

Display Technologies

# Possibilities Made Real



## Corning's environmentally friendly LCD glass makes green solutions possible for Sharp and the LCD industry.



### The Challenge

In the mid-1990s, with the market for liquid crystal displays (LCD) heating up around the world, the global leader, Sharp Corporation, built a new LCD manufacturing plant in Mie Prefecture, Japan. As uses for LCDs expanded and consumers began to demand larger screens, Sharp sought to increase the size of the glass substrates used at the factory in order to respond to demand and further improve competitiveness factors such as cost. At the same time, the company also enthusiastically pursued the development of environmentally friendly LCDs.

### The Breakthrough

The technical challenges of making large-size, fusion-formed LCD glass without arsenic—a key ingredient for removing bubbles from LCD glass—were so daunting that no one had ever before taken them on. But Corning researchers put their depth of knowledge to work and created a green version of its industry-standard glass composition, Corning 1737.

The original requirement by Sharp for an environmentally friendly substrate inspired Corning to innovate beyond the elimination of arsenic. At the same time, Corning met the challenge to produce glass in increasingly large sizes. Nearly a decade later, Corning introduced another industry first with EAGLE XG® glass.

This remarkable new glass contained no added heavy metals or halides, meeting the environmental performance and larger size requirements of Sharp, and it was capable of supporting the highest level of LCD performance, all of which end-users had come to expect from Sharp. EAGLE XG has won two major industry awards since its introduction in 2006.

### The Impact

Sharp's dramatic advance continued against the background of its sophisticated technological power. Corning's progress in scaling up the arsenic-free Corning 1737 glass, and later EAGLE XG, contributed to this advance.

Sharp was the sole company in the industry to set the target of switching all of its domestically marketed televisions to LCD TVs. In deciding to make the LCD business the company's core competence, Sharp intensified its R&D activities and further enhanced its manufacturing system with many "firsts." For instance, Sharp was the first to use both Generation 6 and Generation 8 technology for the manufacture of large-size LCD TV screens. By 2010, Sharp will be the first to use Generation 10 substrates—scheduled to be made with Corning EAGLE XG glass, manufactured by Corning and collocated on the premises of Sharp's newest facility in Sakai City.

The environmental and performance-based relationship between Sharp and Corning has reset the agenda for the entire LCD industry. And in that very competitive industry, Sharp's LCD products are widely recognized as among the finest in the world.

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