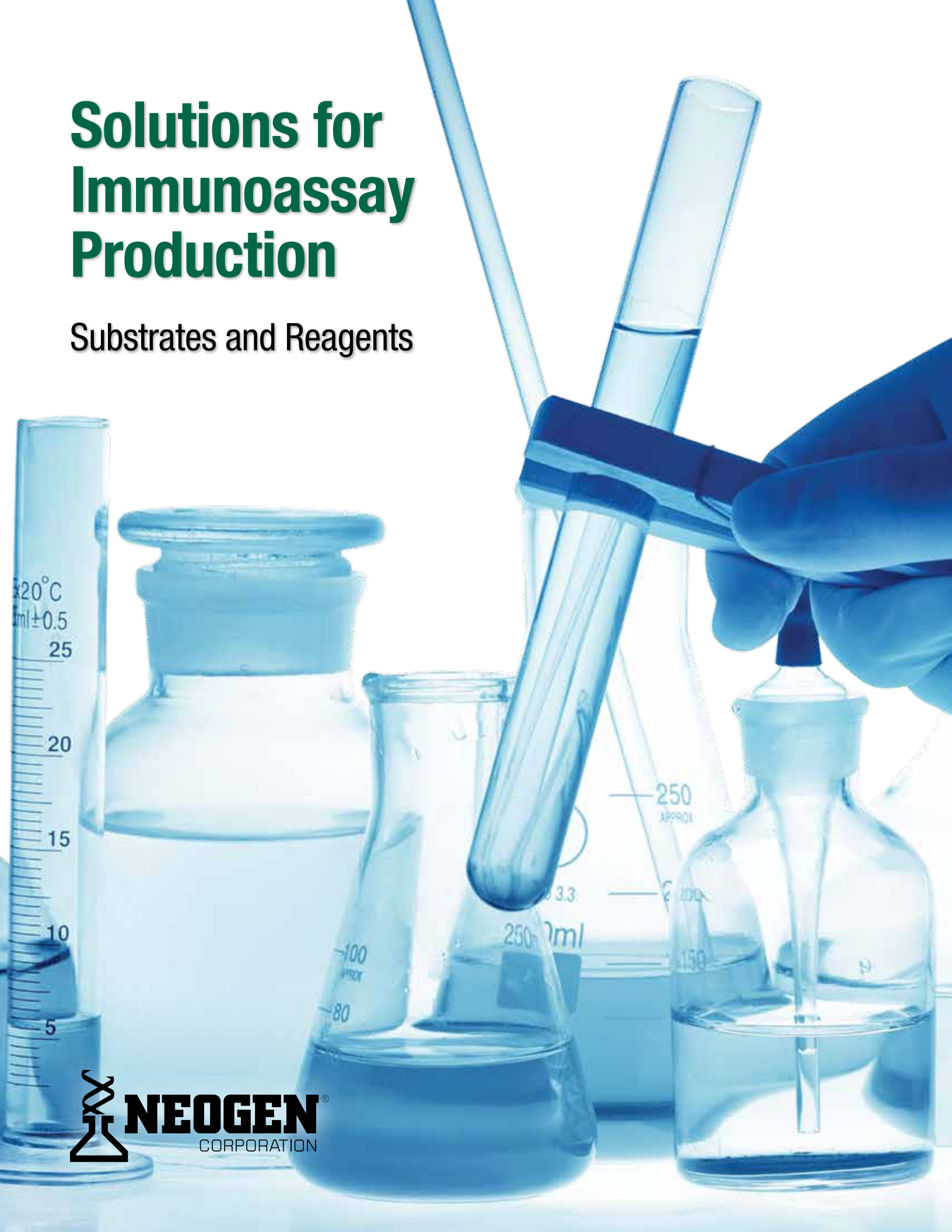


# Solutions for Immunoassay Production

Substrates and Reagents



## Company Profile

Founded in 1982, Neogen Corporation (NASDAQ: NEOG) is headquartered in Lansing, Mich., and has grown to more than 900 employees in multiple U.S. and international locations. The company's Lansing-based Food Safety Division develops and markets dehydrated culture media and rapid diagnostic test kits to detect foodborne bacteria, spoilage organisms, mycotoxins, food allergens, genetic modifications, drug residues, plant diseases, and sanitation concerns.

Neogen's Life Sciences Division is based in Lexington, Ky., and develops, manufactures and markets a diverse line of research products for life science research and forensic toxicology. Lexington is also home to Neogen's Animal Safety Division that develops and markets a complete line of diagnostics, veterinary instruments, veterinary pharmaceuticals, nutritional supplements, disinfectants, and rodenticides. Neogen's GeneSeek subsidiary, based in Lin-

coln, Neb., is the leading global provider of DNA testing for animal agribusiness and veterinary medicine. Neogen has additional facilities across the U.S., and in Scotland, Mexico, Brazil, and China.

