Exposure Limits/Guidelines:

Ingredient(s)	Agency	Exposure Limit(s)	Comments
Wood Dust (Bark) *	OSHA	PEL-TWA 15 mg/m^3 (see footnote [A] below)	Total Dust (PNOR)
	OSHA	PEL-TWA 5 mg/m^3 (see footnote [A] below)	Respirable dust fraction (PNOR)
	ACGIH	TLV-TWA 1 mg/m^3	Inhalable Dust Fraction
Silica, Crystalline Quartz (if present)	OSHA	PEL-TWA 0.05 mg/m^3	Respirable fraction
	ACGIH	TLV-TWA 0.025 mg/m^3	Respirable fraction

***** The reported limits are for wood dust. Bark has variable wood content specific to the location of the source and may or may not contain wood in a form as defined and established for the regulatory exposure limits (OSHA and ACGIH).

[A] In AFL-CIO v OSHA, 965 F. 2d 962 (11th Cir. 1992), the Court overturned OSHA's 1989 Air Contaminants Rule, including the specific PEL's for wood dust that OSHA had established at that time. The 1989 vacated PEL's were: 5 mg/m^3 PEL-TWA and 10 mg/m^3 STEL (15 min), all softwood and hardwood except Western Red Cedar. Wood dust is now regulated by OSHA as "Particulates Not Otherwise Regulated" (PNOR), which is also referred to as "nuisance dust". However, some states have regulated wood dust PEL's in their state plans. Additionally, OSHA indicated that it may cite employers under the OSH Act general duty clause in appropriate circumstances.

Ventilation:

LOCAL EXHAUST – For fixed locations, provide local exhaust as needed so that exposure limits are met. Ventilation to control dust should be considered where potential explosive concentrations and ignition sources are present. The design and operation of any exhaust system should consider the possibility of explosive concentrations of dust within the system. See "SPECIAL" section below.

MECHANICAL (GENERAL) – For fixed locations, provide general ventilation in processing and storage areas so that exposure limits are met.

SPECIAL – Ensure that exhaust ventilation and material transport systems involved in handling this product contain explosion relief vents or suppression systems designed and operated in accordance with applicable standards if the operating conditions justify their use.

OTHER ENGINEERING CONTROLS – Consider use of water spray systems where feasible to minimize release of airborne dusts.

8. Exposure Control Measures/Personal Protection (cont'd.)

Personal Protective Equipment:

RESPIRATORY PROTECTION – Use filtering face piece respirator ("dust mask") or respirators with greater levels of protection tested and approved under appropriate government standards such as NIOSH (US), CSA (Canada), CEN (EU), or JIS (Japan). Use respiratory protection where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort or symptom relief. Use respiratory protection in accordance with regulatory requirements such as the OSHA respiratory protection standard 29 CFR 1910.134 following a determination of risk from potential exposures, which includes consideration of potential respirable crystalline silica exposures.

EYE PROTECTION – Approved goggles or tight-fitting safety glasses are recommended when excessive exposures to dust may occur (e.g. during clean up) and when eye irritation may occur.

PROTECTIVE GLOVES – Cloth, canvas, or leather gloves are recommended to prevent direct contact and to minimize potential mechanical irritation from handling product.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT – Outer garments which cover the arms may be desirable in extremely dusty areas.

WORK/HYGIENE PRACTICES – Follow good hygienic and housekeeping practices. Clean up areas where dust settles to avoid excessive accumulation of this combustible material. Minimize compressed air blowdown or other practices that generate high airborne-dust concentrations.

9. Physical/Chemical Properties

Appearance: Light to dark colored, granular solid bark materials mixed with varying amounts of soil and mineral materials. Color and odor are dependent on the wood species and time since product was generated.

Odor/Odor Threshold(s):	NAV
pH:	NAP
Melting/Freezing Point:	NAP
Boiling Point (@ 760 mm Hg) and Range:	NAP
Flash Point:	NAV
Evaporation Rate:	NAP
Flammability:	NAV
Lower/Upper Explosive Limits:	NAV
Vapor Pressure (mm Hg):	NAP
Vapor Density (air = 1; 1 atm):	NAP
Relative Density:	NAP
Solubility:	<0.1
Partition Coefficient (n-octanol/water):	NAP
Autoignition Temperature:	Variable [typically 400°-500°F (204°-260°C)]
Decomposition Temperature:	NAV
Viscosity:	NAP
Other Properties:	NAP

10. Stability and Reactivity

Reactivity: NAP

Hazardous Polymerization: ☐ May occur ☒ Will not occur

Stability: ☐ Unstable ☒ Stable

Conditions to Avoid: Avoid all sources of ignition.

