

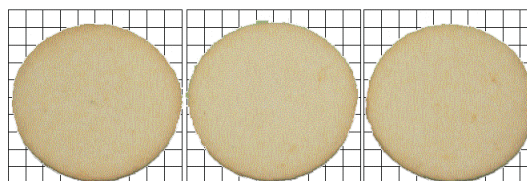
## Sternzym BK 5020

### Enzyme preparation for biscuit and cracker production

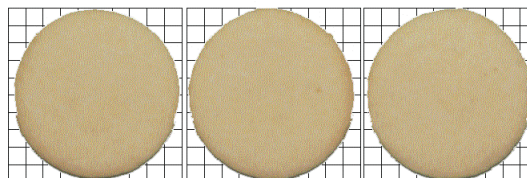
<b>Characteristics</b>	Phospholipid activated bacterial protease. The enzyme reduces the protein strength, thus decreasing dough viscosity and resistance to stretching. Relaxation times can be shortened or omitted without risking deformation by shrinkage (see Figure 1).
<b>Origin</b>	Non-pathogenic, non-gene-modified <i>Bacillus subtilis</i> strain (GRAS Status)
<b>Activity</b>	Bacterial protease 85-110 u/g (casein hydrolysis, pH 8.0) pH optimum: 6 – 8 (see Fig. 2 and 3) Temperature optimum: 40 – 60 °C (see Fig. 4 and 5)

**Figure 1:**  
**Comparison of**  
**cookies baked with**  
**and without**  
**Sternzym BK 5020**

Reference  
 without enzyme



with Sternzym  
 BK 5020



#### Applications

- Biscuit and cracker production

#### Properties

- Gluten weakening
- Reduces energy input during kneading
- Reduces resting time
- Imparts better chewing characteristics
- Reduces hairline cracks
- Enhances structure and browning

#### Dosage

30 - 70 g on 100 kg flour. Particular processes may require as much as 120 g or as little as 15 g. The optimum dosage has to be established by baking trials (see also page 2, bottom).

#### Storage

Store cool and dry; activity loss on storage less than 10 % per year

#### Packaging

Cardboard box or multiply paper bag with PE liner, 20 kg net.

## STERNZYM BK 5020 - Neutral bacterial protease from *Bacillus subtilis*

### Temperature/pH activity and stability data

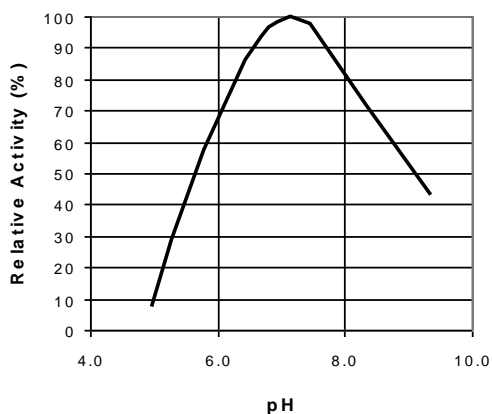


Fig. 2: pH-activity curve for STERNZYM BK 5020

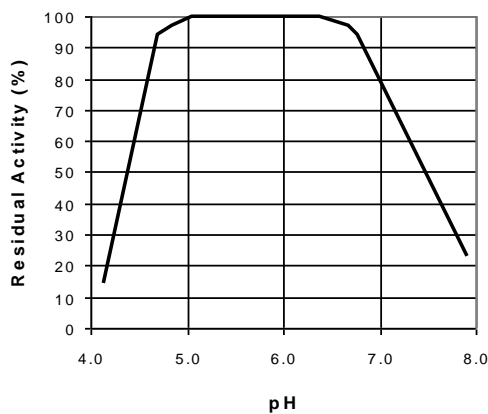


Fig. 3: pH-stability curve for STERNZYM BK 5020

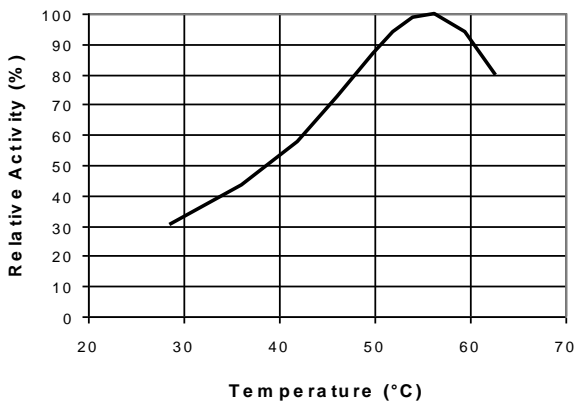


Fig. 4: Temperature-activity curve for 120 STERNZYM BK 5020

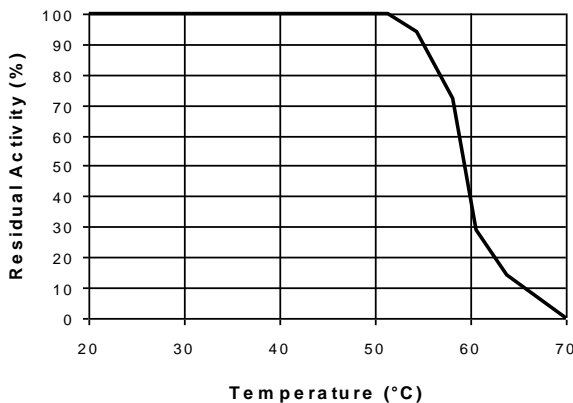


Fig. 5: Temperature-stability curve for STERNZYM BK 5020

#### Optimization

The exact dosage has to be established in production trials. We recommend to start with a low dosage of the enzyme, approx. 10 g per 100 kg, and to increase the addition in iterative steps of 5 or 10 g until the desired effect is obtained. As the enzyme activity improves with increasing water availability and temperature, minor modifications of the process should be considered if the desired effects cannot be achieved.