



Dow's products and technology are all around—driving improvement in agriculture and water treatment, to better building products for our homes and leading edge electronic technologies. Through "Discover Dow" we hope you will learn more about the way Dow touches and enhances lives throughout the world.



Discover DOW

Why Coat Paper?

The main reason to coat paper and paperboard is to make it printable.

Coatings make the paper surface smoother, brighter and more opaque (so you can't see through it). They also make paper waterproof, grease resistant, and more stable in UV light so it is less likely to turn yellow. Also, coatings on the paper surface possess optimal porosity to help printing ink set. All these factors enhance overall paper quality and printability.

Making Paper Whiter and Brighter with Hollow Sphere Pigments

Did you know that the box of cereal you opened for breakfast started out as a dull gray piece of paperboard?

Same thing goes for the bag of dog food you opened for Rover and the packaging around your cold and flu medicine and many other products on your kitchen and bathroom shelves. So how did these packages get so bright and colorful? It's all in the paper coatings.

You also may be surprised to know that most of the magazines you read are made of paper so thin that you could almost see right through it unless – you guessed it – the paper was coated.

Countless items you use every day are easier to read and more attractive to the eye because of advancements in paper coatings made possible by hollow sphere pigments. The composition of paper coatings is not much different than paint. Coatings consist of three key ingredients: pigments, binders and additives. Pigments add whiteness and brightness. Binders hold the pigments to the paper surface. Additives control the thickness of the liquid coating, keep the pigments evenly dispersed, lubricate the coated paper surface so it does not stick to the coating machinery, enable the coating to spread easily and evenly on the paper surface, and provide other special properties. Dow manufactures all these ingredients.

How Hollow Sphere Pigments Enhance Paper Coatings

Hollow sphere pigments have a hollow or air-filled center. They are made with a process called emulsion polymerization, a core technology of Dow. As the hollow sphere pigments are made, they are tiny particles, just about a micron in size. (A human hair is about 60-120 microns in thickness.) These particles float in water and are filled with water. While they are in this "wet state," they are applied to the paper. When the paper is dried, the water evaporates, leaving nothing but air in the middle of the particle. That acts as a scattering site for visible light, and makes the coating look whiter.

