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# TY-PURE

TURBO YEAST

A high purity active dried yeast formulated with optimized nutrition for fermentation of neutral flavour washes from refined sugar up to 14 % ABV.

## PRODUCT DESCRIPTION & FUNCTION

TY-Pure is based on a low-congener, non-diastatic active dried yeast producing minimal fusel oils, esters and other fermentation by-products, minimizing flavour and aroma contribution in the end product – formulated with a complete, chemically-defined nutrient complex, TY-Pure is optimised for neutral character sugar wash fermentations up to approx. 14 % ABV.

Although designed for use with highly refined sugar substrates such as glucose, sucrose, and invert sugar syrup, TY-Pure can be used with any fermentable sugar substrate for production of high purity alcohol wash up to ~14 % ABV.

The nutrient complex in TY-Pure contains all essential macro and micro-nutrients required for healthy fermentation, including nitrogen (urea-free source), phosphate, magnesium, B vitamins and trace minerals. TY-Pure does not contain yeast extract or

other non-chemically defined materials which can taint the quality of alcohol used for clean flavour applications.

### Recommended For

Fermentation of clean and neutral character alcohol base for use in hard seltzers and FMB/CMB hard soda production; fermentation of alcohol wash for spirit alcohol distillation.

### Organoleptic Qualities

Wash fermented with TY-Pure typically presents moderate levels of fruity and green apple notes along with lower levels of citrus and yeast notes.

**Note:** for use in making ultra-clean seltzer bases, it is optional but beneficial to further clean and polish flavour and aroma by utilising post-fermentation processing techniques such as carbon filtration or use of other adsorbents.

# TECHNICAL CHARACTERISTICS

<b>Yeast Classification</b>	Saccharomyces bayanus
<b>Temperature Tolerance</b>	10-30°C / 50-86°F (optimum 20-25°C / 68-77°F)
<b>Killer Factor</b>	Positive
<b>Alcohol Tolerance</b>	Approx. 14% ABV
<b>SO<sub>2</sub> production</b>	Low
<b>Viable Yeast Cells</b>	> 1.6 x 10 <sup>9</sup> cfu/g
<b>Total bacteria</b>	< 2 x 10 <sup>4</sup> cfu/g
<b>Wild Yeast</b>	< 2 x 10 <sup>4</sup> cfu/g
<b>Mould</b>	< 2 x 10 <sup>2</sup> cfu/g
<b>Coliforms</b>	< 20 cfu/g
<b>Pathogens</b> (Salmonella, E. coli etc)	Absent in 25 g
<b>Lead</b>	< 3 mg/kg
<b>Arsenic</b>	< 2.5 mg/kg
<b>Heavy Metals</b> (as Pb)	< 10 mg/kg
<b>GMO Status</b>	GMO Free

## DOSAGE & APPLICATION

**Pitch rates:** suggested rates are as follows (optimisation through bench trials is recommended):

<b>Target ABV for fermentation:</b>	5%	8%	10%	12%	14%
<b>TY-Pure Tubro Yeast dosage:</b>	1.8 g/L	2.5 g/L	3.0 g/L	3.6 g/L	4.0 g/L

## Pitching Method

TY-Pure requires agitation to dissolve nutrient salts so cannot be pitched directly without mixing facility. For indirect pitching, pre-mix with 10x times its weight of water at 25-30°C (77- 86°F) and mix for 5 minutes before pitching. Note that TY-Pure is not suitable for propagation or post-fermentation recovery for re-use due to nutrient depletion during fermentation.

This product contains granular products of different sizes that will settle out during transportation. To ensure a homogeneous product, it is recommended that a full pack is used for your fermentation. If a part bag is used, homogeneity can be increased by thorough mixing of the pack prior to use.

Full homogeneity cannot be guaranteed if part bags are used.

**Note:** rehydration is only required for pre-dissolving nutrients rather than yeast activation. It is important to minimise contact-time (ideally < 15 minutes) to avoid high nutrient concentrations harming the yeast. Trials may be required to determine impacts of longer contact periods on yeast viability and fermentation kinetics.

## Fermentation Temperature

TY-Pure can tolerate up to 30°C (8°F) but alcohol quality is compromised at this temperature. For optimum performance and quality, it is recommended to ferment at 20-25°C (68-77°F), although it may be possible to minimise SO<sub>2</sub> levels by fermenting at the upper end of this range, i.e. 23-25°C (73-77°F).

## Oxygenation

Oxygenation will help to minimise SO<sub>2</sub> production; as a guide we suggest oxygenation rates starting from 15-20 ppm for ABVs around 5%, up to 40-45 ppm for higher ABVs of up to 14%. Oxygenation rates can be optimised through trials to meet the specific requirements of the application.

## pH Tolerance

TY-Pure ferments optimally at pH 4-6 but can still operate outside of this range (e.g. pH 3-7). It is best practice to monitor pH as it is likely to drop as fermentation progresses. If possible, avoid levels below pH 3.5 to avoid prolonged fermentation times.

## Clarification & Filtration

TY-Pure is a relatively low flocculator so use of high rates of finings agents and/or centrifugation may be required to achieve a clear base. If finings and/or centrifugation are not sufficient, filtration can be used for a fine polish. The average cell diameter of the yeast is > 10 micron – however, due to presence of smaller daughter cells a filter pore size of < 5 micron (absolute rated) may be required for fine filtration.

## PACK SIZES

1000g bags and 25kg poly-lined paper sacks.

## SAFETY

This material is non-hazardous when used as directed. SDS available on request.

## STORAGE

25kg sacks: Store in original, sealed packaging away from direct sunlight. If stored below 10°C / 50°F this product will have a shelf life of up to 24 months. At 20°C / 68°F storage temperature, shelf life will be reduced to 12 months. After opening, re-seal tightly and keep refrigerated below 10°C for 6 weeks.

1000g bags: Store in a cool, dry place away from direct sunlight for a shelf life of 18 months. After opening re-seal tightly and keep refrigerated below 10°C for 2 weeks.