Neogen believes maintaining earned trust is a combination of innovation and a continuous commitment to quality. Neogen's quality management system is ISO 9001:2008 certified, which communicates to the company's worldwide customer base that it understands the quality standards customers expect, and is firmly committed to achieving those quality standards.

In recognition of this success, Neogen has been repeatedly named to Forbes Magazine's list of the Best Small Companies in America, and was chosen by the NASDAQ National Market to be included in its top tier of listed companies, the Global Select Market.



### Substrates and Reagents

Neogen offers an expanding line of substrates and reagents to meet our customers' immunoassay needs. The substrates are available for use with horseradish peroxidase (HRP) and alkaline phosphatase (AP) based microwell and membrane assays. Neogen's substrates offer excellent sensitivity, stability and lot-to-lot consistency that make them ideal for inclusion in commercial immunoassay test kits or for individual in-house assay projects. Neogen's immunoassay reagents include a stop solution and buffers.

Our broad line of substrates and reagents offers the advantages of purchasing multiple formulations from one manufacturer, allowing for larger discounts, uniform delivery schedules and simplified purchasing procedures.

### Stability/Shelf Life

- Many of our substrates now offer an extended shelf life.
- Ranging from 18–48 months, the stability of our substrates is under constant evaluation.

### Lot-to-Lot Consistency

- Each substrate formulation has designated release criteria. These specifications must be met before the substrate is approved.
- Each substrate batch requires a minimum 6 hours of testing and a production record review is conducted.
- A COA is issued for each approved substrate batch and is included with each substrate shipment.

### Custom Fill and Packaging Services

Neogen can package substrates and reagents in custom bottle sizes and volume fills to meet your specific packaging requirements.

Our capabilities include:

- Fill volumes ranging from 6 mL to 55 L
- Bottle sizes range from 15 mL bottles to 55 L containers
- Unlabeled and custom labeling options available



### ISO 9001:2008 Certified

This quality management system improves Neogen's efficiency and effectiveness and ensures our customers receive consistent high quality products.

### Custom Development

If you require a specific activity level or other product requirement, please contact us about customizing a formula that better fits your needs.

### Regulatory

In an ever changing regulatory environment, Neogen offers a revolutionary, 100% solvent-free formula.

Neogen utilizes a fully automated filling system for substrates and reagents that offers the following benefits as compared to manual or semi-automated bottle filling processes:

- Reduced risk of contamination
- Ensures long-term stability of the substrate
- Ensures precise volume fill per bottle and reduces volume variability bottle-to-bottle
- Enables customers to specify preferred fill volumes if the standard volumes do not meet their requirements
- Automated labeling options with Neogen provided labels or customer designed labels
- Automated capping of bottles to ensure consistent application and customer torque requirements

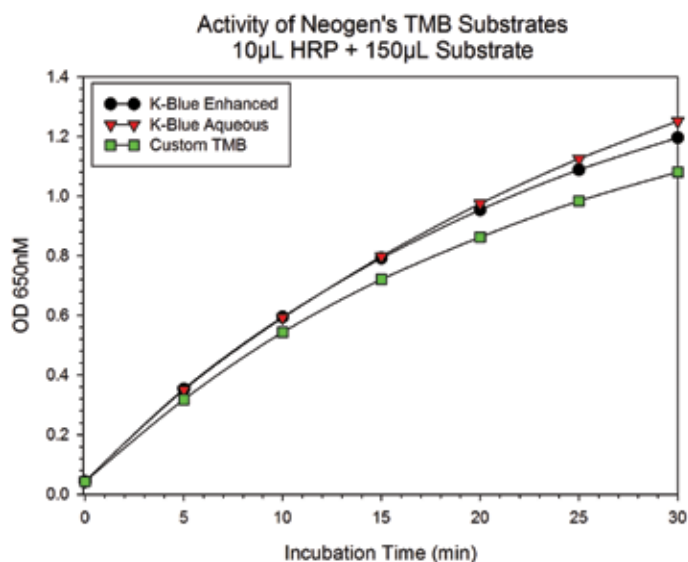
## Colorimetric Substrates

### HRP Substrates

#### Microwell Substrates

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

All of Neogen's TMB microwell substrate formulations are one-bottle stabilized chromogenic substrates for use with horseradish peroxidase immunoassays. The formulations contain 3,3',5,5' TMB and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) in a ready-to-use format with long-term stability. Our TMB substrates turn a deep blue color in the presence of peroxidase labeled conjugate. These substrates are not applicable for use with assays requiring a precipitating substrate. Neogen substrates have common characteristics of low background and excellent lot-to-lot consistency.



