CASE STUDY

LITEON® Becomes First UL Customer to Achieve Validation to UL ECVP 2809 Recycled Content for Ocean Plastics

Introduction

Lite-On Technology Corporation, a Taiwan-based provider of optoelectronic components and key electronic modules, knew the world had been facing a big challenge when they launched their SEA HOPE project to reduce ocean waste in 2018. The project aimed to recycle ocean plastics, so the virtually nonrecyclable waste found in the oceans may return to use by transitioning to a circular economy.

To reduce the ecological impact of LITEON's supply chain with a circular economy strategy, they started by reusing ocean plastics in their production chain to build new keyboards and mice. LITEON® knew that both the recycled content and molded parts from the polymeric material required UL's Recycled Content Validation for Ocean Plastics and Recycled Material Performance Certification before going to market. In August 2020, LITEON relied on UL, a global safety science leader, to help make global market access easier.

"UL has been our partner for more than 35 years. The company is one of the world's leading testing, certification and conformity assessment organizations," said Anson Chiu, general manager of LITEON.

Overcoming challenges when reforming ocean plastic waste

Products composed of polystyrene (PS) foam are used extensively in the fishing industry. However, when natural disasters occur or such items are inappropriately disposed, foam materials can turn into ocean waste. Ocean foam waste is quite difficult to handle, as this type of waste is contaminated with shells, seaweed and sand that can make repurposing the material challenging.

O-Waste
LITEON

UL has been our partner for more than 35 years. The company is one of the world's leading testing, certification and conformity assessment organizations.

- Anson Chiu, General Manager, LITEON

LITEON'S PRODUCT LGS-7505
has been
VALIDATED FOR
80%
recycled content.

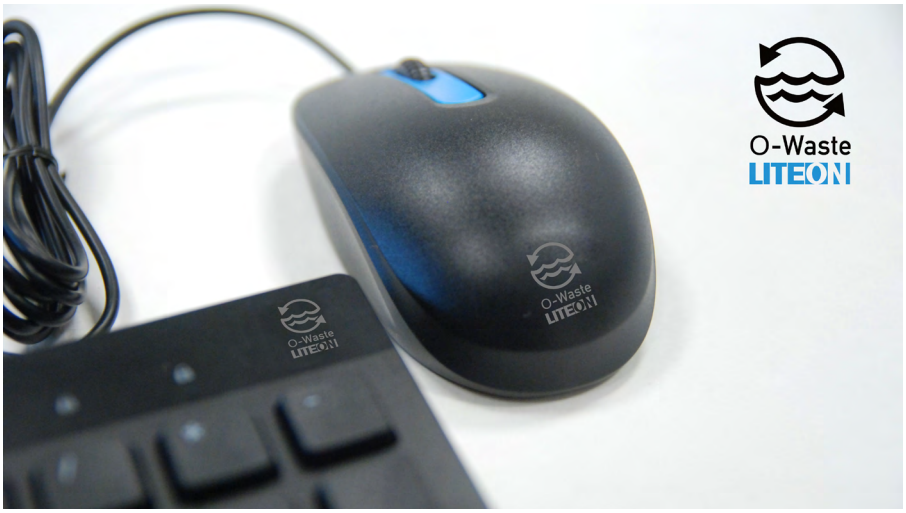
To combat this, one of LITEON's partners created a nontoxic solvent to help detach impurities from the waste and dissolve the foam into PS secondary plastic. The extracted PS can then be transformed into high-impact PS, which can be used as recycled plastic materials.

LITEON and UL worked together to develop a certification plan for LITEON's new production chain and their access to global markets with a new focus on sustainability. "The first step was to meet the requirements of the UL Environmental Claim Validation Procedure (ECVP) 2809 for recycled content; UL 746D, the Standard for Polymeric Materials – Fabricated Parts for recycled plastic; UL 94, the Standard for Flammability of Plastic Materials for Parts in Devices and Appliances; and UL 746A and UL 746B, other UL Standards for Polymeric Materials, respectively for Short Term Property Evaluations and Long Term Property Evaluations," Chiu said.

To assess LITEON's recycled content to UL ECVP 2809, UL's experts evaluated the amount of recycled content in their products. LITEON's product LGS-7505 has been validated for 80% recycled content, consisting of 75% post-consumer recycled acrylonitrile butadiene styrene (ABS) and 5% PS ocean plastic.

