

The ACT label: enabling more sustainable purchasing decisions

Key words

Sustainability, greener products, ACT label, My Green Lab, general labware, purchasing decisions

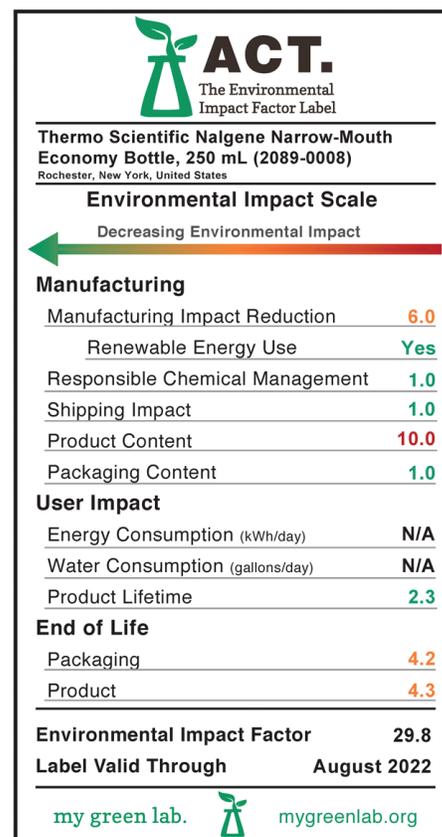
Goal

This technical note provides information on how to make environmentally conscientious decisions using the ACT label when purchasing products for the laboratory.

Introduction

Thermo Scientific™ products are part of a program run by the nonprofit organization My Green Lab (mygreenlab.org) that provides an environmental assessment label for laboratory products—the ACT label (Figure 1). Products are assessed and scored by the Sustainability Made Simple Collaborative, an independent third party, on a number of different environmental impact factors such as product recyclability, energy use, and sustainable manufacturing practices. My Green Lab uses the scores to produce an ACT label for each product, which can help inform a potential purchaser about a product's environmental impact. The ACT label is a virtual label that is published on the My Green Lab website for public access. In the spirit of sustainability, paper labels and their adhesives are avoided in favor of electronic distribution.

The virtual ACT label is like an eco-nutrition label for lab products. By emphasizing accountability (A), consistency (C), and transparency (T) around manufacturing, energy and water use, packaging, and end-of-life disposal, ACT labeling is designed to make the process of comparing and choosing more sustainable products easy. ACT labels can be used to compare products before purchasing something new or to evaluate the impact of a product currently in use. Reading the ACT label is simple: the lower the score, the lower the impact on the environment. Most categories are rated on a scale of 1–10.



Lower score = lower environmental impact



Figure 1. The ACT label and color-coded scale depicting environmental impact.

The benefits of having an ACT label

Research labs are resource intensive—billions of pounds of plastics are discarded globally every year [1]. The opportunity to reduce the environmental impact of labs through smarter purchasing should be an option, but it has been difficult to determine which products are the greener choices. The ACT label provides the transparency needed to make informed purchasing decisions based on environmental sustainability. In addition, the label provides detailed information about the score and offers helpful tips, including how best to dispose of the product and its packaging.

The data that drives the ACT label

ACT labels are based on data from the supplier on the manufacturing, shipping, use, and end-of-life disposal of the product. The data are independently audited by Sustainability Made Simple and verified and published by My Green Lab. The criteria for the ACT label are represented as environmental impact factors (EIFs), which were developed with input from scientists, sustainability directors, procurement specialists, and manufacturers to provide a comprehensive product labeling program for life science products. Verification of the data by a third party helps the ACT label remain an unbiased and credible way to score laboratory products.

The ACT label

The label contains categories for manufacturing, user impact, and end-of-life. The subcategories within each of the main categories are linked to the product page on the My Green Lab website and provide specific details on the scoring process for the product.

In 2020, My Green Lab introduced region-specific labels for the European Union (EU) and United Kingdom (UK) in an effort to expand the program. The labels were originally designed for the United States (US). Because the scores for shipping impact and end-of-life disposal are dependent on where the product is made and then sold and used, the EU and UK labels will differ in those scores.

Products with ACT labels

Below are examples of US, EU, and UK ACT labels for the Thermo Scientific™ Nalgene™ Narrow-Mouth Economy Bottle (Figure 2) and the criteria used to generate the scores. Note that as Thermo Fisher Scientific strives to make continuous advancements in product sustainability, it is still our responsibility to manufacture products that meet the stringent quality requirements of scientific research. For this reason, careful assessment is used in choosing opportunities for sustainability improvement.

