Pulp

SECTION 1. IDENTIFICATION

Product Identifier	Pulp
Other Means of Identification	Bleached Kraft Pulp
Other Identification	Cellulose Pulp
Product Family	Northern Bleached Softwood Kraft - NBSK
Recommended Use	The product is used for various industrial/residential/commmercial purposes such as absorbent hygiene products and paper and specialty materials.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Cariboo Pulp & Paper Company, PO Box 7500, Quesnel, BC, V2J 3J6
Other Contact Information	Hinton Pulp, a division of West Fraser Mills, 760 Switzer Drive, Hinton, AB, T7V 1V7
Emergency Phone No.	West Fraser (Name not available), 1-604-895-2700 (fax: 1-604-681-6061) Cariboo Pulp & Paper Company, West Fraser Mills, (250) 992-0200 Hinton Pulp, a division of West Fraser Mills , (780) 817-7777
SDS No.	001
Date of Preparation	March 18, 2016

SECTION 2. HAZARD IDENTIFICATION

Classification

Eye irritation - Category 2B; Specific target organ toxicity (single exposure) - Category 3; Combustible dust - Category 1

Label Elements

Note the hazards are determined based on pulp dust generated as a result of cutting or disturbing the product.

Signal Word:
Warning
Hazard Statement(s):
H320 Causes eye irritation.
H335 May cause respiratory irritation.
Precautionary Statement(s):
Prevention:
P264 Wash hands and skin thoroughly after handling.
P261 Avoid breathing dust.
P271 Use only outdoors or in a well-ventilated area.
Response:

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
Disposal:
P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

May form combustible dust concentrations in the air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Pulp, cellulose	65996-61-4	>99	Pulp	

Notes

The hazards presented for pulp, cellulose, pertain to dust/particulate generated from cutting/processing activities of pulp made from softwood, allergenic and non-allergenic species (pine, spruce/hemlock and fir typically). Information for pulp, cellulose (CAS# 65996-61-4) is also presented for cellulose (CAS# 9004-34-6) where appropriate due to its similarities, and from the two West Fraser Northern Bleached Softwood Kraft manufacturing mills: Hinton Pulp and Cariboo Pulp & Paper Company.
Concentrations are expressed in % weight/weight.
N.Av. = Not Available

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

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

Skin Contact

Wash gently and thoroughly with lukewarm, gently flowing, water and mild soap for 5 to 10 minutes. If skin irritation or a rash occurs, get medical advice/attention. Clean clothing and shoes if required.

Eye Contact

Rinse the contaminated eye(s) with lukewarm, gently flowing water for 5 to 10 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Ingestion

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

First-aid Comments

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

Most Important Symptoms and Effects, Acute and Delayed

Information pertains to pulp dust. Can irritate the respiratory tract. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Immediate Medical Attention and Special Treatment

Target Organs

Eyes, skin and respiratory system.

Special Instructions

Not available based on the literature reviewed.

Medical Conditions Aggravated by Exposure

Pre-existing skin and respiratory conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing agent suitable for surrounding fire (Class A): Carbon dioxide, dry chemical powder, foam, water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Combustible dust. May form combustible dust concentration in air.
During a fire, very toxic gases such as carbon monoxide and formaldehyde are formed. Heat from a fire may cause a build-up of pressure inside containers (if stored inside containers), which may cause explosive rupture.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases.
Dust explosion hazard. Use water spray or fog to prevent dust formation and minimize risk of explosion.
If entry into area is required wear positive pressure SCBA and full Bunker Gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

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

Environmental Precautions

Although none specifically required for pulp dusts: it is good practice to prevent releases into the environment. If a large quantity of dust is present inside a building, prevent it from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Based on pulp dust: Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Avoid dust generation as dust is combustible. Apply water to dust before cleaning up (if using a shovel/broom). Avoid dry sweeping or using pneumatic powered air hoses to blow away dust. A HEPA vacuum (explosion proof) may be used. Place dust into suitable, covered, labeled containers for disposal.

Other Information

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

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

No special handling procedures are required for the undisturbed product.

The following information is based on pulp dust; avoid generating dusts. Avoid breathing in dust and prevent skin contact. Do not get dust in eyes. Wear personal protective equipment to avoid direct contact with the dust.
General hygiene considerations: do NOT smoke in work areas. Do NOT eat, drink or store food in work areas. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

Conditions for Safe Storage

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH® TLV®		OSHA PEL		NIOSH REL	
Chemical Name	**TWA**	**STEL [C]**	**TWA**	**STEL**	**TWA**	**STEL [C]**
Pulp, cellulose	10 mg/m3		15 mg/m3		10 mg/m3	

Exposure limits are presented for total particulate. The ACGIH TLV has a TWA of 3 mg/m³ for respirable particulate. The OSHA PEL and NIOSH REL has a TWA of 5 mg/m³ for respirable particulate.
Consult local authorities for provincial or state exposure limits. ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. NIOSH = National Institute for Occupational Safety and Health. REL = Recommended Exposure Limit.

