invitrogen™ by life technologies™

Invitrogen™ ELISA Kits

Green Benefits

- Less hazardous
- Less use of resources
- Allows decreased fuel consumption and green-house gas emissions required for transport
- Less waste disposal

Introduction

Life Technologies is committed to designing products with the environment in mind—it's one more step toward a smaller footprint. This paper provides the rationale behind the environmental claims that this product is now less hazardous than the preceding product. Most Invitrogen™ ELISA kits have been reformulated with a Stop Solution that no longer needs to be shipped as a Dangerous Goods per the U.S. Department of Transportation (DOT), IATA and ICAO classifications. In addition, we also redesigned our kit box with less packaging.

Product Description

Invitrogen™ ELISA kits are designed to detect biomarker proteins using a horseradish peroxidase-labeled antibody detection system.

Green Features

Less Hazardous

Traditional technology for detecting biomarker proteins involves use of hydrochloric acid (Stop Solution)—to reduce the pH of the resulting reaction, effectively stabilizing the detection signal to allow quantitative measurement.

By applying principles of Green Chemistry, a less hazardous formulation of the Stop Solution was created, validated and approved in over 500 Invitrogen™ ELISA kits. This chemical substitution eliminated the corrosive properties of the previous formulation—improving safety for the end user and reducing the need to transport the material as a Dangerous Good.

Please see the MSDSs for this line of products at www.invitrogen.com.

Table 1: Kit Design

	Length (in)	Width (in)	Height (in)	Volume (cu. in.)	Weight (kg)
Old	8.5	6	4	204	0.214
New	8	5.5	4	176	0.136
Net Reduction				**13.7%**	**36.4%**

Sustainable Packaging

The previous packaging design for the Invitrogen™ ELISA kits was slightly larger, requiring more raw materials. By designing the kit box to incorporate sustainable packaging criteria, the overall volume of the box is reduced by 14% and the material consumption is reduced by 36%.

In addition, the original packaging for the ELISA kits contained a polyurethane foam insert which was not recyclable and was manufactured from non-renewable raw materials. Further improvement in the new configuration includes replacement of the polyurethane foam insert with a recyclable paper insert.

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