

Common to all Crumlin-made products (alkaline phosphatase, glucose oxidase and urease)*Where is it manufactured?*

The material is manufactured in our ISO 13485:2016 compliant facility in Crumlin, South Wales, UK.

Horseradish peroxidase and Ribonuclease are made at the ISO13485:2016 complaint facilities in Crumlin, South Wales, UK and Cape Town, South Africa

What to do if my product passes its best before date?

Some products can have their best before date extended beyond that stated on the ADS which arrives with the product. Contact technicalsupport@bbisolutions.com to check if the date can be extended.

What applications are the IVD enzymes commonly used in?

- Biosensors
- Immunoassays
- Clinical chemistry
- Molecular diagnostics

Alkaline Phosphatase*What is Alkaline Phosphatase made from?*

BBI Solutions' Alkaline Phosphatase (ALP) is extracted from bovine intestine then purified using multiple precipitation, fractionation, chromatography and filtration steps.

What can it be used for?

ALP is commonly used as a label in immunoassays such as ELISA, and in blotting and histochemistry. Once conjugated to antibodies, antigens, or streptavidin, its low backgrounds and linear reaction rate enables increased sensitivity over extended incubation times. It can be used with a variety of substrates producing precipitated or soluble chromogens, or with chemiluminescent and fluorogenic substrates for enhanced sensitivity.

How is it supplied?

Our high activity conjugation grade products are supplied as glycerol solutions.

How do I store and transport the material?

We recommend you store the material between 2 - 8°C. This product is shipped at ambient temperature.

Which is the most popular grade to use as a marker enzyme in ELISA?

BBI grade ALPI12G, which has the highest specific activity currently available.

What are the key features and benefits?

- Guaranteed quality: ALP is manufactured under our Quality System compliant with ISO 13485:2015, with stringent QC analysis for every batch.
- Highest activity ALP on the market: >2000 glycine U/mg protein and >6000 DEA U/mg protein, for some batches we achieve >2300 and >7000.
- High stability: Less than 10% activity lost over 48 months.

- Proven performance: We have benchmark data demonstrating proven performance against the competition.
- Multiple grades: We offer various ALP products with defined activities, enabling you to select an enzyme which best suits your application.
- Bulk extraction and purification capability: Our optimised large-scale manufacturing processes produce high volumes of all grades.

What volume of material can I buy?

We typically pack to order and can supply any quantity from 10ku to >10,000ku.

Glucose Oxidase

What is Glucose Oxidase made from?

BBI's Glucose Oxidase is produced from large-scale fermentation of the fungus *Aspergillus niger*. The crude fermentation liquor is purified using multiple precipitation, fractionation, chromatography, and filtration steps.

What can it be used for?

Glucose Oxidase is used in liquid and powder glucose laboratory reagents, urine test strips, colorimetric blood glucose strips and for blood glucose monitoring in biosensors.

How is it supplied?

Our final products are lyophilised powders.

How do I store and transport the material?

We recommend you store the material desiccated at -15°C or below. This product is shipped at ambient temperature.

What are the key features and benefits?

- Guaranteed quality: Glucose Oxidase is manufactured under our Quality System compliant with ISO 13485:2015, with stringent QC analysis for every batch.
- Greater accuracy: Highest levels of activity and purity to increase speed and accuracy
- Choice and flexibility: Multiple grades and custom preparations available for specific applications to optimise your assay at reduced cost
- Proven performance: Enabling strip manufacturers to comply with the latest accuracy guidelines (+/- 15%)
- Batch to batch reproducibility and consistency: Optimised and controlled manufacturing procedures to ensure reproducibility and consistency – essential in high volume strips
- High manufacturing capacity: BBI has bulk manufacturing capabilities

What volume of material can I buy?

We typically pack to order and can supply any quantity from 1MU to >1,000MU.

Horseradish Peroxidase

How is Horseradish Peroxidase produced?

BBI's Peroxidase is extracted from horseradish roots then purified using multiple precipitation, fractionation, chromatography and filtration steps.

What can it be used for?

Horseradish Peroxidase (HRP) is used in a wide range of liquid clinical chemistry reagents, dry powder reagents and test strips. It is also commonly used as a label in immunoassays such as ELISA, and in blotting and histochemistry. Once conjugated to antibodies, antigens, or streptavidin, its rapid turnover rate gives high sensitivity over short incubation times.

How is it supplied?

Our final products are lyophilised powders.

How do I store and transport the material?

We recommend you store the material desiccated at -15°C or below. This product is shipped at ambient temperature.

What are the key features and benefits?

- **Guaranteed quality:** HRP is manufactured under our Quality System compliant with ISO 13485:2015, with stringent QC analysis for every batch.
- **Controlled and consistent supply:** We have developed close relationships with horseradish growers to ensure planned purchase of specially selected and cultivated horseradish roots
- **High isozyme C content:** Material available above 90%
- **High activity levels:** ~280 U/mg
- **Highly available amino groups:** For clean conjugation
- **Bulk extraction capability:** Our optimised large-scale manufacturing processes produce high volumes of both clinical chemistry and immunoassay grades

What volume of material can I buy?

We typically pack to order and can supply any quantity from mg to kg depending on the grade required.

Ribonuclease (RNase)

How is Ribonuclease produced?

BBI's Ribonuclease is extracted from bovine pancreas using multiple precipitation, fractionation, chromatography and filtration steps.

What can it be used for?

Ribonuclease can be used in the following applications:

- In isolation of DNA for RNA-free DNA, especially plasmid DNA

- Structural studies of RNA
- The depolymerisation of viscous biological suspensions, rendering RNA-free solutions

How is it supplied?

Our final products are lyophilised powders.

How do I store and transport the material?

We recommend you store the material desiccated at -15°C. This product is shipped at ambient temperature.

What are the key features and benefits?

- Guaranteed quality: RNase is manufactured under our Quality System compliant with ISO 13485:2015, with stringent QC analysis for every batch.
- Proven performance: In DNA extraction kits
- Batch-to-batch reproducibility: Enabling consistent formulations
- Bulk extraction and purification capability: Our optimised large-scale manufacturing processes produce high volumes of purified RNase
- Secure supply: We have direct relationships with our raw material suppliers to ensure a secure supply chain

What volume of material can I buy?

We typically pack to order and can supply any quantity from g to kg.

Urease

What is Urease made from?

BBI's urease is obtained from specially selected and cultivated jack beans. The enzyme is extracted from the beans then purified using multiple precipitation, fractionation, chromatography and filtration steps.

What can it be used for?

Urease is used in liquid and powder urea laboratory reagents, and biosensors. It can be used in the determination of urea in biological fluids (couple with GLDH, in the ultraviolet method). Urease can also be used as an enzymes label in ELISA.

How is it supplied?

Our final products are lyophilised powders.

How do I store and transport the material?

We recommend you store the material desiccated at -15°C or below. This product is shipped at ambient temperature.

What are the key features and benefits?

- Guaranteed quality: Urease is manufactured under our Quality System compliant with ISO 13485:2015, with stringent QC analysis for every batch.

- Proven performance: In liquid and powder reagents
- High purity: For biosensor applications
- Bulk capability: Manufacturing in high volumes to reduce cost
- Batch-to-batch reproducibility: Enabling consistent formulations
- Secure supply: We have direct relationships with our raw material suppliers to ensure a secure supply chain

What volume of material can I buy?

We typically pack to order and can supply any quantity from 1MU to >1,000MU.