

Join us at IWCS 2004

This year's International Wire and Cable Symposium (IWCS) will again be held in Philadelphia, PA, from November 14-17. Look for DSM Desotech to present a short course on Sunday, as well as two technical presentations later in the week. On Tuesday, November 16, Desotech will host an evening reception for customers and friends.

Short Course:
"Polymer Coatings for Optical Fibers."
Presented by Anthony Toussaint and Huimin Cao, DSM Desotech, Elgin, IL
When: Sunday, November 14, 8:00 a.m. - 12:00 Noon, Room 406

Technical Papers:
"Prediction of Water Resistance of Optical Fiber Ribbons by Hot Water Soak Analysis." K. Hawkinson, T. Reichert and A. Toussaint, DSM Desotech, Elgin, IL
When: Tuesday, November 16, 4:00 p.m., Salon K

"Rheological Properties of Optical Fiber Coating Resins at High Shear Rates." H. Cao, DSM Desotech Elgin, IL; P. Steeman, W. Zoetelief and M. Bulters, DSM Research, Geleen, the Netherlands.
When: Wednesday, November 17, 10:10 a.m., Salon J

New Product Presentation:
"New UV-Curable Protective Coatings for the Optical Fiber & Cable Market."
When: Tuesday, November 16, 1:30 p.m., Rooms 407-409

Reception:
A cocktail and hors d'oeuvres reception will be held for customers and friends.
When: Tuesday, November 16, 6:00 to 8:00 p.m., Salons C&D

Exhibition:
Learn more about the latest developments in DeSolite®, Cablelite® and Bufferlite™ materials. **Booth 503-505.**

Optical Fiber & Cable News

Kim Axiotis
Editor *Quarter 4, 2004*

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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IN THIS ISSUE

Quarter 4, 2004

Design Flexibility with Bufferlite 3000 Materials
Page 2

IWCS Preview
Page 4

Desotech Named One of America's Safest Companies
Page 4

Optical Fiber & Cable News

Fiber-to-the-Home Gains Some Momentum in the U.S. *But is it enough?*



According to a recent report from the FCC, Fiber to the Home (FTTH) appears to be gaining some long-awaited momentum in the U.S. The report states that broadband usage in America has tripled in the past 2 years and the number of subscribers to advanced services rose to more than 20 million lines as of December 2003, compared to 6 million in June 2001. (They define these services as 2-way speeds of 200 kbps).

With recent changes in U.S. legislation, as well as improvements to the technology, interest and investments are on the rise, with RBOC's committing to some major FTTH initiatives.

The most ambitious program is from Verizon, which plans to add 1,000,000 subscribers in 2004 and 2,000,000+ in 2005. This program looks to be truly fiber to the home, with one fiber going directly to the home itself. Each would carry 622Mb to be distributed to no

more than 32 homes. Several levels of services will be offered, ranging from 5Mb (\$39/month) to 35Mb (\$199/month).

SBC and Bell South have also entered the race, with SBC announcing a \$5 billion investment in FTTH over the next four years. Though both of these programs will be more fiber-to-the-premise than to the actual home (SBC will take fiber to within 500 feet of the premise), there is no doubt that momentum is building.

Many would say it's about time. Currently, the U.S. ranks 11th in the world in percentage of broadband capability—far behind Asia, in particular. In Korea, 80% of ordinary households currently get faster internet service than most U.S. businesses.

(continued on page 3)

DSM Desotech Named One of America's Safest Companies

Have you heard that DSM Desotech has been named one of America's Safest Companies?

Occupational Hazards magazine, the nation's leading magazine of safety, health and loss prevention, has rated DSM Desotech Inc. (Elgin, Stanley and New Castle sites) among the 2004 safety leaders, including L'Oreal USA, Anheuser-Busch, Rohm & Hass and Texas Instruments.

DSM Desotech couldn't be happier. "Safety is always our top priority at Desotech, and throughout all DSM companies worldwide," says President Steve Hartig. "This award is a great validation of all our efforts."

In addition to being named one of America's safest companies, DSM

Desotech's outstanding safety record has earned seven consecutive nominations for the global DSM Safety Award, presented annually to one of more than 200 DSM companies worldwide. Desotech's Elgin site won the award in 1999 and the Stanley site was named runner up in 2003.

Occupational Hazards magazine selects the list of America's Safest Companies based on: recommendations by industry professionals, recognition by industry associations, participation in programs such as OSHA's Voluntary Protection Program, state and local awards, and *Occupational Hazards'* research into the occupational health and safety philosophy and programs of the company. All 17 companies named have been profiled in the magazine's October issue.