Appropriate Engineering Controls

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

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

Individual Protection Measures

Eye/Face Protection

Not required if product is used as directed. Wear safety glasses with side shields and face shield if cutting product with power tools and dusty conditions exist.

Skin Protection

Not required if product is used as directed. If cutting product and dusty conditions exist, wear protective clothing (nitrile, leather/cotton gloves and cotton coveralls).

Respiratory Protection

Respirators are not normally required if the product is used with minimal disturbance and minimal dust is generated. The following respirator requirements are recommended for dusty conditions.

If the product is disturbed (e.g., cutting) and potential for exposure to elevated dust concentrations exist, wear a minimum half facepiece respirator with P100 cartridges for protection against dusts. Wear a half facepiece respirator for protection up to 10 times the exposure standard and a tight fitting full facepiece respirator for protection up to 50 times the exposure standard.

Recommendations apply only to NIOSH approved respirators.

Consult an Industrial Hygienist for respirator decisions depending on work environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance White. Particle Size: Arithmetic fibre length (AFL): 1.31 mm

Odour	Odourless
Odour Threshold	Not applicable
pH	5.6 - 6.9
Melting Point/Freezing Point	260 - 270 ºC (500 - 518 ºF) (melting); Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Flammable solid.
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	1.27 - 1.61
Solubility	Insoluble in water; Insoluble in common organic solvents.
Partition Coefficient, n-Octanol/Water (Log Kow)	Not applicable
Auto-ignition Temperature	Not applicable
Decomposition Temperature	> 180 ºC (356 ºF)
Viscosity	Not available (kinematic); 23.8 centipoises (dynamic)

Other Information

Physical State	Solid
Molecular Formula	$(C_6H_{10}O_5)n$
Molecular Weight	Greater than 30,000
Surface Tension	Not available
Critical Temperature	Not applicable
Electrical Conductivity	Not available
Other Physical Property 1	A Lower Explosive Limit is noted as 30,000 mg/m³ for cellulose. An Upper Explosive Limit is not available.
Other Physical Property 2	Decomposes quickly above 180°C
Other Physical Property 3	Moisture typically ranges from approximately 5%-9%.

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Wet cellulose is susceptible to microbial attack.

Chemical Stability

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

Possibility of Hazardous Reactions

Oxidized very slowly by air at room temperature. The rate of oxidation is faster for the coarse, fluffy solid than for the dense, free flowing solid. Microbial attack may cause wet cellulose to self-heat and consequently undergo spontaneous combustion. Decomposes quickly above 180°C.

Conditions to Avoid

Generation of dust. Open flames, sparks, static discharge, heat and other ignition sources. May form explosive dust-air mixtures. Temperatures to avoid: above 180ºC (356ºF).

Incompatible Materials

Incompatible with bromine pentafluoride, sodium nitrate, fluorine, strong oxidizers.
Corrosivity to metals: No information is available. Not anticipated to be corrosive to metals.

Hazardous Decomposition Products

Microbial degradation may release flammable methane gas and toxic carbon dioxide gas. Peroxides, aldehydes, ketones, acids and other compounds form upon air oxidation. Thermal decomposition or decomposition of peroxides form compounds such as glucose monomers, levoglucosan, polycyclic ethers, arabonic acid, furfural, furaldehyde, furan, oxalic acid, acetaldehyde, formic acid, formaldehyde, carbon monoxide, or carbon dioxide. During a fire, toxic gases such as carbon monoxide and formaldehyde are formed. Heat from a fire may cause a build-up of pressure inside containers (if stored inside containers), which may cause explosive rupture.

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicity of wood products (pulp) pertains to the dust created or generated by the processing or disturbance (cutting) of the raw product.

Likely Routes of Exposure

Inhalation; skin contact; eye contact.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Pulp, cellulose	> 5,800 mg/m3 (rat) (4-hour exposure)	> 2,000 mg/kg (rat)	> 2,000,000 mg/kg (rabbit)

Other literature LD50 (oral): > 5,000 mg/kg (rat)

Skin Corrosion/Irritation

Handling and / or processing this material may generate a dust which can cause irritation of the skin.

Serious Eye Damage/Irritation

Handling and / or processing this material may generate a dust which can cause irritation of the eyes.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Handling and / or processing this material may generate a dust which can cause irritation of the respiratory tract.

Skin Absorption

No information is available based on the literature reviewed.

Ingestion

No information is available based on the literature reviewed.

Aspiration Hazard

Not applicable.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information is available based on the literature reviewed.

Respiratory and/or Skin Sensitization

No information is available based on the literature reviewed.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Pulp, cellulose	Not Listed	Not designated	Not Listed	Not Listed

A study of rats (subcutaneous implant) was negative for carcinogenicity and not significant for tumour inhibition.

