

# SimplyBlue SafeStain

## Comparison to traditional technology



**Green benefits**

- Less hazardous: no hazardous materials required
- Less waste: no hazardous waste generated

### Introduction

We are committed to designing our products with the environment in mind—it's part of how we enable our customers to make the world healthier, cleaner, and safer. This fact sheet provides the rationale behind the environmental claim that this product is less hazardous than comparable products. The use of Invitrogen™ SimplyBlue™ SafeStain eliminates the need to use methanol and acetic acid (from nonrenewable resources) to fix and destain polyacrylamide gels to visualize protein bands.

### Product description

SimplyBlue SafeStain is a ready-to-use, Coomassie G-250–based stain that is specially formulated for fast, sensitive detection of protein bands, and safe, nonhazardous disposal.

### Green features

#### Less hazardous

Traditional technology for visualizing proteins in polyacrylamide gels involves the use of flammable concentrations of methanol and corrosive concentrations of acetic acid to solubilize the stain, and hazardous methanol/acetic acid solutions to destain the gels. This generates a significant amount of hazardous waste that must be collected, safely stored, and properly disposed of at end-of-life. In contrast, SimplyBlue SafeStain is formulated in a dilute, noncorrosive acid solution and then is destained in water, eliminating exposure to hazardous chemicals and reducing costs of auxiliary materials and waste disposal.

By applying principles of green chemistry [1] to the traditional dye, a safer stain was created. SimplyBlue SafeStain can be solubilized for use and destained in a nonhazardous aqueous solution, eliminating the

hazardous waste generated from traditional formulations. Use of SimplyBlue SafeStain eliminates the generation of approximately 120 mL of hazardous waste per gel run. For a laboratory running 20–30 gels per day, this means a total reduction of approximately 600–900 L of hazardous waste per year.

#### Hazardous waste calculation\*

- 1 x 20 mL stain
- 5 x 20 mL destain cycles

Please see the MSDS representing the new formulation at [thermofisher.com/msds](http://thermofisher.com/msds)

\* Representative data; volumes may vary according to specific laboratory procedures.

**Table 1. SimplyBlue SafeStain has been tested for disposal classifications with the following results.**

Analysis	Method	Results
Ignitability	EPA 1010	Nonflammable (>144°F)
Corrosivity	EPA 150.1	Noncorrosive (pH ≥2.1)
Corrosivity (by Corrositex™ assay)	DOT-E 10904	Noncorrosive
Reactivity (cyanide and sulfide)	EPA 9010B/9014 EPA 9030A	No reactivity
Aquatic toxicity (fathead minnow, definitive, CCR Title 22)	CA Fish and Game	Nontoxic

#### Reference

1. Anastas P, Wagner J (1998) Green Chemistry: Theory and Practice. New York: Oxford University Press.

Find out more at [thermofisher.com/simplyblue](http://thermofisher.com/simplyblue)

**ThermoFisher**  
SCIENTIFIC