Design Flexibility with Bufferlite™ 3000

500-900 micron tight buffered fibers easily produced

In November of 2003, DSM Desotech introduced Bufferlite™ 3000 series UV-curable tight buffer resins to the market. Since then, these pigmented, flame retardant materials have been proving a valuable alternative to traditional thermoplastic buffers with their high processing speeds, low scrap rates and eco-friendly design (Bufferlite 3000 resins are lead-free, halogen-free and solvent-free materials).

But perhaps the most appreciated feature of Bufferlite 3000 for cable design engineers is the flexibility they offer in producing tight buffered fiber in a range of diameters (from 500µm to 900µm).

"Traditional thermoplastics have been used to produce 900µm tight buffered fibers for years," says Bufferlite

Market Development Manager Eva Montgomery. "However, upjacketing to 500µm fiber with these same materials proves much more difficult."

"In addition to difficulty in maintaining diameter control, upjacketing to 500µm with thermoplastic materials requires reducing already slow processing speeds even further (some report as low as 50m/min) to minimize attenuation."

By contrast, because of their UV-curable design, Bufferlite™ 3000 materials can be easily applied onto optical fiber in a wide range of thicknesses, with minimal effect on attenuation. Line speeds as high as 900m/min are easily achieved with only minor modification of standard fiber inking equipment.

"There's no question that Bufferlite materials are able to offer significant advantages to cablers in terms of design flexibility," says Eva. "We simply have to be diligent in getting the word out that there's now a better solution available."

For more information about Bufferlite 3000 series flame retardant buffers, or to request a fiber sample coated with Bufferlite, contact your DSM Desotech representative today. Or, visit us at IWCS 2004, booth #503-505.

Unlike thermoplastic buffers, Bufferlite™ 3000 materials can be easily applied onto optical fiber in a wide range of thicknesses, with minimal effect on attenuation. Line speeds as high as 900m/min are easily achieved with only minor modification of standard fiber inking equipment.

For 500µm fiber:

The amount of Bufferlite resin needed to upjacket fiber to 500µm is estimated to be 0.2kg/km—therefore, 1kg of coating can upjacket 5km of fiber. For fiber of this size, it is entirely possible to utilize an existing ink line with the only upgrade being larger dies.

In testing, a 1kg bottle of resin was able to be placed directly into the pressure pot normally designed for ink. The concentricity of 500µm fiber is managed through effective alignment of the spools, capstans and wheels.

For 900µm fiber:

Approximately 0.8kg/km of Bufferlite resin is needed to upjacket fiber to 900µm. For fiber of this size, it is necessary to upgrade the equipment to accommodate a larger pressure pot and delivery tubes. In testing, a standard 5-gallon (20kg) pressure pot designed for the paint industry was used. The 5-gallon pail is able to upjacket 25km of fiber and can be placed directly into the vessel.

Concentricity is again controlled through the alignment of spools, capstans and wheels—however, additional enhancements may be needed, such as the use of a middle die (see figures 1a and 1b).

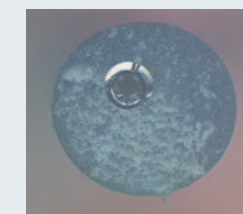


Figure 1a. 900µm fiber, concentricity without the use of a middle die

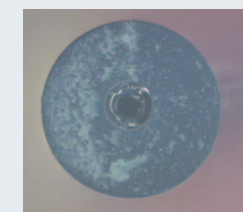


Figure 1b. 900µm fiber, concentricity with the use of a middle die

Fiber to the Home

(cont'd from page 1)

And in Japan, where access speed is more than 100 times faster than in the U.S., broadband subscribers for FTTH are growing at 90,000 per month.

That's more than the total number of U.S. subscribers for all of 2002 and 2003 combined.

Reasons for the lag are varied. For one, the U.S. has adopted CATV to a much greater extent than other countries. This has brought video into the home and delayed the need for video broadband. The U.S. consumer is also looking for the triple play—video, data and voice. Most other countries have settled for one or two choices. In Japan, they have elected to put in speed and capacity (100 Mbps) and let the applications follow, resulting in a much lower cost model. 100 Mbps service in Japan currently costs the equivalent of \$41 U.S. per month. That same level of service in the U.S. is targeted for \$100-\$200 per month.

Most agree that a national policy on FTTH, similar to those in Japan and Korea, would help the U.S. move forward. Perhaps the quickest way to correct the problem would be to take Japan's approach, installing capacity now and waiting for new applications to develop. But there are still other hurdles to overcome. For example, legislative issues surrounding U.S. telecom service have made RBOC's reluctant to replace existing copper lines with fiber because they are required to provide access to their competitors.

All in all, the initiatives taken by Verizon are helpful and needed but, unless further steps are taken, the U.S. is in danger of ending up with a system that is easily out of capacity once new applications develop. It's been estimated that a minimum of 40 Mbps will be required for potential applications such as streaming video and medical technology interaction. That's more than double Verizon's ambitious plans.