Key to Abbreviations

IARC = International Agency for Research on Cancer. ACGIH® = American Conference of Governmental Industrial Hygienists. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

Reproductive Toxicity

Development of Offspring

No known effects or hazards. Not listed on California Proposition 65 or US Toxic Release Inventory (TRI) as a developmental toxin.

Sexual Function and Fertility

No known effects or hazards. Not listed on California Proposition 65 or US TRI as a reproductive toxin.

Effects on or via Lactation

No information is available based on the literature reviewed.

Germ Cell Mutagenicity

No information is available based on the literature reviewed.

Interactive Effects

No information is available based on the literature reviewed.

SECTION 12. ECOLOGICAL INFORMATION

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

Ecotoxicity

No information is available based on the literature reviewed.

Persistence and Degradability

No information is available based on the literature reviewed.

Bioaccumulative Potential

No information is available based on the literature reviewed.

Mobility in Soil

No information is available based on the literature reviewed.

Other Adverse Effects

No information is available based on the literature reviewed.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

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

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations. Not regulated under IATA Regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
IMO (Marine)	Not regulated			

Environmental Hazards Not applicable

Special Precautions Please note: No information is available based on the literature reviewed.

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

Not applicable

Emergency Response Guide No. No information is available for the pure product.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Wood products (pulp) are exempt from WHMIS reporting requirements. Classification and disclosure is voluntary on MSDS. GHS reporting requirements are based on the intended use of the product.

Canada

WHMIS 1988 Classification

Class D2B

D2B - Toxic (Skin irritant; Eye irritant)

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

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

Listed

CEPA - National Pollutant Release Inventory (NPRI)

Not Listed

USA

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

Listed

Additional USA Regulatory Lists

TSCA: All ingredients of this product are either listed on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

CERCLA: This product does not contain ingredients which are subject to the reporting requirements of CERCLA.

OSHA: Pulp dust is a regulated hazard under the OSHA Hazard Communication Standard [29 CFR 1910.1200] as a nuisance dust. PEL: respirable = 5 mg/m^3; total dust: 15 mg/m^3

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

SARA 311/312:
This product does not meet the following categories:
An immediate (acute) health hazard: No
A delayed (chronic) health hazard: No
A corrosive hazard: No
A fire hazard: No
A reactivity hazard: No
A sudden release hazard: No

US State Notifications & Warnings:

CA Prop. 65: Not listed.

Custom Regulatory 1

European Union Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
C&L Inventory (pulp, cellulose): Not Classified

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 2** **Flammability - 2** **Instability - 0**
	Based on Pulp, cellulose
SDS Prepared By	Wood Environment & Infrastructure Solutions
Phone No.	604-294-3811
Date of Preparation	March 18, 2016
Date of Last Revision	June 12, 2020
Revision Indicators	Dermal toxicity and references for ingredients updated.
Key to Abbreviations	% - Percent °C − Degrees Celsius °F − Degrees Farenhuit hr − Hour kg - Kilogram L - Litre Ppm - parts per million LC50 − Airborne concentration required to produce 50% mortality in animal test subjects. LD50 − Dose (provided either orally, or dermally) required to produce 50% mortality in animal test subjects. mg/m3 − milligrams of contaminant per cubic metre of air mmHg − Millimetres of mercury N.Ap. − Not applicable N.Av. Not available ACGIH − American Conference of Governmental Industrial Hygienists CALIFORNIA EPA PROPOSITION 65 − List of Carcinogens and Reproductive Toxins recognized in California Environmental Protection Agency CAS No. − Chemical Abstract Society Number CERCLA − US Comprehensive Environmental Response, Compensation, and Liability Act PEL − Permissible Exposure Level RCRA − US Resource and Conservation Recovery Act REL − Recommended Exposure Limit SARA TITLE III − US Superfund Amendments and Reauthorization Act TLV − Threshold Limit Value TSCA − US Toxic Substances Control Act TWA − Time Weighted Average UN/NA − United Nations / North American Product Identification Number WHMIS − Workplace Hazardous Materials Information System AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances GHS - Global Harmonized System
References	Alberta Occupational Health and Safety Act, Occupational Health and Safety Code, Schedule 1 Chemical Substances. 2009. Viewed 2020. Available at: https://www.qp.alberta.ca/documents/OHS/OHSCode.pdf Agency for Toxic Substances and Disease Registry (ATSDR). Viewed 2020. Available at: http://www.atsdr.cdc.gov/toxprofiles/index.asp American Conference of Governmental Industrial Hygienists. 2020. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Canadian Centre for Occupational Health and Safety (CCOHS) - Multiple databases: Chempendium / Cheminfo / Cesars / HSDB / RTECS / TDG / DSl-NDSL / NIOSH Pocket Guide database. Viewed 2020. Available at:

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Disclaimer

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

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