
DSM Desotech Backgrounder

DSM: World Leader in Fiber Optic Coatings

DSM Desotech is the world's leading developer of optical fiber coatings—a critical component of today's high-speed fiber networks. More than 40 years ago, DSM designed the first UV-curable coatings that would make mass fiber production possible. Today, DSM remains the industry's innovation leader, providing patented fiber coating systems that deliver the highest levels of mechanical and environmental performance. DSM is the only fiber coatings supplier in the world actively developing next-generation coating systems to address the industry's most advanced network performance requirements.

Helping Networks to Prepare for a Continued Surge in Bandwidth Demand

Downloadable media, video streaming, on-line gaming, new mobile applications and social media communication all fuel the constant demand for bandwidth on any device at any time. The volume of data transmitted over broadband networks is expected to increase more than tenfold between now and 2015, with the volume of transmitted data reaching around 767 exabytes by 2014.

Fiber optic networks are necessary to meet this demand. Fiber-to-the-Premise (FTTP) initiatives continue, with CAPEX spend on FTTP access technology expected to reach nearly \$23 billion by 2013. Deployments continue to be particularly strong in high growth areas such as China and India.

The high level of bandwidth traffic and massive Fiber-to-the-Premise initiatives requires optical fiber to perform at higher levels than ever before. Fiber coatings are critical to this effort, enabling fiber to withstand the rigors of deployment over long distances and in demanding environments, as well as maintain long-term, reliable signal under high bandwidth conditions.

Fiber coatings help ensure that an optical signal can travel more reliably, with less interruption or distortion. In fact, fiber optic coatings are so critical to fiber performance that there would be no high-speed Internet today without them. Today's growing bandwidth demands are being met by next-generation advances in fiber coatings technology from DSM.

Not All Fiber Coatings Are Created Equal

Today's optical fiber networks are expected to last as many as 20-30 years in the field, while handling increasingly greater through-put demand. Because fiber coatings play an important role in protecting fiber from environmental field stresses as well as ensuring signal reliability, fiber coating quality is a key consideration in assessing the long-term reliability of any network. Sub-standard coatings can put fiber networks at risk of systemic failures that can cost large amounts time and money to rectify.

The Right Choice: DeSolite® Supercoatings

DeSolite® Supercoatings from DSM are the newest generation of optical fiber coatings, engineered for greater signal reliability through improved microbend sensitivity, and more robust field performance, especially in temperature extremes. These advance materials are protecting today's network investments with the following performance properties:

- Superior low microbend performance, from -60°C to 85°C
- Low attenuation
- High reliability in temperature extremes, especially low-temperature environments
- Higher fatigue resistance

DeSolite® Supercoatings Mitigate Microbending to Prevent Signal Loss

Among all of the performance risk factors today's fiber optic network operators must address, microbending within optical fiber presents an ongoing challenge.

Microbending occurs when random bends occur in places where the fiber axis has very small deformations and can cause attenuation and ultimately signal transmission losses.

Microbending attenuation losses arise from distortions of the fiber axis that can result from non-uniform external forces, such as a fiber being forced onto cabling materials, fiber-to-fiber contacting points, or fiber being pressed on any rough surface.

The global trend in fiber coating innovation is to improve microbending performance without sacrificing production line speeds and to minimize signal attenuation over wider temperature extremes. DSM is the only Fiber Optic Materials supplier to provide next-generation UV-curable fiber coatings with the best microbending reduction technology for reliable, long-term network performance.

DeSolite[®] Supercoatings from DSM deliver the following benefits for fiber optic cable manufacturers and network owners:

- Maximized utilization of fiber drawing and cabling assets
- Meeting of network owners' increasing bandwidth requirements for mass fiber deployment
- Differentiation through improved power budget performance
- Minimized fiber attenuation, even at high processing speeds and over broader temperature extremes
- Increased manufacturing and installation tolerances via increased abuse tolerance of fiber
- Increased design flexibility, allow for compact cables to be designed with a higher fiber count

DSM Desotech – Worlds Apart

Global presence

DSM Desotech is the leader in coating innovation, with global scale in manufacturing & technology, including R&D locations in the US, Europe and Japan; and Technical Service locations in the US, Europe, Japan and China.

Custom Solutions

With more than 40 years of UV formulation experience, DSM Desotech is the only fiber optic coatings manufacturer able to synthesize custom oligomers, which allows the company to continually tailor the properties of its coatings to customer requirements and to make fiber innovations possible.

State of The Art Testing

DSM Desotech is the only UV fiber coatings manufacturer to operate state of the art in-situ testing equipment and methodologies, including DSM's innovative Draw Tower Simulator (DTS), which replicates actual draw tower processing, with draw speeds up to 2100 m/min. In-situ tests characterize coating properties on fiber, which directly determine coating properties on fiber – a critical element in correlating mechanical properties with actual fiber performance.

Blue Chip Customers

DSM Desotech's customers are among largest optical fiber & cable manufacturers in the world.

Part of the Global DSM family

DSM Desotech is part of DSM Resins, belonging to Royal DSM N.V. Royal DSM N.V. creates solutions that nourish, protect and improve performance. Its end markets include human and animal nutrition and health, personal care, pharmaceuticals, automotive, coatings and paint, electrical and electronics, life protection and housing. DSM manages its business with a focus on the triple bottom line of economic performance, environmental quality and social responsibility, which it pursues simultaneously and in parallel. DSM has annual net sales of about €8 billion and employs some 22,700 people worldwide. The company is headquartered in the Netherlands, with locations on five continents. DSM is listed on Euronext Amsterdam. More information: www.dsm.com.