NEOGEN®

Colorimetric Substrates | Chemiluminescent Substrates | Reagents for Immunoassays

IMMUNOASSAY PRODUCTION

Neogen® develops, manufactures, and markets food and animal safety solutions

Founded in 1982, Neogen (NASDAQ: NEOG) now operates out of multiple U.S. and international locations, and has a worldwide presence. With corporate headquarters in Lansing, Michigan, Neogen has additional facilities in Lexington, Kentucky; Randolph, Wisconsin; Lincoln, Nebraska; and other U.S. locations; and Mexico, Brazil, Scotland, England, India, Australia, and China.

Neogen Divisions

Food Safety: Our Food Safety division markets dehydrated culture media and diagnostic test kits to detect foodborne bacteria, natural toxins, food allergens, drug residues, plant diseases, and sanitation concerns. For more information, please visit neogen.com.

Animal Safety: Our Animal Safety division is a leader in worldwide biosecurity products, animal genomics testing, and the manufacturing and distribution of a variety of animal healthcare products, including diagnostics, pharmaceuticals, and veterinary instruments.

Substrates and Reagents

Complete Substrate and Reagent Solutions

Neogen® manufactures an expanding range of substrates and reagents designed for horseradish peroxidase (HRP) and alkaline phosphatase (AP) based microwell and membrane assays. Our substrates offer excellent sensitivity, stability, and lot-to-lot consistency, featuring linear kinetic response across a range of analyte concentrations.

Safety

- Adaptable to changing regulatory requirements
- 100% solvent-free formula
- Formulas to meet strict regulatory environments

Sensitivity

- Multiple formulas offer a range of kinetic rates and sensitivity levels, allowing manufacturers to select the most appropriate formula for their application
- High signal-to-noise ratio, minimizing unwanted background interference

Stability

- Shelf life up to 48 months
- Stability is monitored in real-time with stringent quality control standards
- Minimal activity loss over the course of the shelf-life

Quality

- ISO 9001:2015 certified, our quality management system improves our efficiency and effectiveness, ensuring our customers receive consistent high-quality products
- Each batch requires a minimum six hours of quality control testing
- Newly manufactured substrate performance is compared with aged lots to ensure lot-to-lot consistency

About K-Blue® TMB Substrate

K-Blue substrate got its name from Kentucky Blue, specifically Pantone 286, because the substrate turns a deep blue in the presence of peroxidase. Today we use K-Blue to manufacture thousands of in-house assays for forensic toxicology, therapeutic drug monitoring, food safety testing applications, and life science research. K-Blue substrate has been employed by end users for assays to screen for drugs of abuse, foodborne pathogens, food allergens, mycotoxins, hormones, steroids, and many other analytes of interest.

Neogen continues to meet the ever-changing requirements of immunoassay manufacturers all over the world. Currently we offer K-Blue Advanced, Enhanced K-Blue, K-Blue Aqueous, and our newest formulas K-Blue Select and K-Blue Advanced Plus.

Colorimetric Substrates

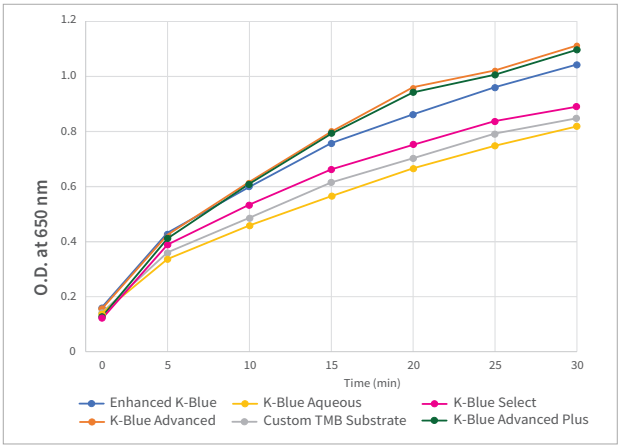
HRP Substrates

Microwell Substrates

We recognize that one TMB microwell substrate formulation will not meet the specifications of all HRP-based immunoassays. Therefore, we offer multiple unique one-bottle TMB microwell colorimetric substrate formulations to meet specific requirements for different assay systems.

