

TLL CLEA

- ***Thermomyces lanuginosus* lipase**
- **Thermophilic origin**
- **Immobilized as Cross-Linked Enzyme Aggregate**



***Thermomyces lanuginosus* lipase (TLL) is a commercially available lipase from a thermophile source. Lipases catalyze the hydrolysis of triglycerides. Lipase from *Thermomyces lanuginosus* is non-specific and shows a high thermal stability. 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

Product Type:	Immobilized form of lipase from <i>Thermomyces lanuginosus</i> as a Cross-Linked Enzyme Aggregate
Formulation:	Powder, CLEA-ST: Standard; CLEA-OM: Organic medium
Enzyme Type:	Lipase, Triacylglycerol hydrolase, EC 3.1.1.3
Natural Reaction:	Hydrolysis of fats and oils
Substrate Specificity:	Non-specific
Typical activity:	CLEA-ST: 50.000 units/g CLEA-OM: 400.000 units/g*

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

CLEA® is a registered trademark of CLEA Technologies BV.

Specific Product Specification

RmL CLEA

Applications

Lipases in general are used in a wide variety of applications in the fine chemistry, laundry and food industry. In organic synthesis they are used in the production of enantiopure alcohols, amines or acids via ester hydrolysis in aqueous media or via direct esterification in organic media.

Storage and Stability

The TLL CLEA® is best stored in a cool and dry environment. Storage at 4 °C is recommended.

Formulations

TLL CLEA is available as a powder. The standard CLEA and a formulation that is optimized for use in organic media or highly apolar substrates.

TLL CLEA-ST: Standard formulation

TLL CLEA-OM: Optimized for use in organic media or highly apolar substrates.

Pricing and Availability

TLL CLEA is available with the typical activity described in the product properties. The available quantities range from 1 MU 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.