\*Alert® K-Blue Aqueous has similar activity to K-Blue Aqueous

#### Microwell HRP Substrates

Product	Activity	Shelf Life	Product Features	Available Sizes
Enhanced K-Blue®	High activity	48 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Longest shelf-life of Neogen TMB substrates</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>
K-Blue Aqueous	High activity: Kinetics similar to Enhanced K-Blue	36 months when stored at 4°C	<ul style="list-style-type: none"> <li>• 100% solvent free</li> <li>• Ideal when working under strict regulatory requirements</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>
Alert® K-Blue Aqueous	High activity: Kinetics similar to K-Blue Aqueous	36 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Clearly indicates when substrate and acid stop have been added to the wells (turns pink)</li> <li>• Ideal for sandwich-based HRP assays</li> <li>• 100% solvent free</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>
Custom TMB	Lower activity: 20–30% Reduced activity of Enhanced K-Blue	36 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Ideal for assays requiring a less active substrate</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>

#### Additional HRP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes
ABTS Substrate	HRP-Microwell	36 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High consistency between lots</li> <li>• RTU (ready-to-use)</li> <li>• Produces a soluble blue-green reaction</li> <li>• Results are read at 405/410 nm</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>
TMB Membrane Substrate	HRP-Membrane	48 months when stored at 2–8°C 24 months when stored at 15–25°C	<ul style="list-style-type: none"> <li>• High consistency between lots</li> <li>• RTU (ready-to-use)</li> <li>• Produces an insoluble, permanent dark blue reaction</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>

## AP Substrates

### Microwell Substrates

K-Gold® Substrate is a one-bottle stabilized chromogenic substrate for use with alkaline phosphatase based immunoassays. K-Gold Substrate utilizes the substrate p-nitrophenyl-phosphate (PNPP), which reacts with alkaline phosphatase to produce the chromophore p-nitrophenol. Neogen's ready-to-use K-Gold formula does not require mixing of additional ingredients or stabilizing agents, making it an ideal formula for kit manufacturers.



### Microwell AP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes
K-Gold PNPP Substrate	AP-Microwell	30 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High Activity</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> <li>• 20 L (1 x 20 L)</li> </ul>

### Membrane AP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes
BCIP/NBT (Blue) Substrate	AP-Membrane	36 months when stored at 2–25°C	<ul style="list-style-type: none"> <li>• Produces an insoluble, permanent dark blue reaction</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 25 mL</li> <li>• 100 mL</li> <li>• 1 L</li> <li>• 5 L (1 x 5 L)</li> </ul>
BCIP/NBT (Purple) Substrate	AP-Membrane	36 months when stored at 2–25°C	<ul style="list-style-type: none"> <li>• Produces an insoluble, permanent dark purple reaction</li> <li>• RTU (ready-to-use)</li> <li>• Low background</li> <li>• High consistency between lots</li> </ul>	<ul style="list-style-type: none"> <li>• 25 mL</li> <li>• 100 mL</li> <li>• 1 L</li> <li>• 5 L (1 x 5 L)</li> </ul>

### Reagents for Immunoassays

Product	Application	Shelf Life	Product Features	Available Sizes
Red Stop Solution	HRP-Microwell	12 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Produces a dark purple-pink color for a minimum of 2 hours when added to the wells</li> <li>• Non-acidic solution</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> </ul>
EIA Buffer	HRP-Microwell	12 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Dilutes enzyme conjugates, standards and samples</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 500 mL</li> <li>• 1 L</li> </ul>
Wash Buffer	HRP-Microwell	12 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Washes all unbound enzyme conjugate, samples and standards from microplates</li> <li>• Concentrated (10x) buffer</li> </ul>	<ul style="list-style-type: none"> <li>• 500 mL</li> <li>• 1 L</li> </ul>

## Chemiluminescent Substrates

### Microwell and Membrane HRP Applications

Neogen offers multiple luminol-based chemiluminescent substrate formulations for microwell and membrane applications for the ultimate detection of horseradish peroxidase. Neogen's substrates offer sensitivity capabilities from picogram to femtogram.

#### Chemiluminescent HRP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes
Chemiluminescent Ultra	Microwell and Membrane	18 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Maximum sensitivity</li> <li>• Luminol-based chemistry</li> <li>• Two component system</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL kit (2 X 100 mL)</li> <li>• 500 mL kit (2 X 250 mL)</li> <li>• 1 L kit (2 X 500 mL)</li> </ul>
Chemiluminescent Elite Plus	Microwell and Membrane	18 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High sensitivity</li> <li>• Luminol-based chemistry</li> <li>• Two component system</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL kit (2 X 100 mL)</li> <li>• 500 mL kit (2 X 250 mL)</li> <li>• 1 L kit (2 X 500 mL)</li> </ul>
Chemiluminescent Elite	Microwell and Membrane	18 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High sensitivity</li> <li>• Luminol-based chemistry</li> <li>• Two component system</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL kit (2 X 100 mL)</li> <li>• 500 mL kit (2 X 250 mL)</li> <li>• 1 L kit (2 X 500 mL)</li> </ul>

### Microwell and Membrane AP Applications

Neogen also offers ultra-sensitive 1,2-dioxetane-based chemiluminescent formulations for the detection of alkaline phosphatase in microwell and membrane applications. Neogen's substrates offer sensitivity capabilities to the attogram level.

