

TECH OFFER

Advanced Chemical Solution For Dimple Suppression In Glass Thinning



KEY INFORMATION

TECHNOLOGY CATEGORY:

Manufacturing - Chemical Processes

Manufacturing - Surface Finishing & Modification

Chemicals - Organic

TECHNOLOGY READINESS LEVEL (TRL): **TRL5**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO175087**

OVERVIEW

The demand for thinner, lighter, and more durable glass in consumer electronics and other high-tech applications is constantly increasing. Thinner and lighter glass not only enables the design of sleeker devices but also enhances the tactile responsiveness of touchscreens, contributing to the overall performance and durability of the product. However, conventional glass thinning solutions face challenges, particularly in dealing with surface imperfections, which can impact the quality and efficiency of glass manufacturing. During the thinning process, surface imperfections like scratches and dimples become more pronounced, significantly affecting the optical clarity and overall quality of the glass, leading to increased product rejection rates and manufacturing costs.

To address such challenges, the technology owner has developed a proprietary chemical solution specifically for glass slimming or thinning, aiming at effective dimple suppression while maintaining the desired thickness. This advanced solution enables the uniform melting or removal of material from the glass surface, preventing the spread of small scratches and the formation of

dimples on the glass surface. This chemical solution ensures the production of super-thin and high-quality glass that aligns with the dynamic demands of the evolving industry. Its application proves beneficial in industries where the precision and quality of glass are paramount.

The technology owner is seeking R&D collaboration with industrial partners interested in adopting this chemical solution in the processing or manufacturing of glass related components.

TECHNOLOGY FEATURES & SPECIFICATIONS

This solution enables the uniform melting or removal of material from the glass surface, effectively mitigating the spread of small scratches and preventing dimple formation. Key features of this technology include:

- **Enhanced glass performance:** dimple suppression contributes to the uniformity of glass, ensuring optical clarity, tactile responsiveness and aesthetic appearance
- **Improved product durability:** the presence of dimples leads to stress concentration. Suppressing dimples helps maintain the strength and durability of glass product
- **Cost-effectiveness:** this chemical solution can be seamlessly integrated into existing glass processing or manufacturing lines, making it viable for mass production

POTENTIAL APPLICATIONS

This chemical solution can be applied to processing / manufacturing of various thinner and lighter glass components. Potential applications include (but are not limited to):

- **Advanced display:** liquid crystal display (LCD) in various electronic devices like TVs, monitors, smartphones, etc.
- **Optics and photonics:** high performance lenses and optical components for cameras and microscope
- **Medical devices:** lab-on-a-chip devices, microfluidic devices, biosensors, diagnostic chips, etc.
- **Flexible electronics:** rollable / foldable displays, flexible solar cells, and wearable devices, etc.

UNIQUE VALUE PROPOSITION

- Improve the overall quality of glass
- Reduce rejection rates and manufacturing costs
- Customisable to meet different requirements
- Adaptable to existing glass processing facilities