



NONWOVEN TERMS

For the informed employee

Polyester Fiber

Polyester fiber is one of the most common fibers used in the nonwovens industry. There are several types of polyester, but the most common is PET or polyethylene terephthalate. Polyester can be thermoplastic (it can be remelted) or thermosetting (it cannot be remelted). Most fiber used in nonwovens is thermoplastic. Virgin polyester is derived from petroleum. One use for polyester is to make soft drink bottles. Many of these bottles are collected, ground up, remelted and spun into fiber. Melt spun fibers can have various cross sectional shapes depending on the shape of the hole in the spinneret from which they are extruded.

Some characteristics of polyester are:

- melts at a temperature of 482 to 550 degrees Fahrenheit
- has a specific gravity of 1.38 which means it sinks in water
- is a strong fiber
- has a low moisture regain of about one half of one percent

One type of polyester particularly useful in nonwovens is called low melt. This is a special polyester that melts at a lower temperature (220 to 420 degrees Fahrenheit) than standard polyester. Often low melt polyester will be mixed with standard polyester in concentrations of 10 to 15 percent. Running the nonwoven fabric through a hot air oven, a calender, or under an infrared heater causes the low melt fibers to melt and flow around the regular polyester fibers. In effect this solders the fibers together. This method can be a primary bonding method such as in high loft nonwovens or a secondary method such as when needled nonwovens are heated to impart additional strength.

As of 2008, the world production of polyester fibers was 30.3 million tons and 66% of this was produced in the Peoples Republic of China.



“Imagination is more important than knowledge. For while knowledge defines all we currently know and understand, imagination points to all we might yet discover and create.”

Albert Einstein

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