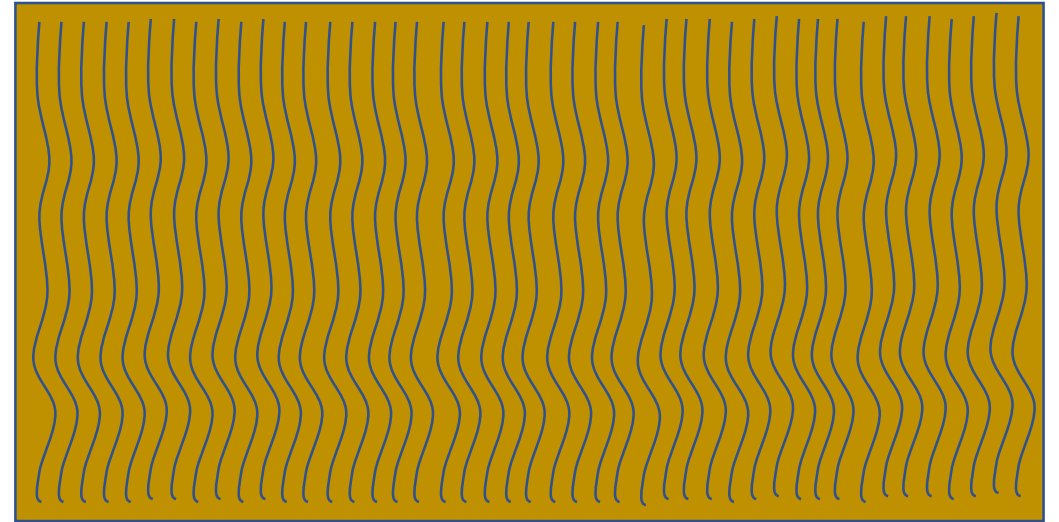
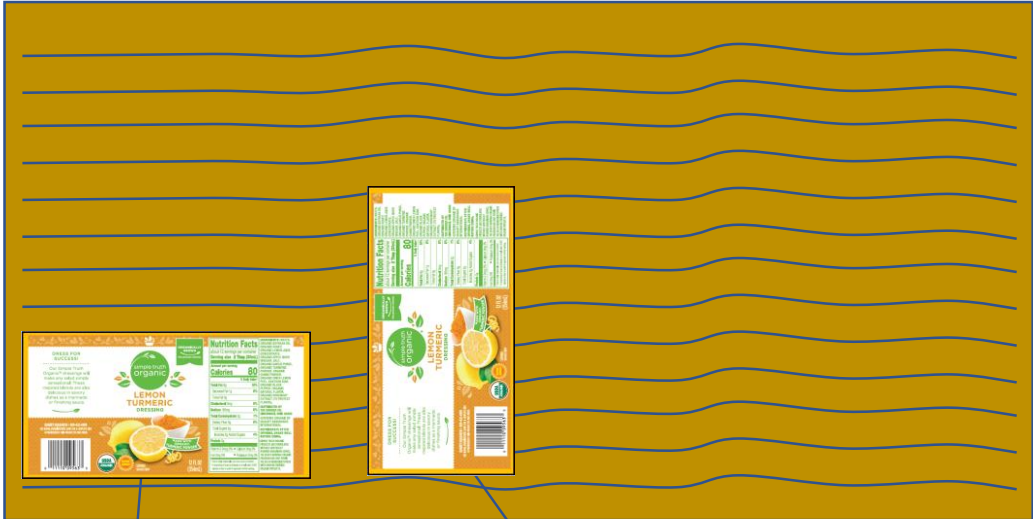


The grain of the paper is in the same direction as the longest dimension, this is called **long grain**.