Incompatibility (Materials to Avoid): NAV

Hazardous Decomposition or By-Products: Natural decomposition of organic materials such as bark may produce toxic gases and an oxygen deficient atmosphere in enclosed or poorly ventilated areas. Spontaneous and rapid hazardous decomposition will not occur.

Sensitivity to Static Discharge: Airborne bark dust may be ignited by a static discharge depending on airborne concentrations, particle size and moisture content.

11. Toxicological Information

Likely Route(s) of Exposure:

- ☐ Ingestion:
- ☒ Skin: Dust
- ☒ Inhalation: Dust
- ☒ Eye: Dust

Signs and Symptoms of Exposure:

Wood Dust - NTP: According to its Report on Carcinogens, Fourteenth Edition, 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 nasal cavity has been observed in case reports, cohort studies, and case-control studies that specifically addressed nasal cancer. 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. 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. There is inadequate evidence for the carcinogenicity of wood dust from studies in experimental animals according to NTP.

Silica - NTP: According to its Report on Carcinogens, Fourteenth Edition, NTP classifies "Silica, Crystalline (respirable size)" as known to be a human carcinogen.

Wood Dust: 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 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.

Silica: IARC – Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity. IARC concluded that "crystalline silica in the form of quartz or cristobalite dust is carcinogenic to humans (Group 1)".

Acute Health Hazards: Bark dust may cause mechanical irritation of the respiratory system. Dust can cause physical obstructions in the nasal passages, resulting in dryness of nose, dry cough, and sneezing. Dust may cause mechanical irritation of the eyes.

Chronic Health Hazards: Prolonged inhalation of respirable crystalline silica, if present, may result in silicosis, a disabling pulmonary fibrosis characterized by fibrotic changes and lung nodules, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. May cause lung cancer (quartz or cristobalite forms). See wood dust chronic hazards above.

11. Toxicological Information (cont'd.)

Carcinogenicity Listing:

☒	NTP:	May contain crystalline silica, known to be a human carcinogen. Wood dust, Known Human Carcinogen.
☒	IARC Monographs:	May contain crystalline silica, Group 1, carcinogenic to humans. Wood dust, Group 1 - Carcinogenic to Humans. Bark is variable in wood content and may or may not contain wood as defined in the IARC determination of carcinogenicity for wood dust.
☒	OSHA Regulated:	Crystalline Silica- 29 CFR 1910.1053

Toxicity Data: No specific information available for product or material in purchased form.
Components: NAV
Target Organs: Eyes, skin and respiratory system.

12. Ecological Information

Ecotoxicity: NAV for finished product.
Biopersistance and Degradability: Bark would be expected to be biodegradable.
Bioaccumulation: Not expected to bioaccumulate.
Soil Mobility: NAV
Other Adverse Effects: NAP

13. Disposal Considerations

Waste Disposal Method: If disposed of or discarded in its purchased form, incineration is preferable, if allowed. Dry land disposal is acceptable in most states. It is, however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste. Follow applicable federal, state, and local regulations.

14. Transport Information

Mode: (air, land, water) 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).

UN Proper Shipping Name:	NAP
UN/NA ID Number:	NAP
Hazard Class:	NAP
Packing Group:	NAP
Environmental Hazards (Marine Pollutant):	NAP
Special Precautions	NAP

15. Regulatory Information

TSCA: NAP
CERCLA: NAP
DSL: NAP
OSHA: Wood products are not hazardous under the criteria of the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, wood (bark) dusts generated by, sanding or machining activities is considered hazardous. Silica (if present), is regulated by OSHA as a hazardous substance.

