

PriWatt™ PDLC Environmental Disposal Information Document

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Technology Introduction

PriWatt PDLC film consists of a polymer matrix of liquid crystals enclosed by electrically conductive Indium Tin Oxide-coated PET (polyethylene terephthalate) film. The resulting PDLC film has wiring attached to a conductive copper strip along the film's edge. The wiring is connected to a step down transformer through which power is supplied for the "ON" state.

An Introduction to PET

PET (also abbreviated PETE) is short for Polyethylene terephthalate, the chemical name for polyester.

PET is a clear, strong, and lightweight plastic that is widely used for packaging foods and beverages, especially convenience-sized soft drinks, juices and water. Virtually all single-serving and 2-liter bottles of carbonated soft drinks and water sold in the U.S. are made from PET.

PET was first synthesized in North America in the mid-1940s by DuPont chemists searching for new synthetic fibers. DuPont later branded its PET fiber as "Dacron." Today, more than half of the world's synthetic fiber is made from PET, which is called "polyester" when used for fiber or fabric applications. When used for containers and other purposes, it is called PET or PET resin.

Global Safety Approval

PET is approved as safe for contact with foods and beverages by the FDA and health-safety agencies throughout the world. The safety of PET for food, beverage, pharmaceutical and medical applications has been repeatedly demonstrated through extensive studies, regulatory approvals, testing, and its widespread acceptance for more than 30 years. PET does not contain bisphenol-A (BPA) or phthalates (plasticizers). Because of PET's unique properties, it is rapidly becoming the world's preferred packaging material for foods and beverages. Like glass, it is a very strong and inert material that does not react with foods, is resistant to attack by micro-organisms, and will not biologically degrade. But unlike glass, PET is extremely lightweight, easy and efficient to transport, and shatterproof.

Fully Recyclable

PET is completely recyclable, and is the most recycled plastic in the U.S and worldwide. More than 1.5 billion pounds of used PET bottles and containers are recovered in the United States each year for recycling. PET can easily be identified by the #1 in the triangular "chasing arrows" code, which is usually found molded into the bottom or side of the container. No other plastic carries the #1 code.

PDLC film can be commercially recycled by thorough washing and re-melting, or by chemically breaking it down to its component materials to make new PET resin. Almost every municipal recycling program in North America and Europe accepts PET containers.