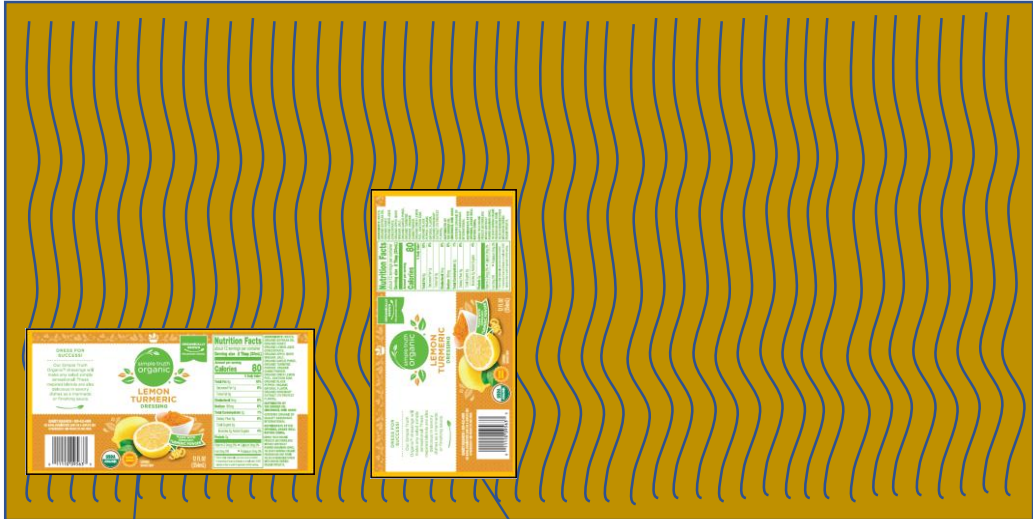
The grain of the paper is in the same direction as the shortest dimension, this is called **short grain**.

It is important to know the grain direction of the paper being printed, because that will affect the grain direction of the final product. Depending on how the labels are printed on the sheet, long grain and short grain sheets of paper can produce long grain and short grain labels.



Long Grain Label

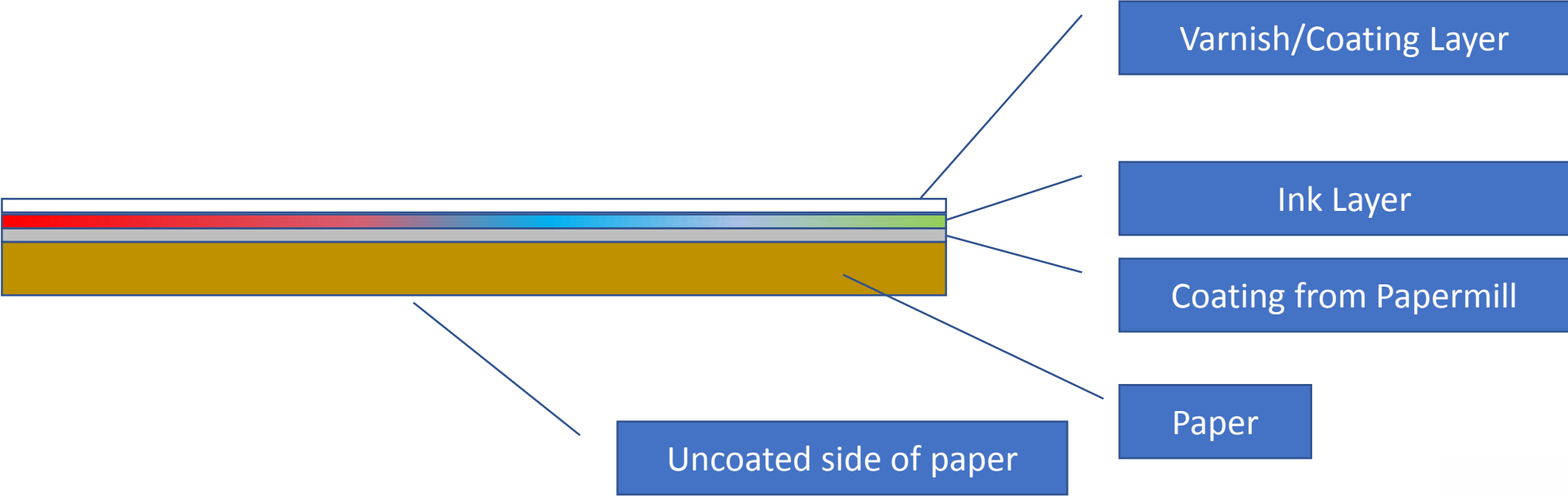
Short Grain Label



Short Grain Label

Long Grain Label

Paper will absorb moisture through the path of least resistance, the uncoated/unprinted side of the label. There are several sources of moisture; air, water in cold glue, residual liquid on the surface of the product being labels, hands holding the labels, etc.



When the surface of the unprinted side of the paper absorbs moisture, the paper fibers will expand in width, opposite of the grain direction. As the paper fibers expand, the surface of the unprinted side grows, but the surface of the printed side does not grow. This is what causes paper curl.

LONG GRAIN LABEL



SHORT GRAIN LABEL



When labeling a round container, with a paper label, and using cold glue, it is generally recommended for the labels to be long grain.

Short grain labels could curl away from the container if the glue does not cure fast enough.

Long grain labels will not be able to curl away from the container once applied.

