

Hyundai Mobis say they have new materials to fundamentally resolve the offgas-fog issue that has been a challenge to global lamp makers—and that they've applied their new technology to all their lamp products in production.



The problem is that plastic materials outgas at the high temperatures encountered inside lamps, and this offgas adheres to the optics and cover lens, causing fog and discolouration. This degrades the appearance of the lamp and its performance as well. All global makers are trying to resolve this issue, but they have mostly been avoiding the problem by changing the internal structure of a lamp rather than finding a fundamental solution due to the challenging requirements for developing materials.

Mobis partnered with Initz, a joint venture between SK Chemicals and Tejin, which successfully developed—in just 18 months—a new material that does not emit any gases. Moreover, the new material is made locally and replaces a previous material that had been entirely imported. Joint patent applications are being prepared worldwide.

To satisfy requirements including resistance to humidity, Hyundai Mobis added glass fibre to the existing plastic material to assure sufficient rigidity, and also added high molecular weight additives. The result: a new material that satisfies the requirements without generating gases.

The new materials also can reduce the weight of a headlamp by as much as 20%. It could reduce the thickness of each part of a headlamp, such as a lens, bezel, reflector and housing, by using materials with good fluidity. With the development of lightweight materials, the supplier could achieve cost reduction and improved lamp functionality. Cost is reduced as thinner parts require less quantity of materials, and the lamp is more resistant to humidity as the plastic materials absorb less moisture.