Neogen substrates have common characteristics of low background, long-term stability, and excellent lot-to-lot consistency.

Activity Comparison



10 µL of HRP (0.5x concentration) + 100 µL substrate per well.

Microwell HRP Substrates

Product	Activity	Shelf Life	Product Features	Available Sizes	Product Numbers
K-Blue® Advanced Plus	High activity	24 months when stored at 2-8°C	• Excellent performance • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	379175 379176 379177 379257
K-Blue Advanced	High activity	48 months when stored at 2–8°C	• Superior activity • Increased sensitivity at higher HRP concentrations • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	319175 319176 319177 319257
Enhanced K-Blue	High activity	48 months when stored at 2–8°C	• Longest shelf-life of Neogen TMB substrates • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	308175 308176 308177 308257
K-Blue Select	Mid-level activity	24 months when stored at 2–8°C	• Ideal for assays requiring a less active substrate • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	382175 382176 382177 382257
Custom TMB	Mid-level activity	36 months when stored at 2–8°C	• Ideal for assays requiring a less active substrate • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	309175 309176 309177 309257
K-Blue Aqueous	Mid-level activity	36 months when stored at 2–8°C	• 100% solvent-free • Ideal when working under strict regulatory requirements • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	331175 331176 331177 331257

Additional HRP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes	Product Numbers
ABTS	HRP Microwell	36 months when stored at 2–8°C	• Produces a soluble blue-green reaction • Results are read at 405/410 nm	100 mL 1 L	310247 310177
TMB Membrane	HRP Membrane	48 months when stored at 2–8°C 24 months when stored at 15–25°C	• Produces an insoluble, permanent dark blue reaction	100 mL 1 L	311247 311177
TMB Membrane Plus	HRP Membrane	48 months when stored at 2–8°C 24 months when stored at 15–25°C	• Produces an insoluble, permanent dark blue reaction	100 mL 1 L	337247 337177

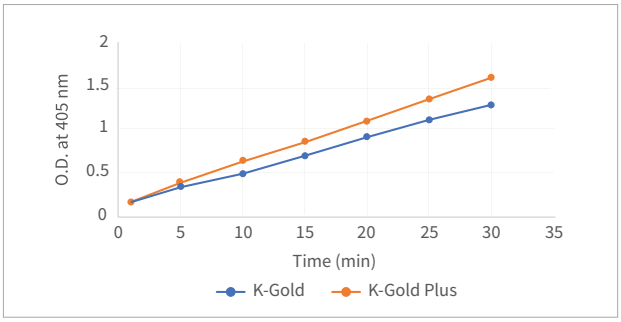
AP Substrates

Microwell Substrates

We offer K-Gold® and K-Gold Plus, PNPP-based substrates, for ELISA applications. The ready-to-use formulas do not require mixing of additional ingredients or stabilizing agents, making them ideal for assay manufacturers.

Neogen substrates have common characteristics of low background, long-term stability, and excellent lot-to-lot consistency.

K-Gold Activity Comparison



5 µL of calf-intestinal AP + 95 µL of substrate per well. Optical density (OD) read at 405 nm over 30 minutes.

Microwell AP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes	Product Numbers
K-Gold Plus	AP Microwell	24 months when stored at 2–8°C	• Improved activity • RTU (Ready-to-use) • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	339175 339176 339177 339257
K-Gold	AP Microwell	30 months when stored at 2–8°C	• High activity • RTU (Ready-to-use) • Low background	200 mL 500 mL 1 L 20 L (1 x 20 L)	303175 303176 303177 303257

