



Pearl 428 and Awayuki 428 Kraft Pulp (cellulose and specialty additive)

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1. Product Identification

Product	Manufacturing Location(s)
Pearl® 428 and Awayuki™ 428 Kraft Pulp (cellulose)	USA: Port Wentworth, GA CANADA: None

Synonyms: Awayuki™, Bleached Pulp, Cellulose, Pearl®.

2. Hazardous Ingredients/Identity Information

Name	CAS#	Percent	Agency	Exposure Limits	Comments
Pulp (cellulose)	65996-61-4	> 99%	OSHA OSHA ACGIH	PEL-TWA 15 mg/m ³ PEL-TWA 5 mg/m ³ TLV-TWA 10 mg/m ³	Total dust Respirable dust Total dust
Specialty Additive*		< 0.5%			

* Trade Secret

3. Hazard Identification

Primary Safety/Health Hazards: Warning: Processed (e.g. fiberized) cellulose may pose a combustible dust explosion hazard if cellulose dust is suspended in air in sufficient concentrations in proximity to an ignition source. Bulk pulp as supplied and shipped in rolled or baled/sheet form does not constitute a combustible dust explosion hazard. Users of this product should examine the potential to generate cellulose dust during handling and processing and related combustibility hazards and controls. See additional comments in the MSDS. The primary health hazard posed by this product is thought to be due to exposure to dust.

Appearance and Odor: The product is an odorless, white rolled or baled pulp sheet.

Primary Route(s) of Exposure:

- Ingestion:
- Skin:
- Inhalation: Dust
- Eye: Dust

Medical Conditions Generally Aggravated by Exposure: Cellulose dust may aggravate pre-existing respiratory conditions or allergies.

Chronic Health Hazards: Cellulose dust has not been shown to produce significant disease or toxic effects when exposure limits are met. Cellulose is poorly soluble and has a low order of toxicity.

3. Hazard Identification (cont'd.)

Carcinogenicity Listing:

- NTP: Not listed
- IARC Monographs: Not listed
- OSHA Regulated: Not listed

4. Emergency and First-Aid Procedures

Ingestion: Not applicable for product in purchased form.

Eye Contact: Dust may mechanically irritate the eyes, resulting in redness or watering. Treat dust in eye as foreign object. Flush with water to remove dust particles. Seek medical help if irritation persists.

Skin Contact: Not applicable for product in purchased form.

Skin Absorption: Not applicable for product in purchased form.

Inhalation: Excessive dust concentrations may cause unpleasant deposit or obstruction in the nasal passages. Remove to fresh air. Seek medical help if persistent irritation, severe coughing or breathing difficulty occurs.

Note to Physician: None

5. Fire and Explosion Data

Flash Point (Method Used): NAP

Flammable Limits: LFL = **NOTE:** See below under "Unusual Fire and Explosion Hazards" UFL = NAP

Extinguishing Media: Water

Autoignition Temperature: 450°F (232°C)

Special Firefighting Procedures: None

Unusual Fire and Explosion Hazards: Pulp processing (e.g. fiberization) may result in the release of cellulose fibers. Bulk pulp as supplied and shipped in rolled or baled/sheet form is highly unlikely to release sufficient cellulose dust to constitute a combustible dust explosion hazard. Depending on airborne concentration, moisture content, particle diameter, surface area and exposure to an ignition source, airborne cellulose dust may ignite and burn with explosive force. Cellulose dust explosibility: (*K_{st} dry = >200 and < 300 bar m/s). Caution should be taken in the processing, shipping, handling and use of these materials, particularly if they are in a dry state and dust is produced. Reference NFPA standards 654, 69 and the NFPA *Fire Protection Handbook* for guidance.

*K_{st} the maximum rate of pressure rise is used to calculate the K_{st} value; an internationally recognized index used to classify dust explosibility.

HMIS Rating (Scale 0-4): Health = 0 Fire = 1 Physical Hazard = 0

NFPA Rating (Scale 0-4): Health = 0 Fire = 1 Reactivity = 0

6. Accidental Release Measures

Steps to be Taken In Case Material Is Released or Spilled: Sweep or vacuum dust for recovery or disposal. Avoid dusty conditions and provide adequate ventilation. Use NIOSH-approved filtering face piece respirator ("dust mask") and goggles where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort. Dried cellulose dust may pose a combustible dust hazard.

Other Precautions: Minimize compressed air blowdown or other practices that generate high dust levels since cellulose dust may pose a combustible dust hazard.

7. Handling and Storage

Precautions to be Taken In Handling and Storage: Minimize dust generation and accumulation. Keep in cool, dry place away from open flame and other sources of ignition. Maintain good housekeeping to avoid accumulation of dried cellulose dust on exposed surfaces. Dried cellulose dust may pose a combustible dust hazard.

8. Exposure Control Measures, Personal Protection

Personal Protective Equipment:

RESPIRATORY PROTECTION – Use NIOSH-approved filtering face piece respirator (“dust mask”) and goggles where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort when fiberization of the pulp occurs. Use respiratory protection in accordance with regulatory requirements such as the OSHA respiratory protection standard 29CFR 1910.134.

PROTECTIVE GLOVES – Not required. However, cloth, canvas, or leather gloves are recommended to minimize potential mechanical irritation from handling product.

EYE PROTECTION – Not applicable for product in purchased form. However, goggles or safety glasses are recommended if the product is used in such a way as to generate high dust levels.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT – Not applicable for product in purchased form. Outer garments may be desirable in extremely dusty areas.