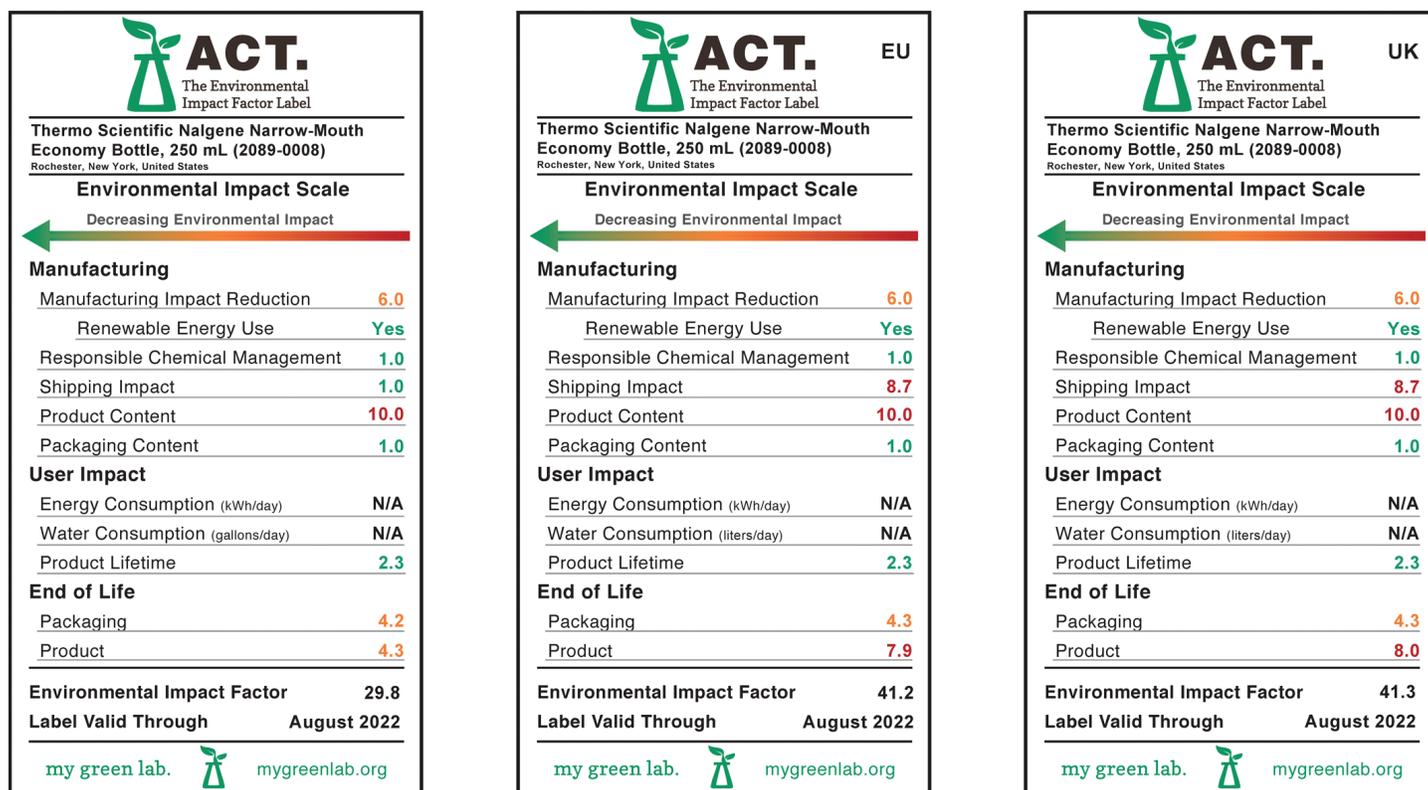


Figure 2. United States (US), European Union (EU), and United Kingdom (UK) ACT labels for the Nalgene Narrow-Mouth Economy Bottle (Cat. No. 2089-0008).

Thermo Fisher Scientific sources materials made from 100% virgin plastic resin to make Nalgene labware to ensure product performance and low leachable content. Therefore, the scores for these products are 10 in the “Product Content” category on the ACT label.

Currently, sustainability improvements center around using postconsumer recycled content in product packaging, using energy-saving manufacturing and warehousing practices, reducing manufacturing waste, purchasing locally made raw materials, and exploring recycling programs to assist customers with responsible end-of-life product disposal. However, we are also exploring areas of improvement as technologies become available.

Manufacturing impact reduction

This category evaluates the steps that have been taken to reduce energy and water use and waste generation at Thermo Fisher Scientific manufacturing facilities over the past five years. A score of 6 was given in this category to the Nalgene Narrow-Mouth Economy Bottle because the manufacturing plant in Rochester, NY upgraded its lighting to LEDs. This reduced lighting energy usage by more than 50%, and implementing energy audit recommendations resulted in electricity savings of more than 1.3 million kWh annually.

Renewable energy use

Renewable energy is used at the Rochester, NY manufacturing facility because of participation in the “Recharge NY” state program, and it sources 875 kW of hydroelectric power annually (25% of the facility’s annual electric usage).

