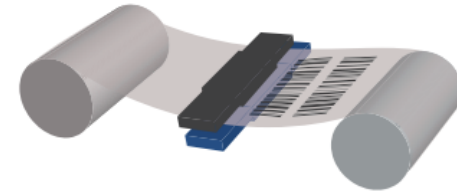


## Direct Thermal vs. Thermal Transfer

### Direct Thermal Media Explained

Direct Thermal media uses a transparent heat-sensitive coating applied to its surface to image text and bar codes. When the heat from the print head contacts the coating, it initiates a chemical reaction that turns the coating black.



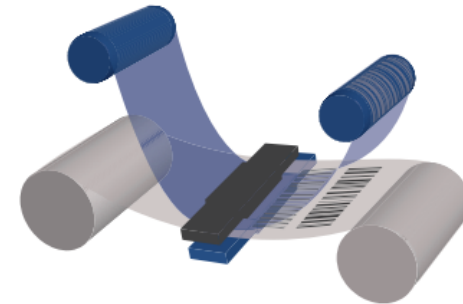
### Thermal Transfer Media Explained

Thermal Transfer media uses a ribbon to image the text and bar codes on a variety of materials, both paper and film. When the ribbon is passed beneath the print head, the heat softens the ribbon ink while in contact with the label or tag, resulting in the transfer of the ink to the surface of the label or tag. There are three general classes of ribbons that are used in thermal printers: Wax, Mid-Range, and Resin.

Wax ribbons are the most commonly used class and are mostly targeted to print paper labels and tags that will be exposed to relatively benign environments. Wax ribbons are also used to print on film labels and tags in some applications.

Mid-Range ribbons are a hybrid design where resin is mixed with the wax to produce ribbons with durability properties that fall somewhere between the wax and resin ribbons. Mid-range ribbons are used to print on both paper and film labels and tags.

Resin ribbons are the most durable and are mostly targeted to printing on film labels and tags that will be exposed to extreme environments.



### Choose the Right Technology for Your Application

Criteria	Direct Thermal Media	Thermal Transfer Media
<b>Life Span</b>	Short-term Less than 1 year	Long-term More than 1 year
<b>Abrasion Resistance</b>	Low	Low (wax) to High (resin)
<b>Chemical Resistance</b>	Limited	High When paired with proper label or tag material
<b>Outdoor Use</b>	Not Recommended	Well-suited when using proper label and tag materials
<b>Heat and Sun Exposure</b>	Not Recommended	Not affected by sunlight – many high-temperate materials are available