



# custom enzymes

## **CUSTOM E – CELL**

**Sugar extraction from Biomass**

### **The Enzymes blend for PRETREATED Ligno - Cellulosic Biomass Hydrolysis**

CUSTOM E - CELL is a blend of selected enzymes to hydrolyse Cellulose and Hemicellulose components of pre-treated Biomass. The optimal application and function of this enzymes blend greatly depends on the composition of the various fractions (Cellulose, Hemicellulose and Lignin) in the treated Biomass substrate. Experiments should be conducted to determine dosage of CUSTOM E - CELL and pre-treatment method which will work best on a specific feedstock.

**Note:** The pre-treatment method can create inhibiting products that can reduce the performance of the enzyme, resulting in lower cellulose conversion and/or increased enzyme dosage. Lignin and Xylo-oligomer released during the pre-treatment process can interfere with enzymatic performance by binding irreversibly to the enzymes or by blocking enzyme access to the substrate.

#### **Advantages:**

Unique Enzymatic combination to take care of variation in types of feedstock and variation in composition.

Accelerates SSF process with higher Carbohydrate hydrolysis during saccharification and fermentation conditions.

#### **Method of application:**

CUSTOM E – CELL is in powder form. It should be weighed as per dosage required and added in the slurry directly with continuous agitation.

CUSTOM E – CELL can be applied directly in slurry ready for hydrolysis and fermenters.

#### **Input:**

30 - 50 Kg per tonne of dry Biomass basis during hydrolysis stage and/or in fermenter.

Optimum temperature range: 45 to 55 degree centigrade

Optimum pH range: 4.5 to 5.5

#### **Output:**

Essential oils can be extracted if using botanicals as the feedstock

Based on an average of 65% Cellulose content in the plant waste with a 10% loss you could expect to extract 450 Kilograms of sugar syrup per tonne of plant waste processed which contains 55% cellulosic sugars.

This free sugar syrup can be further Distilled into Ethanol via the steam distillery

**Storage and shelf life:**

Store it in cool and shaded place and avoid keeping it in direct sunlight. Enzyme dust may cause irritation when inhaled. Unnecessary contact with product should be avoided. The shelf life of CUSTOM E – CELL under recommended conditions is for the period of 1 year.

**Packaging:**

CUSTOM E – CELL is available in standard packs of 25 Kg. The packing can also be customised as per the requirements.