

## **Esterase BS2 CLEA**

- ***Bacillus subtilis* Esterase BS2**
- **Active on tertiary alcohol groups**
- **Immobilized as Cross-Linked Enzyme Aggregate**



***Bacillus subtilis* esterase 2 is a carboxylic ester hydrolase that accepts tertiary alcohol groups. It can be applied to produce optically active alcohols or carboxylic acids via ester hydrolysis.**

**The proprietary CLEA<sup>®</sup> methodology has been applied to create a highly active immobilized preparation of this esterase.**

### ***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 Esterase BS2, Esterase from <i>Bacillus subtilis</i> . Immobilized as a Cross-Linked Enzyme Aggregate (CLEA).
<b>Formulation:</b>	Suspension in buffer
<b>Enzyme Type:</b>	Esterase, Carboxylic ester hydrolase, EC 3.1.1.3
<b>Natural Reaction:</b>	Ester hydrolysis
<b>Substrate Specificity:</b>	Accepts tertiary alcohols
<b>Typical activity:</b>	1000 units/ml*

\* 1 unit will catalyse the formation of 1µmol butyric acid from Ethylbutyrate at 40°C and pH 7.5

# *Specific Product Specification*

## *Esterase BS2 CLEA*

### *Applications*

**Esterases hydrolyze esters to the corresponding alcohol and acid. In organic synthesis they are used in the preparation of enantiopure alcohols or acids via ester synthesis or hydrolysis. BS2 esterase is known to be active on tertiary alcohols.**

### *Storage and Stability*

**The Esterase BS2 CLEA® is best stored in a cool and dry environment. Storage at 4 °C is recommended. It is recommended to keep the CLEA in suspension upon storage.**

### *Formulations*

**Esterase BS2 CLEA is available as a suspension in phosphate buffer.**

### *Pricing and Availability*

**Esterase BS2 CLEA is available with a typical activity as described in the product properties. 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.