"LITEON was our first customer ever to achieve UL ECVP 2809 for Ocean Plastics. They also achieved UL Yellow Card™ Recognition for Recycled Ocean Plastics," said Fred Shek, senior director and regional general manager of Engineered Materials at UL. "Our evaluation helps to validate their ocean plastic recycled content and provide third-party validation for LITEON, acknowledging that they are as sustainable as they say."

In July 2021, LITEON was also certified through UL's Component Recognition program for recycled plastics per UL 746D through multiple rigorous testing batches. This certification helps demonstrate that LITEON's recycled plastic materials have the same level of acceptability as a virgin compound.

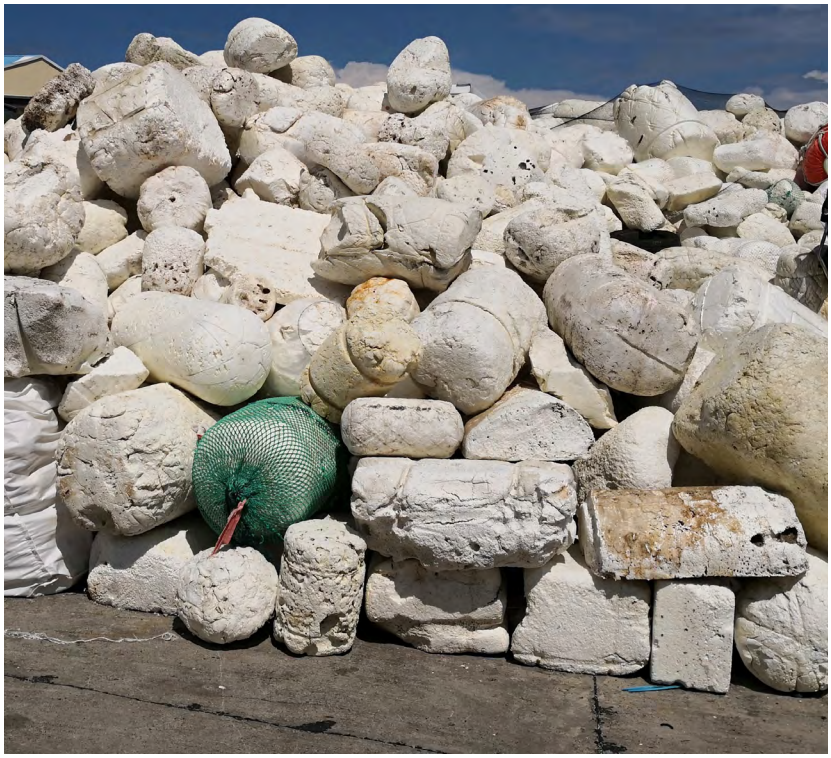


SEA HOPE: LITEON's eco-friendly project

Based on the United Nations (UN) Sustainable Development Goals (SDGs) SDG 12, Responsible Consumption and Production, and SDG 14, Life Below Water, LITEON created the SEA HOPE project in 2018 to procure ocean foam waste for their manufacturing process.

The project consists of working closely with the local Taiwanese government, social enterprises and research institutions, assembling a group of employee volunteers for monthly coastal cleanups, reforming ocean plastic waste into recycled material and using it to build keyboards and mice.

SEA HOPE delivers social and environmental benefits. Since 2018, in cooperation with the Penghu and Kinmen county governments, over 3,000 participants have helped clean more than 79 metric tons of ocean abandoned foam to be recycled. Because of these efforts, carbon emissions have been reduced by over 72 metric tons.



Making a positive impact in a green marketplace

By simultaneously obtaining validation to UL ECVP 2809 and certification to UL 746D, LITEON was able to promote their credibility in the competitive green marketplace. The company is also now able to perform product marketing through UL Spot® and UL Product iQ™, UL's databases used to identify product sustainability information.

"The cooperation with UL helped our ocean plastic waste products enter the marketplace through UL's internationally recognized certification and conformity assessment services," Chiu said. LITEON can now promote their products with an added focus on sustainable manufacturing. Additionally, LITEON is looking to expand their eco-friendly product offerings in Asia.

"LITEON's application for sustainable product certification in the United States and Europe is their first step to accessing global markets that highly value sustainability," Shek said. "It also shows the company's commitment to sustainable manufacturing and to the protection of marine life."

Learn more at UL.com.

Empowering Trust®