#### Chemiluminescent AP Substrates

Product	Application	Shelf Life	Product Features	Available Sizes
Chemiluminescent AP Select Plus 450	Microwell and Membrane	24 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Maximum sensitivity</li> <li>• Dioxetane-based chemistry</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> </ul>
Chemiluminescent AP Select Plus 540	Microwell and Membrane	24 months when stored at 4°C	<ul style="list-style-type: none"> <li>• Maximum sensitivity</li> <li>• Dioxetane-based chemistry</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> </ul>
Chemiluminescent AP Select 450	Microwell and Membrane	24 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High sensitivity</li> <li>• Dioxetane-based chemistry</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> </ul>
Chemiluminescent AP Select 540	Microwell and Membrane	24 months when stored at 4°C	<ul style="list-style-type: none"> <li>• High sensitivity</li> <li>• Dioxetane-based chemistry</li> <li>• RTU (ready-to-use)</li> </ul>	<ul style="list-style-type: none"> <li>• 200 mL</li> <li>• 500 mL</li> <li>• 1 L</li> </ul>



## Colorimetric Substrates

### Microwell Substrates – HRP

#### Enhanced K-Blue Substrate

200 mL.....	308175
500 mL.....	308176
1 L.....	308177
20 L (1 x 20 L).....	308257

#### Custom K-Blue Substrate

200 mL.....	309175
500 mL.....	309176
1 L.....	309177
20 L (1 x 20 L).....	309257

#### K-Blue Aqueous Substrate

200 mL.....	331175
500 mL.....	331176
1 L.....	331177
20 L (1 x 20 L).....	331257

#### Alert K-Blue Aqueous Substrate

200 mL.....	334175
500 mL.....	334176
1 L.....	334177
20 L (1 x 20 L).....	334257

#### ABTS Substrate

25 mL.....	310189
100 mL.....	310247
1 L.....	310177
5 L (1 x 5 L).....	310260

### Membrane Substrates – HRP

#### TMB Membrane Substrate

25 mL.....	311189
100 mL.....	311247
1 L.....	311177
5 L (1 x 5 L).....	311260

### Microwell Substrates – AP

#### K-Gold PNPP Substrate

200 mL.....	303175
500 mL.....	303176
1 L.....	303177
20 L (1 x 20 L).....	303257

### Membrane Substrates – AP

#### BCIP/NBT (Blue) Membrane Substrate

25 mL.....	314189
100 mL.....	314247
1 L.....	314177
5 L (1 x 5 L).....	314260

#### BCIP/NBT (Purple) Membrane Substrate

25 mL.....	315189
100 mL.....	315247
1 L.....	315177
5 L (1 x 5 L).....	315260

## Reagents for Immunoassays

### Red Stop Solution

200 mL.....	301474
500 mL.....	301475
1 L.....	301476

### EIA Buffer

500 mL.....	301276
1 L.....	301277

### Wash Buffer

500 mL.....	301176
1 L.....	301177

## Chemiluminescent Substrates

### Microwell and Membrane – HRP

#### Chemiluminescent Ultra

200 mL kit (2 X 100 mL).....	325175
500 mL kit (2 X 250 mL).....	325176
1 L kit (2 X 500 mL).....	325177

#### Chemiluminescent Elite Plus

200 mL kit (2 X 100 mL).....	324175
500 mL kit (2 X 250 mL).....	324176
1 L kit (2 X 500 mL).....	324177

#### Chemiluminescent Elite

200 mL kit (2 X 100 mL).....	323175
500 mL kit (2 X 250 mL).....	323176
1 L kit (2 X 500 mL).....	323177

### Microwell and Membrane - AP

#### Chemiluminescent AP Select Plus 450

200 mL.....	326175
500 mL.....	326176
1 L.....	326177

#### Chemiluminescent AP Select Plus 540

200 mL.....	327175
500 mL.....	327176
1 L.....	327177

#### Chemiluminescent AP Select 450

200 mL.....	328175
500 mL.....	328176
1 L.....	328177

#### Chemiluminescent AP Select 540

200 mL.....	329175
500 mL.....	329176
1 L.....	329177



## **Colorimetric Substrates for:**

Microwell and Membrane HRP

Microwell and Membrane AP

## **Chemiluminescent Substrates for:**

Microwell and Membrane HRP

Microwell and Membrane AP

## **Reagents for Immunoassays**



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