

Optical Fiber & Cable News



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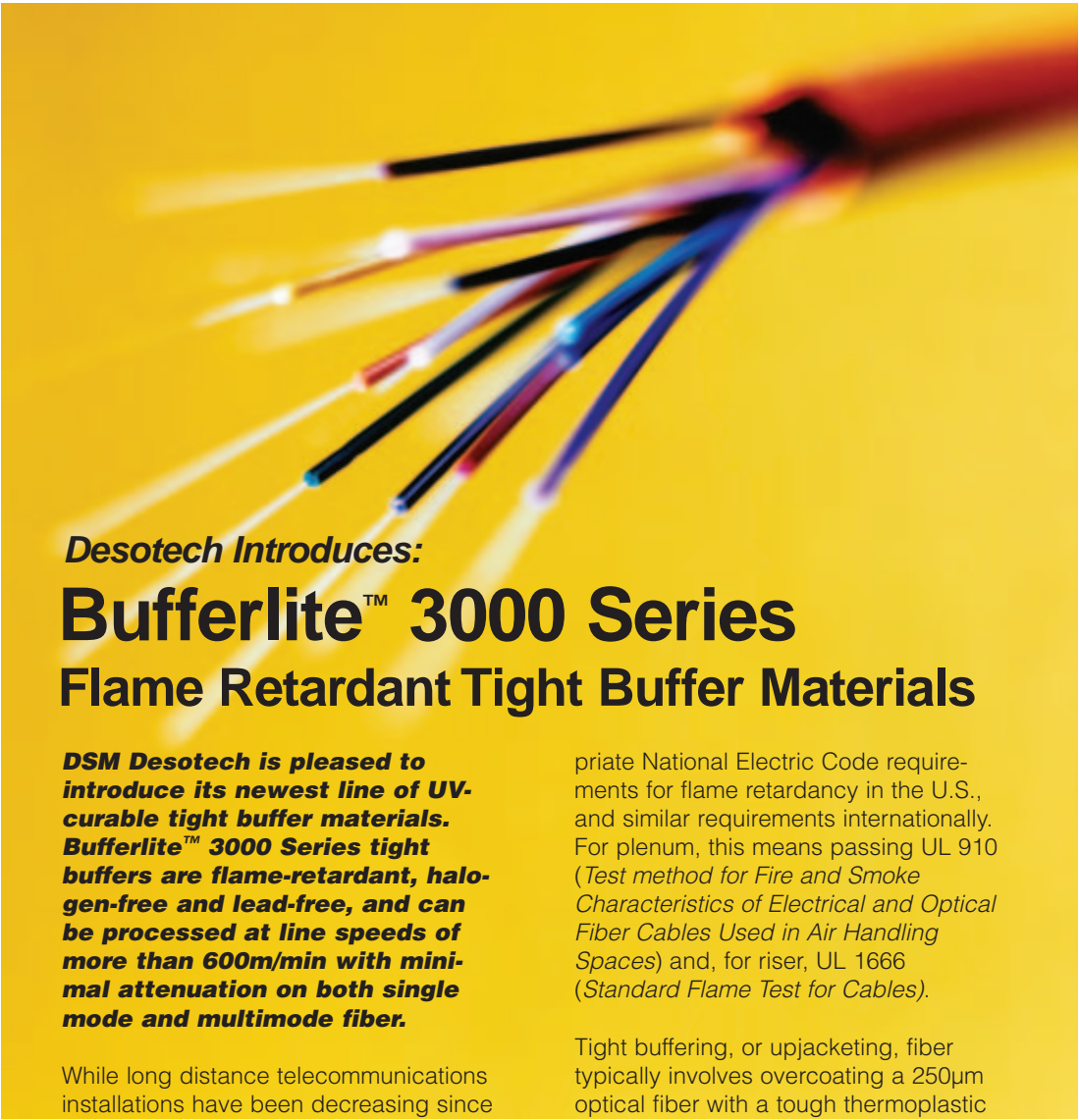
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Desotech Introduces:

Bufferlite™ 3000 Series Flame Retardant Tight Buffer Materials

DSM Desotech is pleased to introduce its newest line of UV-curable tight buffer materials. Bufferlite™ 3000 Series tight buffers are flame-retardant, halogen-free and lead-free, and can be processed at line speeds of more than 600m/min with minimal attenuation on both single mode and multimode fiber.

