

## **ALPHA ACETOLACTATE DECARBOXYLASE (ALDC)**

### **1 DESCRIPTION**

Alpha Acetolactate Decarboxylase (ALDC) is produced from a submerged culture of *Bacillus subtilis*. ALDC caused the direct decarboxylation of alpha acetolactate to acetoin, thus avoiding the production of diacetyl.

- ◆ Reduces diacetyl production
- ◆ Significantly reduces maturation times
- ◆ More efficient vessel utilisation.
- ◆ Improves beer quality

### **2 STORAGE AND SHELF LIFE**

- Store in cool conditions, away from direct sunlight
- Keep containers sealed when not in use
- Maximum storage temperature - 10°C
- Recommended storage temperature - 1 to 5°C
- Minimum storage temperature - 1°C
- Do not allow the product to freeze
- The shelf life at the recommended storage temperature is >6 months from date of manufacture
- Under ideal conditions, 95% of enzyme activity will be retained for a period of at least 6 months, after which time a loss may be expected of ca. 1 - 2% per month

### **3 PACKAGING**

**1 kg  
Bottle**

### **4 USING THE PRODUCT**

#### **(a) When used in the initial fermentation:**

The product can be mixed in with the cold wort at the beginning of fermentation at a rate of 1.0 - 1.5kg / 100 tonnes of wort (1-5gm per hectolitre) which is equal to 10-15ppm. To ensure even distribution of the enzyme it is recommended that it be added as the wort is being run into fermenter.

#### **(b) To reduce diacetyl produced during fermentation:**

When added post-fermentation rates of 4-10Kg / Tonne (0.4 - 1.0gms per hectolitre) should be used. The enzyme should be added to the bottom of the vessel and then back flush with carbon dioxide for 5-15 minutes to ensure adequate mixing.

(c) **Optimum Conditions of Use:**

The optimum pH for the product lies between 5 and 7; the optimum temperature lies between 25 and 40°

**5 GUIDELINES FOR USE**

**DO**

- Check that the product is within its shelf life before use
- Check that the product has been stored correctly

**6 TECHNICAL SUPPORT**

For Health & Safety information on this product, please see the Materials Safety Data Sheet (MSDS)

For support and advice on the use of this product, please call or e-mail our Technical Administrator:-

Telephone:- + 44 (0)115 978 5494

E-Mail:- laboratory@murphyandson.co.uk

**7 SPECIFICATION**

Composition	Alpha Acetolactate Decarboxylase (ALDC) is produced from a submerged culture of <i>Bacillus subtilis</i> .	
Appearance	Light brown liquid with a slight opalescence	
Odour	Slight odour	
<u>Activity</u>		
ALDC Units (U/g)		>2000
pH		5.5 – 7.0
<u>Heavy Metals</u>		
Total Heavy Metals		<4.5 ppm
Lead		<10 ppm
Arsenic		<4 ppm
Mercury		<10 ppm
<u>Microbiological</u>		
Total Plate Count (cfu/ml)		< 3000
Coliforms (/100ml)		<30
Salmonella		Negative in 25 g

ALDC complies with the current FAO/WHO and Food Chemical Codex recommended specifications for food grade enzymes.

**8 REFERENCE**

Product	ALDC
Authorised by	Q.A. Chemist
Issue No.	1.0

Product Code	ALDC
Formulation	
Date	01/09/09