WORK/HYGIENE PRACTICES – Not applicable for product in purchased form.

Ventilation:

LOCAL EXHAUST – 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 combustible pulp dust within the system. See SPECIAL section below.

MECHANICAL (GENERAL) – 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 if the operating conditions justify their use.

OTHER – None

9. Physical/Chemical Properties

Physical Description: The product is an odorless, white rolled or baled pulp sheet.

Boiling Point (@ 760 mm Hg):	NAP
Evaporation Rate (Butyl Acetate = 1):	NAP
Freezing Point:	NAP
Melting Point:	NAP
Molecular Formula:	(C ₆ H ₁₀ O ₅) _n
Molecular Weight:	NAP
Oil-water Distribution Coefficient:	NAP
Odor Threshold:	ND
pH:	NAP
Solubility in Water (% by weight):	<1.0
Specific Gravity (H₂O = 1):	0.6
Vapor Density (air = 1; 1 atm):	NAP
Vapor Pressure (mm Hg):	NAP
Viscosity:	NAP
% Volatile by Volume [@ 70°F (21°C)]:	NAP

10. Stability and Reactivity

Stability: Unstable Stable

Conditions to Avoid: NAP

Incompatibility (Materials to Avoid): Avoid open flame, sparks and other sources of ignition.

Hazardous Decomposition or By-Products: Combustion products include carbon monoxide, carbon dioxide and fine particulate in the form of smoke.

Hazardous Polymerization: May occur Will not occur

Sensitivity to Mechanical Impact: NAP

Sensitivity to Static Discharge: NAP

11. Toxicological Information

Components: NAP

Toxicity Data: Product in purchased form:

Acute toxicity: LD50 (rats, oral) >5000 mg/kg

Human Skin Irritation: Non - irritating. Does not cause sensitization.

Chronic Toxicity: No evidence of mutagenic, reproductive or carcinogenic effects.

Cellulose: LC50 (rats, inhalation) = 5,800 mg/m³/4 hours.

Source: *Registry of Toxic Effects of Chemical Substances (RTECS), National Institute for Occupational Safety and Health.*

Target Organs: Eyes, respiratory system

12. Ecological Information

Environmental Fate: Material naturally biodegrades when exposed to the environment.

Environmental Toxicity: No information available at this time. A biodegradation product promotes soil fertility and plant growth. No toxic components are used in the manufacture of these materials.

13. Disposal Considerations

Waste Disposal Method: Recycling centers are available in nearly every major and most small cities within the US and Canada and Europe that can take waste paper at no charge. Deposit in a landfill or incinerate in accordance with federal, state and other local regulations. Cellulose is not listed under any sections of the Resource Conservation and Recovery Act (RCRA) or Canadian National Pollution Release Inventory (NPRI). Follow all applicable federal, state, provincial and local regulations. It is, however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste.

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) regulations. Not listed as a Hazardous material for IATA and IMDG.

Proper Shipping Name: NAP

Hazard Class: NAP

UN/NA ID Number: NAP

Packing Group: NAP

Information Reported for Product/Size: NAP

15. Regulatory Information

TSCA: Cellulose is on the TSCA inventory.

CERCLA: NAP

DSL: Cellulose is listed under the Canadian Domestic Substance List.

EINECS: Cellulose is listed on the European Inventory of Existing Commercial Chemical Substances or European List of Notified Chemical substances and is exempt from notification.

ENCS: Cellulose (pulp) is not listed or is exempt from the Japanese Existing and New Chemical Substances List as regulated by the Ministry of International Trade and Industry.

OSHA: Regulated by the OSHA Hazard Communication Standard [29 CFR 1910.1200].

STATE RIGHT-TO-KNOW:

California Proposition 65 – This product does not contain substances identified on the Proposition 65 list at levels that pose a significant risk for purposes of Section 25249.10(c) or result in an observable effect for purposes of Section 25249.10(c) of the Act.

New Jersey – This product does not contain any substances listed by the state of New Jersey.

Pennsylvania – This product contains cellulose in a form (non crystalline) that is not listed or regulated by the state of Pennsylvania.

SARA 313 Information: 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 Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under SARA Title III Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

SARA 311/312 Hazard Category, (cont'd.):

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

FDA: Product is not FDA approved for direct or indirect food contact purposes.

WHMIS Classification: Not a controlled product.

16. Additional Information

Date Prepared: 06/11/2008

Date Revised: 11/20/2009

Prepared By: Weyerhaeuser Company Corporate Environment, Health & Safety

Weyerhaeuser MSDS available on: <http://www.weyerhaeuser.com/Sustainability/MSDS>

User's Responsibility: The information contained in this Material 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 MSDS is the most up-to-date issue.

Definition of Common Terms:

ACGIH	= American Conference of Governmental Industrial Hygienists
AICS	= Australian Inventory of Chemical Substances
C	= Ceiling Limit
CAS#	= Chemical Abstracts System Number
DOT	= U. S. Department of Transportation
DSL	= Domestic Substance List
EC50	= Effective concentration that inhibits the endpoint to 50% of control population

16. Additional Information (cont'd.)

EINECS	= European Inventory of Existing Commercial Chemical Substances or European List of Notified Chemical Substances
ENCS	= Japanese Existing and New Chemical Substances List
EPA	= U.S. Environmental Protection Agency
HMIS	= Hazardous Materials Identification System
IARC	= International Agency for Research on Cancer
IATA	= International Air Transport Association
IMDG	= International Maritime Dangerous Goods
KECL	= South Korean Existing Chemicals List
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	= Mine 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	= Species at Risk 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