

Dividing plastic's parts

A Vancouver company's proprietary chemical additives can break down plastic bags and packaging in mere months

BY CURT CHEREWAYKO

It's not often that you hear the term "environmentally friendly" used as a description for plastic, but a Vancouver company has been making the closest thing to environmentally friendly plastic for 17 years.

EPI Environmental Technologies develops chemical additives that, when incorporated into plastic in the manufacturing stage, accelerate its degradation.

According to Joseph Gho, EPI's chairman & CEO, creating biodegradable plastics is a more effective and practical way to manage plastic waste than banning certain plastic products.

He referenced a motion in January made by Vancouver councillor Tim Stevenson to phase out the use of plastic bags in Metro Vancouver's 22 municipalities.

"The reason why plastic is so popular is because it is so inexpensive, it can come in different shapes and different sizes and different strengths," said Gho.

Strength and durability, however, become detriments when it is time to dispose of plastic. That's when EPI's totally degradable plastic additives, or TPDAs, enter the picture.

Mainly used in grocery packaging and shopping bags, TPDAs cause plastic to degrade when it's exposed to sunlight, heat or mechanical stress – in a landfill, for example.



DOMINIC SCHAEFER

Joseph Gho, chair and CEO of EPI Environmental Technologies: creating biodegradable plastic is a more effective way to manage plastic waste

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Gho explained that there are two parts to the life span of plastic: stabilization and degradation. EPI's additives control and manage that life span, whose length can be tailored according to the requirements of the company's customers. Most of its customers request additives that begin degrading plastics after 12 to 18 months.

EPI's additives, which comprise about 2% of the products in which they are used, accelerate breakdown by dividing the polymers, or protein strands, that stabilize plastic into smaller parts.

The additives reduce the divided polymers into ever smaller parts until the plastic, originally resistant to water, becomes hydrophilic (water soluble) and degradable.

“Rather than persist in the environment for decades, it can [breakdown] in years or months,” said Gho.

The eventual leftovers are a non-toxic biomass.

“If you put that into soil for example, where there are about 80,000 species of fungi, bacteria and all those other critters ... they ingest it,” Gho explained.

In 2005, the world consumed 235 billion kilograms of plastics, according to EPI, with 40% of the plastics used in Europe and 25% in North America used as packaging.

Plastics made with EPI's additives are used in 50 countries.

Gho is mum about the size of the private company's business, but said that EPI is profitable and doubled its sales – in the tens of millions annually, he said – last year.

Gho is also hesitant to share much about the composition of EPI's additives. That's because EPI generates most of its revenue from selling the intellectual property used to create the additives.

The company has a staff of 30 in Vancouver and Langley – where the company's research and development team resides – but does little of its own manufacturing.

Instead, it sells the formula for the additives to ISO-certified compounders throughout the world.

The compounders then create plastics for EPI's end-users – supermarkets, primarily – who have previously stipulated in contracts or tenders that EPI's additives are used in their packaging, shopping bags and garbage bags.

EPI's end-users span the globe and include U.K.-based Tesco Corp., the world's third largest supermarket chain, the Body Shop and E. Wong, the largest supermarket chain in Peru.

In B.C., EPI's additives are used in shopping bags in the grocery stores of Richmond-based T&T Supermarket.

Cascades Inc. (TSX:CAS), a Quebec-based packaging producer began using EPI's additives in March 2007 in a product line of containers made from oxo-biodegradable polystyrene foam (think of the clamshell-shaped styrofoam containers used for fast-food takeout).

Concerned with the number of biodegradable plastic bags entering Quebec's recycling stream, the Quebec government commissioned a report in November 2007 that found that bags with TDPAs are as recyclable as conventional plastic bags.

EPI also makes biodegradable plastic landfill covers, which generate about 10% of company revenue.

EPI's covers are used in the Puente Hills Landfill in Los Angeles County, which accepts roughly four million tonnes of garbage annually and is the largest landfill in the United States. ■