Reagents for Immunoassays

Product	Application	Shelf Life	Product Features	Available Sizes	Product Numbers
Red Stop Solution	HRP Microwell	24 months when stored at 2–25°C	• Produces a dark purple-pink color for a minimum of two hours when added to the wells • Non-acidic solution	200 mL 500 mL 1 L	301474 301475 301476
EIA Buffer	HRP Microwell	24 months when stored at 2–8°C	• Dilutes enzyme conjugates, standards, and samples	500 mL 1 L	301276 301277
Wash Buffer	HRP Microwell	24 months when stored at 2–8°C	• Washes all unbound enzyme conjugate, samples and standards from microplates • Concentrated (10x) buffer	500 mL 1 L	301176 301177

Chemiluminescent Substrates

Microwell and Membrane HRP Applications

We offer multiple luminol-based chemiluminescent substrate formulations for microwell and membrane applications for the ultimate detection of HRP. Our substrates offer sensitivity capabilities from picogram to femtogram.

Chemiluminescent HRP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes	Product Numbers
K-Blue Luminescent ONE	HRP Microwell	12 months when stored at 2–8°C	• Sensitivity in low picogram range • Luminol-based chemistry • One component system	200 mL 500 mL 1 L	384175 384176 384177
K-Blue Luminescent	HRP Microwell	18 months when stored at 2–8°C	• Sensitivity in low femtogram range • Luminol-based chemistry • Two component system	200 mL kit (2 x 100 mL) 500 mL kit (2 x 250 mL) 1 L kit (2 x 500 mL)	383175 383176 383177
Chemiluminescent Elite Plus	HRP Microwell and Membrane	18 months when stored at 2–8°C	• Sensitivity in low picogram range • Luminol-based chemistry • Two component system	200 mL kit (2 x 100 mL) 500 mL kit (2 x 250 mL) 1 L kit (2 x 500 mL)	324175 324176 324177
Chemiluminescent Elite	HRP Microwell and Membrane	18 months when stored at 2–8°C	• Sensitivity in picogram range • Luminol-based chemistry • Two component system	200 mL kit (2 x 100 mL) 500 mL kit (2 x 250 mL) 1 L kit (2 x 500 mL)	323175 323176 323177

Microwell and Membrane AP Applications

We also offer ultra-sensitive 1,2-dioxetane-based chemiluminescent formulations for the detection of AP in microwell and membrane applications. Our substrates offer sensitivity capabilities to the attogram level.

Chemiluminescent AP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes	Product Numbers
Chemiluminescent AP Select Plus 450	AP Microwell and Membrane	24 months when stored at 2–8°C	• Most sensitive formula, attogram (10^{-18} g) higher range • Dioxetane-based chemistry • RTU (Ready to use)	200 mL 500 mL 1 L	326175 326176 326177
Chemiluminescent AP Select Plus 540	AP Microwell and Membrane	24 months when stored at 2–8°C	• Excellent sensitivity, attogram (10^{-18} g) higher range • Dioxetane-based chemistry • RTU (Ready to use)	200 mL 500 mL 1 L	327175 327176 327177
Chemiluminescent AP Select 540	AP Microwell and Membrane	24 months when stored at 2–8°C	• High sensitivity, attogram (10^{-18} g) lower range • Dioxetane-based chemistry • RTU (Ready to use)	200 mL 500 mL 1 L	329175 329176 329177
Chemiluminescent AP Select 450	AP Microwell and Membrane	24 months when stored at 2–8°C	• Least sensitive formula, attogram (10^{-18} g) lower range • Dioxetane-based chemistry • RTU (Ready to use)	200 mL 500 mL 1 L	328175 328176 328177

Custom Packaging

Packaging Simplified
We can package substrates and reagents in custom bottle sizes and volume fills to meet your specific packaging requirements. We utilize a fully automated system for substrates and reagents that offers multiple benefits compared to manual bottle filling processes.

Custom-filling capabilities:

- Fill volumes 6 mL to 55 L
- Bottle sizes from 15 mL bottles to 55 L containers
- Tailored labeling options

Custom-filling benefits:

- Reduces risk of substrate contamination
- Minimizes exposure to light and air
- Ensures long-term stability of the substrate
- Precise volume fill per bottle reduces volume variability bottle-to-bottle
- Reduced cost from over filling