

## PaHnL CLEA

- ***Prunus amygdalus hydroxynitrile lyase***
- **R-specific**
- **Immobilized as Cross-Linked Enzyme Aggregate**



The oxynitrilase from *Prunus amygdalus* (almonds, PaHnL) catalyzes the (R)-selective hydrocyanation of aldehydes producing enantiopure cyanohydrins. These cyanohydrins are valuable building blocks in many synthetic routes towards fine chemicals and pharmaceutical products. The proprietary CLEA methodology has been applied to immobilize this enzyme.

### **CLEA Methodology**

Our proprietary methodology to immobilize enzymes as Cross-Linked Enzyme Aggregates (CLEAs) consists of covalent cross linking of precipitated enzymes. This efficient and economically attractive method yields immobilized biocatalysts that do not include support material and therefore have a very high activity per unit volume.

## Product Properties

<b>Product Type:</b>	Immobilized form of oxynitrilase from <i>Prunus amygdalus</i> as a Cross-Linked Enzyme Aggregate (CLEA)
<b>Formulation:</b>	powder
<b>Enzyme Type:</b>	Oxynitrilase, Hydroxynitrile lyase, EC 4.1.2.10
<b>Natural Reaction:</b>	Dehydrocyanation as plant protection mechanism
<b>Substrate Specificity:</b>	(R)-specific
<b>Typical activity:</b>	10.000 units/g*

\* 1 unit will catalyse the hydrocyanation of 1 $\mu$ mol/h cinnamaldehyde in a biphasic aqueous/diisopropyl ether reaction system at 25°C and pH 5.5

# *Specific Product Specification*

## *PaHnL CLEA*

### *Applications*

Oxynitrilases find their application mainly in the synthesis of high-value chiral cyanohydrins for the fine chemical and pharmaceutical industry. These cyanohydrins are useful intermediates for the synthesis of enantiopure hydroxy acids and hydroxy amides.

### *Storage and Stability*

The PaHnL CLEA® is best stored in a cool and dry environment. Storage at 4 °C is recommended. Under these conditions the PaHnL CLEA® retains its activity for at least 12 months.

### *Formulations*

PaHnL CLEA is available as a powder.

### *Pricing and Availability*

PaHnL CLEA is available in the formulations that are described before. The available quantities range from 10 kU to giga unit scale. Please inquire for availability, lead times and prices.

### *References*

1. Sheldon, Roger A; Sorgedragger, Menno; Janssen, Michiel H. A. **Use of Cross-linked Enzyme aggregates (CLEAs) for performing biotransformations**. *Chimica oggi, Chemistry Today* 2007, 25(1), 48-52.
2. Sheldon, R. A; Schoevaart, R; Van Langen, L.M. **Cross-linked enzyme aggregates (CLEAs): A novel and versatile method for enzyme immobilization (a review)**. *Biocatalysis and Biotransformation* 2005, 23(3/4), 141-147.
3. Sheldon, Roger A; Schoevaart, R; van Langen, Luuk M. **CLEAs: An effective technique for enzyme immobilization**. *Specialty Chem.* 2003, July/August, 40-42.
4. Cao, Linqiu; van Langen, Luuk; Sheldon, Roger A. **Immobilised enzymes: carrier-bound or carrier-free?** *Curr. Opin. Biotechnol.* 2003, 14, 387-394.