Responsible chemical management

Thermo Fisher Scientific was required to provide evidence of processes and procedures that mitigated risk of exposure to hazardous chemicals and products based on regulatory requirements. My Green Lab scores this subcategory based on an ISO 140001 environmental management system (EMS) or equivalent EMS that incorporates the highest standards. The evidence that Thermo Fisher Scientific provided was contained in the safety data sheets (SDSs) and Chemical Abstract Service (CAS) numbers for the raw materials used in products. The chemicals were screened and scores were assigned based on the presence of carcinogens, mutagens, and reproductive toxins in the products. The score of 1 in this category reflects the fact that Thermo Fisher Scientific uses an active environmental

health and safety program (EHS) and regularly assesses the supply chain for proper storage and use of hazardous chemicals. In addition, none of the products contain carcinogens, mutagens, reproductive toxins, persistent bioaccumulative toxins, “Red List” chemicals (a list of hazardous chemicals identified by the International Living Future Institute), or GreenScreen List Translator™ 1 (LT-1) chemicals at or above 95% by weight.

Shipping impact

The “Shipping Impact” score is based on transporting products from manufacturing to the distribution center. For the US-based labels, the Nalgene Narrow-Mouth Economy Bottles, manufactured and distributed in Rochester, NY received a score of 1. The EU- and UK-based labels reflect a score of 8.7 because the product must be shipped overseas to the distribution center in Eindhoven, Belgium. This increases the shipping impact score because of the environmental footprint of shipping the product.

Product content

This category refers to the use of responsibly sourced materials in the making of the product. The Nalgene Narrow-Mouth Economy Bottle is made with virgin materials and received a score of 10, because no sustainable content is used to manufacture the product.

Packaging content

This category refers to the use of responsibly sourced materials in packaging the product. The Nalgene Narrow-Mouth Economy Bottle received a score of 1, because the Rochester, NY manufacturing site uses corrugate boxes made from 100% postconsumer recycled content to package the bottles for shipment.

Energy consumption

The Nalgene Narrow-Mouth Economy Bottle does not consume energy when in use.

Water consumption

The Nalgene Narrow-Mouth Economy Bottle does not consume water when in use.

Product lifetime

Most laboratory equipment and consumables have a shelf life. The longer a product is intended to last, the less likely it is that someone will need to replace it. The lifetime of the Nalgene Narrow-Mouth Economy Bottle depends on how it is being used, which is reflected in its score of 2.3. In most labs, the bottle is reused many times, but in other cases

it could be used only once. The score of 2.3 in this case reflects the average of a range of storage applications.

End-of-life packaging

Packaging from life science products remains a sizable waste stream for most organizations. Packaging is assessed and scored based on its most likely end-of-life scenario: landfill, recyclable, compostable, biodegradable, or part of a take-back program. "Recyclable" specifically refers to the fact that the product can be recycled in at least 60% of the communities where the product is sold. It has been defined by the Federal Trade Commission in the US and the equivalent agencies in the EU and UK. The Nalgene Narrow-Mouth Economy Bottle received scores of 4.2 (US), 4.3 (EU), and 4.3 (UK) because the cardboard box is recyclable, but the low-density polyethylene (LDPE) bag is not readily recyclable. These scores also take into account the fact that we provide customers with educational information on the product page on how to manage packaging recycling. The scores have numbers in the tenths place because they are calculated based on the percent weight of each packaging material.

Product end of life

The Nalgene Narrow-Mouth Economy high-density polyethylene (HDPE) Bottle is recyclable, but the polypropylene cap is not readily recyclable. Therefore, the product received a score of 4.3 in the US, 7.9 in the EU, and 8.0 in the UK. These scores also take into account the fact that we provide customers with educational materials on the product page on how to manage product recycling at end of life.

Environmental impact factor (EIF)

Taking the sum of all the scores from the previous categories, the Nalgene Narrow-Mouth Economy Bottle received an EIF of 29.8 in the US, 41.2 in the EU, and 41.3 in the UK. These labels are valid through August 2022 and will be reassessed at that point.

Why ACT labels can matter

Thermo Fisher Scientific is demonstrating its commitment to sustainability by participating in the program offered by

My Green Lab and bringing the ACT label to the laboratory community for a selection of products.

Through inclusion in this program and the transparency of the manufacturing procedures necessary to make the program meaningful, Nalgene products are paving the way for laboratories to make sustainable purchasing a reality.

Using the ACT label, customers can compare EIF scores for the categories that matter most to them before each purchase and make informed and educated decisions based on sustainable manufacturing, use, and disposal practices.

In summary, the ACT label:

- Provides the transparency needed for labs to be able to make more sustainable purchasing decisions
- Motivates product development professionals to introduce more sustainable products and product packaging options
- Encourages manufacturers to make process improvements to operate more sustainably
- Supports customers in efforts to reuse and recycle products whenever possible
- Demonstrates a commitment to invest in sustainable business practices

Summary

As a purchaser, you can make more environmentally informed purchasing choices for your labware by consulting ACT labels found at act.mygreenlab.org. By doing so, you become part of the movement driving demand for products to be characterized by ACT labels in support of sustainable purchasing decisions.

Reference

1. Bistulfi, G (2013) Reduce, reuse and recycle lab waste. *Nature* 502:170.

Find out more at thermofisher.com/sustainability