While long distance telecommunications installations have been decreasing since 2000, demand for Fiber to the Desk continues to grow. Tight buffered fibers, which have been used in premise applications for more than a decade, are key to this market niche.

Premise applications utilize both plenum cables—intended for direct placement in air handling systems—and riser cables, which are placed between floors or in the riser shaft of a building. Regardless of the cable type, all must meet appro-

priate National Electric Code requirements for flame retardancy in the U.S., and similar requirements internationally. For plenum, this means passing UL 910 (*Test method for Fire and Smoke Characteristics of Electrical and Optical Fiber Cables Used in Air Handling Spaces*) and, for riser, UL 1666 (*Standard Flame Test for Cables*).

Tight buffering, or upjacketing, fiber typically involves overcoating a 250µm optical fiber with a tough thermoplastic (TPE). These thicker fibers are designed for improved handling and do not require water-blocking gels, thus making them easier to install. Commonly used TPEs include polyethylene, polyester, nylon and—most popular in the U.S.—polyvinylchloride (PVC).

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Bufferlite™ flame-retardant materials

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While TPEs provide some desirable benefits—such as flame retardancy and low cost—they also have some key performance disadvantages. For example, heating TPEs to high temperatures during application and then quickly cooling can lead to undesired stresses. The solution for this problem has been to reduce line speeds, which in turn results in production inefficiencies.

For PVC, environmental concerns are also growing around both the lead stabilizers used in the material to improve processing, as well as the chloride content of the resin itself.

Lead contained in indoor cabling materials can cause a variety of negative effects at low dose levels over time, including damage to the central nervous system. PVC (a halogenated resin) can also give off toxic fumes when it burns—searing the eyes, nose, mouth and throat. In the event of a fire, these fumes can severely damage the respiratory system or, worse, can disorient victims, preventing them from escaping the blaze.

Recognizing these problems, European governments have already standardized on zero-halogen cabling. And, while it is not yet conclusive that PVC-coated cables have led to public health outbreaks, safety groups are increasing the public's awareness about potential hazards. In the U.S., it is estimated that PVC will be deemed unacceptable for use within the next decade.

- halogen-free
- lead-free
- 12 distinct colors

“Low Smoke Zero Halogen thermoplastics, such as LSZH polyethylene, have been considered good alternatives to PVC because they meet the European government's zero-halogen requirements and are lead-free,” says Desotech Market Development Manager Eva Montgomery. “But they typically process at line speeds of less than 100m/min to minimize fiber attenuation.”

Bufferlite™ 3000 Series Materials

For the past year, DSM Desotech has been working on a UV material solution to the problems facing current thermoplastic buffer materials. The result is Bufferlite™ 3000 Series tight buffer materials.

Combining the best of both worlds, Bufferlite™ 3000 Series materials are specially formulated to provide flame retardancy *without* the use of lead stabilizers or halogens. And, because they are UV-curable, they can be processed at line speeds of more than 600m/min with minimal attenuation on both single mode and multimode fiber.

Bufferlite™ 3000 Series resins are pigmented and come in 12 distinct colors which meet Munsell standards, thus allowing for easy fiber identification.

On-Line Test Results

In cooperation with Nextrom Technologies and CommScope, Bufferlite™ 3000 resins have been tested for processing capabilities and flame retardancy within a distribution cable construction. Results were favorable and will be presented at this year's IWCS conference in Philadelphia.

“Line speeds of more than 600m/min were achieved with minimal attenuation,” says Desotech Applications Engineer Keqi Gan. “Even better, setup times and color changes took only 15 minutes. Unlike thermoplastics which must be heated, Bufferlite™ can be run at room temperature.”

Tests also showed scrap rate from the start and stop process was approximately 3%—significantly less than that of most thermoplastics.

New Opportunities

“We believe Bufferlite™ 3000 series materials will open up some exciting new opportunities for fiber and cable manufacturers,” says Montgomery. Here are just a few:

- Small manufacturers that cannot afford thermoplastic extrusion lines can now cost-effectively upjacket fibers with UV resin.
- Since UV materials cause minimal stress on the fiber during cure, thinner flame retardant tight buffered fibers are now possible. That means more fiber per given space, thus reducing network costs.
- Low equipment conversion costs, easy setup and quick color changes mean more cost-effective customization of tight buffered products.

