

HOW WE MAKE KRAFT PULP

ABOUT US

Catalyst is a globally recognized Canadian manufacturing company that competes on a world-wide basis, manufacturing diverse specialty printing paper, newsprint, and pulp for retailing and publishing customers in North America, Asia, Latin America, and Europe. With three mills and a distribution facility in strategic proximity on the Pacific coast, Catalyst has a combined annual production capacity of 1.5 million tonnes.

- » Crofton
- » Powell River
- » Port Alberni

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Kraft pulp is a distinctively high-strength type of pulp and a key building block of many familiar and important products in our daily lives. This includes such things as printing and writing papers; tissues, coffee filters and other consumer products; and specialized applications like fibre cement and Japanese washi paper.

The particular type of kraft pulp that Catalyst makes and sells is referred to as northern bleached softwood kraft or NBSK pulp. It's sought-after for its diversity of applications, and for its strength, runnability, high bulk, porosity and other functional advantages.

The essential elements for making kraft pulp are wood fibre, water, chemicals and heat.

THE KRAFT PULPING PROCESS

We make kraft pulp by mixing wood fibres with a solution of caustic soda and sodium sulphide, and cooking them inside a digester. This separates the fibres from the lignin, which is a natural glue-like substance that binds them together. Our production facilities are designed to recover and reuse much of the water, chemicals and steam used in the process.

PUTTING SAWMILL LEFTOVERS TO USE

The fibre we use to make kraft pulp is mainly made up of leftovers from British Columbia lumber mills. These wood chips and shavings were once considered waste and sent to landfills or burned. We match tree species and other pulp characteristics with customers' end-use requirements, and control blending and bleaching to exacting specifications. The species we use include coastal hemlock, fir and cedar as well as interior whitewoods.

ENVIRONMENTAL ASSURANCE

As with all products from our Canadian mills, our kraft pulp is made from responsibly sourced fibre and in facilities that have achieved sector-leading greenhouse gas reductions. We use a lower-impact elemental chlorine-free bleaching process. And with a PEFC¹ chain-of-custody system, we can provide pulp that is certified as originating from sustainably managed forests for those customers wishing additional assurance.

¹Programme for the Endorsement of Forest Certification

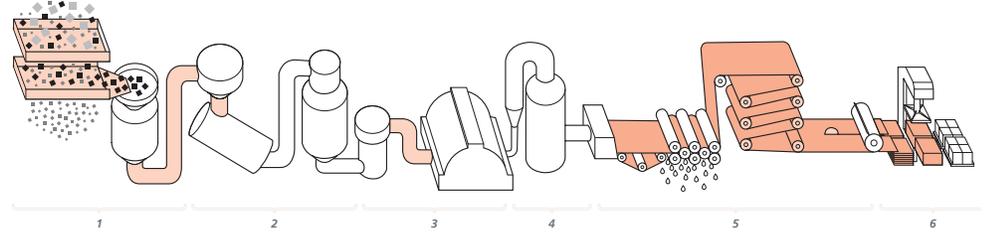
CATALYST CARES ABOUT CERTIFICATION

Catalyst does not harvest forests on either public or private land. Instead, we buy the fibre we use to make paper from a large group of suppliers.

To serve our customers well, we believe we have an obligation to ensure the fibre we buy can be traced back to responsible practices. We strongly support forest management certification as a way to validate claims made about the fibre we use.



THE KRAFT PULP MAKING PROCESS



1. WOOD CHIPS

The main ingredient of kraft pulp is wood fibre in the form of chips. A typical wood chip measures 40 x 25 x 10 mm, and is a leftover from lumber manufacturing. They are stored in a silo after delivery to the pulp mill. To produce pulp, the wood chips must be broken down into their individual cellulose fibres.

2. DIGESTER AND BLOW TANK

A digester is a large tank, between three and six metres in diameter. Inside it, a combination of chemicals, heat and pressure dissolve the lignin and begin the process of converting chips to pulp. From the digester, the fibre goes into a blow tank, where a rapid change in pressure causes the wood to separate into individual fibres.

3. SCREENING AND WASHING

Screens remove any fibre bundles that have failed to separate, and they are reprocessed. The pulp is also washed thoroughly to remove chemicals and dissolved lignin. The pulp, now a brown-coloured combination of individual wood fibres and water, is then stored to await bleaching.

4. BLEACHING

Bleaching is a five-step process of soaking and washing within a vertical tower, using a sequence of hydrogen peroxide, chlorine dioxide, oxygen and caustic soda. This both dissolves any remaining lignin and turns the brown pulp fibres white. We use an elemental chlorine-free bleaching process. Then it's on to another storage tank to await pressing and drying.

5. PRESSING AND DRYING

The pulp is now a slurry which is converted into sheets by being passed through a sheet former, where water is drained through a combination of gravity and suction. The sheets then pass through the press sections – which squeeze out more water – before heading for the dryer. Here, steam-heated air jets reduce water content to less than 10%.

6. PULP BALES

Once out of the dryer, sheets are immediately cooled to keep their colour consistent. They are then cut into smaller sheets and baled. A hydraulic press compacts the bales before they are wrapped for shipment to customers. Bales typically measure 81 x 85 x 38 cm and weigh 250 kg.

Catalyst sells its kraft pulp externally to customers around the world. Each of Catalyst's Canadian mills also produce a type of mechanical pulp, referred to as thermo-mechanical pulp or TMP, for use in making their own paper products (see "How we Make Paper" fact sheet).

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