

Natumalt™

NATUMALT is food grade mashing enzymes blend that contains selected and controlled activities to provide consistent malt – like performance in the brewhouse. These activities include bacterial Alpha Amylase, Beta – Amylase, Neutral protease and Beta glucanase for use in the brewing industry.

- ▶ **NATUMALT** can be used when a significant level of adjuncts is used or any situation where the malt level is inadequate or inconsistent to give the barley malting process and the plant enzymes that result can be adequate to accomplish conversion of the mashing substrate.
- ▶ When unmalted grain exceeds 10-15% of the grist ,supplementation with exogenous enzymes such as **NATUMALT** will likely be required to ensure consistency.

Beneficiary Function:

- Maximum extract yield with improved wort quality even in case of use of unmalted grains as an adjuncts due to efficient break down of starch, protein & glucans.
- Protease as part of these complex blend improves the alpha amino nitrogen level as well as soluble protein content which leads to nutritional improvement of wort, making it more fermentable.
- Significant breakdown of malt beta glucan, & other complex polysaccharides results in better lautering avoiding chances of bed choking, improves wort run-off time.
- Break down of beta glucan will be helpful in further brewing operation like filtration.



Product Application:

NATUMALT may require a proteolytic stand of 20-90 minutes ,depending on degree of malt modification and weight of un malted cereal. The temperature is raised to 63-65°C at a rate of 1°C per minute, and held for approximately 1 Hour to allow for starch gelatinization & saccharification this is followed by raising the temperature to 70-80°C to complete liquefaction, wort separation may then proceed.

Product Characteristics:

Product Composition	Blend of essential enzymes & loyal ingredients
Occurrence Powder	Powder
Appearance	Brownish



Product Operating Parameters:

Liquor to grist ration	3:1 to 5:1
Temperature	60-80°C
Proteolytic stand	20 - 90 minute
Starch gelatinization & Saccharification rest	60 minute approximately
Temperature rising rate	1°C Per minute

Dose:

2.0 – 2.5 Kg per ton of barley (Unmalted adjunct solids)

Packaging:

HDPE drums 25 Kg packaging sizes available

Product Shelf Life:

Below 25°C	Minimum shelf life of six months
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Product Handling:

- ▶ Enzymes are proteins. Inhalation of dust or aerosols may induce sensitization and may cause allergic reactions in sensitized individuals. Some enzymes may irritate the skin, eyes and mucous membranes upon prolonged contact. The product may create easily inhaled aerosols if splashed or vigorously stirred.
- ▶ Spilled product may dry out and create dust. Spilled material should be flushed away with water. Avoid splashing. Left over material may dry out and create dust.
- ▶ Wear suitable protective clothing, gloves and eye/face protection. Contaminated cloths should be properly washed.
- ▶ MSDS is supplied with the product. Follow MSDS safety instructions for more details.



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