



NA-Fluor Influenza Neuraminidase Assay Kit



Greener by design™

 **Less hazardous:** no ethanol or caustic sodium hydroxide

 **Sustainably packaged:** no dry or gel ice, no coolers, recyclable kit packaging with 100% recycled content

 Learn more at thermofisher.com/greenerbydesign

Introduction

Thermo Fisher Scientific is committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claims that the use of this product results in reduced exposure to hazardous materials and that the product is responsibly packaged. The Invitrogen™ NA-Fluor™ Influenza Neuraminidase Assay Kit is composed of nonhazardous reagents and is safer to use than our previous Invitrogen™ NA-Star™ kit. Its 100% recycled kit packaging reduces our carbon footprint and can be shipped at ambient instead of cold temperature, also reducing waste in the lab.

Product description

The NA-Fluor Influenza Neuraminidase Assay Kit has been optimized for monitoring the effect of neuraminidase inhibitors (NI) on neuraminidase (NA) enzyme activity, a method widely used by research and public health laboratories for influenza virus NI susceptibility screening. The assay is a direct, functional enzyme assay that detects both known and new mutations that affect NI drug sensitivity. By using the MUNANA substrate, data can be compared with data generated using standard Neuraminidase Inhibitor Susceptibility Network (NISN; nisen.org) IC50 determination protocols. While this method is widely used for influenza virus NI susceptibility screening, the NA-Fluor kit can be used for any application that has been demonstrated using traditional MUNANA assays. The kit provides the Invitrogen™ NA-Fluor™ fluorescent substrate, assay reagents, and protocols to measure NA activity from influenza virus.

Green features

Less hazardous

The NA-Fluor Influenza Neuraminidase Assay Kit has been designed to reduce the use of hazardous chemicals associated with conventional neuraminidase activity assays. Applying the principles of green chemistry, our scientists sought a nonhazardous alternative to caustic sodium hydroxide stop solutions. They selected a solution of sodium carbonate (environmentally benign in the quantities used for this application) that would stabilize the fluorescent signal while meeting our stringent quality requirements. Ethanol was also eliminated from the stop solution buffer, further reducing environmental impact and hazardous chemical exposures.

Sustainably packaged

By supplying the neuraminidase substrate in powder form, we can improve the shelf life of the product and avoid having to deliver the product in a cooler with refrigerant. This significantly improves our carbon footprint from cold-chain transport, reducing CO₂ emissions generated from the manufacturing of coolers and refrigerant, increasing freight density via decreased packaging size, and decreasing fuel consumption by removing refrigerant weight. It also reduces packaging waste (Figure 1) in our customers' labs and reduces energy costs associated with refrigerated storage.

Additionally, we applied our sustainable packaging principles to the NA-Fluor Influenza Neuraminidase Assay Kit, "right-sizing" it to eliminate excess packaging and allow storage in a smaller space.

Through selection of sustainable kit materials, we have made significant strides in reducing our packaging footprint. The kit packaging is made entirely from 100% post-consumer recycled material and is fully recyclable at end-of-life.

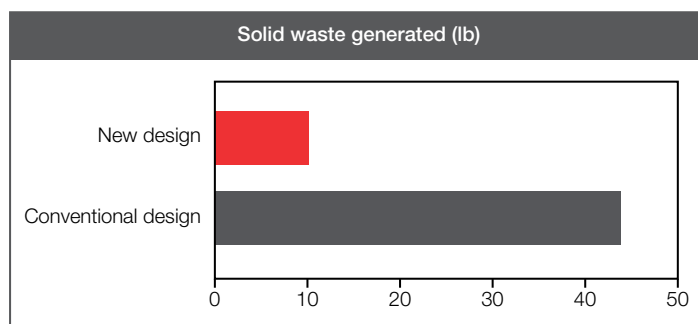


Figure 1. Impacts of packaging changes, per 1,000 boxes.