15. Regulatory Information (cont'd.)

STATE RIGHT-TO-KNOW:
California Proposition 65 –

WARNING: This product can expose you to chemicals including wood dust which are known to the State of California to cause cancer, and methanol, which are known to the State of California to cause birth defects or other reproductive harm. Drilling, sawing, sanding or machining wood products can expose you to wood dust. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov and www.P65Warnings.ca.gov/wood.
This product also may release crystalline silica (airborne, particles of respirable size), a chemical known to the state of California to cause cancer, depending on the origin and handling of the material. Crystalline silica particles of respirable size may be contained in or on the product and released during transport or processing.

Massachusetts – Crystalline silica and wood dust are listed on the Right to Know List.
Pennsylvania – Crystalline silica and wood dust are listed on Pennsylvania's Appendix A – Hazardous Substance List.

SARA 313 Information: This material does not contain any chemical ingredient (s) that exceed the de minimis reporting levels established by SARA Title III, section 313 and 40 CFR section 372.

SARA 311/312 Hazard Category: This material 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.

WHMIS Classification: Wood and products made from wood are exempt from WHMIS per the Hazardous Products Act (HPA). However, wood dust released during the use or modifications of wood products may be hazardous. See Section 2 for health and combustible dust hazard information.

16. Other Information

Date Prepared: 09/13/2016
Date Revised: 08/27/2018
Prepared By: Weyerhaeuser Company Health and Safety.
Weyerhaeuser SDS available on:
http://www.wy.com/sustainability/environment/product-stewardship/safety-data-sheets/

User's Responsibility: 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 ensure the most current SDS is used.

16. Other Information (cont'd.)

Definition of Common Terms:

ACGIH®	=	American Conference of Governmental Industrial Hygienists
C	=	Ceiling Limit
CAS#	=	Chemical Abstracts System Number
DOT	=	U. S. Department of Transportation
DSL	=	Domestic Substance List
EC#	=	Identifying Number Assigned to Chemicals Contained in the European Inventory of Existing Chemical Substances (EINECS)
EC_{50}	=	Effective Concentration That Inhibits the Endpoint to 50% of Control Population
EPA	=	U.S. Environmental Protection Agency
GHS	=	Globally Harmonized System of Classification and Labelling of Chemicals
HMIS	=	(Canada) Hazardous Materials Identification System
HNOC	=	Hazards Not Otherwise Classified
IARC	=	International Agency for Research on Cancer
IATA	=	International Air Transport Association
IMDG	=	International Maritime Dangerous Goods
LC_{50}	=	Concentration in Air Resulting in Death To 50% of Experimental Animals
LCLo	=	Lowest Concentration in Air Resulting in Death
LD_{50}	=	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	=	Mine Safety and Health Administration
NAP	=	Not Applicable
NAV	=	Not Available
NIOSH	=	National Institute for Occupational Safety and Health
NFPA	=	National Fire Protection Association
NPRI	=	(Canada) National Pollution Release Inventory
NTP	=	National Toxicology Program
OSHA	=	Occupational Safety and Health Administration
PEL	=	Permissible Exposure Limit
PNOR	=	Particulate Not Otherwise Regulated
PNOS	=	Particulate Not Otherwise Specified
RCRA	=	Resource Conservation and Recovery Act
STEL	=	Short-Term Exposure Limit (15 minutes)
STP	=	Standard Temperature and Pressure
TCLo	=	Lowest Concentration in Air Resulting in a Toxic Effect
TDG	=	(Canada) 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	=	(Canada) Workplace Hazardous Materials Information System

Bark/Wood Waste

Danger

Wood dust may cause nasopharyngeal cancer and/or cancer of the nasal cavities and paranasal sinuses by inhalation. Crystalline silica may cause lung cancer and damage to the respiratory system through prolonged or repeated exposures if inhaled. May cause respiratory, skin and eye irritation.

If product contains or is converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.

Precautions: Avoid breathing dust and wear appropriate protective equipment for respiratory, skin or eye exposures. Prevent dust release and accumulations to minimize hazards. Take off contaminated clothing and wash before reuse. Keep dust away from ignition sources such as heat, sparks, and flame.

First Aid:

If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Contact a qualified medical professional if symptoms persist.

If on skin, wash with soap and water. If skin irritation or rash occurs, get medical advice/attention.

Inhalation, if experiencing respiratory symptoms, remove to fresh air. Contact a qualified medical professional for serious or persistent respiratory symptoms.

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Label for Bark products. See SDS 8/2018 for additional information.