To learn more about Bufferlite™ tight buffer materials or to request a sample, contact your DSM Desotech sales representative, or call Market Development Manager Eva Montgomery at (01) 847-468-7741.

Desotech Opens Tech Service Lab in Jiangyin, China

DSM Desotech is pleased to announce the opening of a new technical service laboratory in Jiangyin, China. Located approximately a three hour's drive from Shanghai city center, the lab will provide direct service to Desotech customers throughout the Asia/Pacific (A/P) region.

Previously, all technical service requests from Asia were sent to Desotech's Elgin, IL facility for processing. "Even with express mail service, sample deliveries to the U.S. could take up to a week," says A/P Regional Sales Director Myron Bezdicek. "Once delivered, requests then entered into a queue along with those from the Americas region, which could mean a further delay. By processing directly in Jiangyin, we can easily shave 7-10 days off our response time."

China currently represents more than 50% of DSM Desotech's Asia/Pacific business (excluding Japan) and is home to 13 active optical fiber producers—several others are pending—and more than 150 optical fiber cable producers. It is now the fourth tech service location for Desotech, which also operates laboratories in Elgin, Japan and the Netherlands.

"Faster response is the main benefit for our Asian customers."

—Myron Bezdicek, DSM Desotech Regional Sales Director, Asia/Pacific.

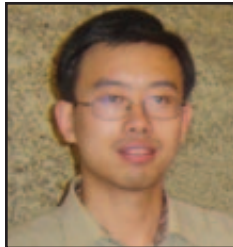
"Faster response is the main benefit for our Asian customers," says Bezdicek. "It also allows us to demonstrate some of our test methods locally. Initial laboratory capabilities will include viscosity measurements, microscopic analysis, and FTIR analysis (to verify degree of cure). This will allow us to handle the majority of the requests we receive each year. Everyone has been quite anxious for it to open."



New Technical Service Associate Appointed in China

DSM Desotech is pleased to announce the recent appointment of **Mr. Wang Xiang** as Technical Service Technician for the recently opened tech service laboratory in Jiangyin, China.

Mr. Wang is a graduate of East China University of Science and Technology and previously worked as a development engineer at a local Shanghai company. He will be instrumental in



our efforts to provide even faster technical service testing responses in Asia.

Desotech Set for IWCS 2003

This year's International Wire and Cable Symposium (IWCS) will be held November 16-20 in Philadelphia, PA. DSM Desotech will once again participate by presenting both a short course and three technical presentations, as well as hosting an evening reception for customers and friends on Wednesday, November 19th.

Short Course:

"Polymer Coatings for Optical Fibers." Presented by Ad Abel (DSM Desotech), Dr. Markus Bulters and Dr. Paul Steeman (DSM Research).

When: Monday, November 17, 1:00-5:00 p.m., Salon I.

Technical Papers:

"UV-Curable Buffer Resins vs. Thermoplastics: A closer look at new flame retardant, UV-curable materials in tight buffered cables." E. Montgomery, K. Dake, and K. Gan, DSM Desotech, Elgin, IL; N. Hatch, CommScope, Claremont, NC

When: Tuesday, November 18, 9:45 a.m., Salon D

"Mechanical Analysis of the In-situ Primary Coating Modulus Test for Optical Fibers." P. A. M. Steeman, J. J. Slot and H. G. H. van Melick, DSM Research, Geleen, the Netherlands; and E. v. d. Ven, Eindhoven University of Technology, Eindhoven, the Netherlands.

When: Wednesday, November 19, 3:15 p.m., Salon D

"Novel Method to Monitor Quartz Tube Darkening Upon Optical Fiber Drawing." T. Katsuta, H. Ohara, T. Shigimoto and Z. Komiya, JSR Corporation, Tsukuba, Japan.

When: Thursday, November 20, 2:35 p.m., Salon D

Reception:

A cocktail and hors d'oeuvres reception will be held for customers and friends of DSM Desotech at the Philadelphia Marriott.

When: Wednesday, November 19, 5:00 to 7:00 p.m., Salon F

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Editor

DSM Desotech Optical Fiber & Cable News is published as an information resource for the optical fiber industry. Reader inquiries and suggestions for content are welcomed and should be directed to the editor at:

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