WHC Lab Ltd., Prospect Lower, Newcastle,
Co. Wicklow, Ireland, A63H0K8

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Approved By:	Philip Woodnutt

Material Safety Data Sheet
Einstein Dehydrated Yeast

1. PRODUCT AND COMPANY DETAILS

Product

Name of Product: Einstein

Chemical Name: *Saccharomyces pastorianus*

Chemical Family: Kingdom Fungi, species Saccharomyces pastorianus

Composition: Proteins, nitrogenous substances, sugars, organic acids, DNA, and fat. It has a high concentration of living, functional microorganisms.

Details of the supplier of the safety data sheet

Name of Company: The Wicklow Hops Company t/a WHC Lab
Address: WHC Lab, Prospect Lower, Newcastle, Co. Wicklow, Ireland, A63H0K8

Emergency Contact Numbers

Director - Tony O'Kane: +353 (0)87 948 3590
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Accounts - Judith Moss: +353 (0)86 896 1901

In case of an emergency please contact the local emergency services.

2. HAZARDS

Classification

This product is not classified as dangerous according to CLP Regulation (EC) no 1272/2008.

Other Hazards

Due to cell metabolism, rehydrating Einstein Dehydrated Yeast may release CO_2. It may also release CO_2 if subjected to extremely high temperatures.

3. INGREDIENT COMPOSITION

Components	Cas Registry Number	Concentration	Classification (CLP)
Saccharomyces pastorianus	-	99%	Not classified
Sorbitan monostearate *(Emulsifier E491 - rehydration agent)*	1338-41-6	1%	Not classified

4. FIRST AID PROCEDURES

Description of first aid procedures

Contact with Eyes:	If contact occurs, immediately rinse eyes thoroughly with water for a minimum of 15 minutes.
Contact with Skin:	Use soap and water to wash. When exposed to yeast, some people may experience allergic reactions; in this instance, please contact a dermatologist or other medical provider.
Ingestion:	Consuming too much yeast with a high concentration can result in digestive issues like diarrhea and cramping. In this instance, drink a lot of water.
Inhalation:	In the event of CO_2 release in a closed setting, which occurs when Einstein Dehydrated Yeast interacts with an aqueous solution, remove the individual to fresh air right away and call the local emergency services.

Allergens*

Einstein Dehydrated Yeast does not contain added allergens.
**EU Regulation 1169/2011 (Food Information Regulations) (Annex II)*

Symptoms and effects

Effects both immediate and delayed are further indicated in section 11.

5. FIRE FIGHTING MEASURES

Fire Suppression

Use the appropriate tools or media, such as water, foam, carbon dioxide, or dry powder, if involved in a fire.

Specific risks associated with the substance

There is a low risk of fire and explosion, under typical circumstances for handling, storing, and using the product.
Einstein Dehydrated Yeast can produce CO_2 at extremely high temperatures.
Avoid inhaling combustion fumes.

Advice for fire fighters

Put on self-contained breathing apparatus and safety gear for firefighters, such as boots, gloves, and goggles etc.

6. ACCIDENTAL RELEASE CONTROLS

Safety measures, protective gear, and emergency procedures

Wash with water using gloves, boots, and eye protection. If there is a CO_2 release and you're in a closed space, use ventilation or breathing apparatus.

Environmental precautions

Einstein Dehydrated Yeast is not considered to be environmentally hazardous, but it should be disposed of properly, given its high organic content.

Techniques and supplies for containment and cleanup

In the event of a small or large spill or leak, Einstein Dehydrated Yeast is solid and shouldn't be handled as hazardous waste. It should be removed using a vacuum cleaner or another collection technique.
Rehydrated materials should be sent for sewage treatment after being heavily diluted with water. Einstein Dehydrated Yeast decomposes naturally.

7. HANDLING AND STORAGE

Packaging Materials

Einstein Dehydrated Yeast is available in 500g vacuum-packed silver foil packs.
This material complies with relevant food-contact legislation, including, EU Regulation 1935/2004 (materials intended for contact with food), EU Regulation 1245/2020 (plastic materials intended for contact with food)), EU Regulation 2023/2006 (GMP for materials intended for contact with food), and FDA CFR 21 (174-179) (USA).

Storage and Handling

Storage Conditions: Store at cool to ambient temperatures (ideally 5°C to 15°C), dry, and well-ventilated environment.

Shelf life: 3 years from date of production, if vacuum seal is not broken, and if stored as outlined above.

Handling: Once opened, re-seal to keep out air and water. For best results, store re-sealed packs in a refrigerator (0°C to 10°C) and use promptly.
Please note expiry date on packs prior to opening.

Note: *When added to water or a water solution, Einstein Dehydrated Yeast releases CO_2, especially on substrates high in sugars or starch. Ensure adequate ventilation to keep levels below advised exposure limits.*

Precautions

To prevent fires and explosions: Einstein Dehydrated Yeast has a low fire and explosion risk, avoid dusting workplaces while handling and storing it.

For safe manipulation:
Use air-tight containers. Avoid the container leaking. Control spills and residues by safely destroying them (section 6).

To reduce toxicological risks:
Avoid eating, drinking or smoking while performing the procedure, and wash your hands thoroughly with cleaning supplies after.

8. EXPOSURE CONTROLS

Conditions

When added to water or a water solution, Einstein Dehydrated Yeast releases CO_2, especially on substrates high in sugars or starch; ensure adequate ventilation to keep levels below advised exposure limits.
If the room isn't ventilated after rehydrating, open the door about two minutes beforehand, and wear the oxygen detector.

Controlling the CO_2 levels should be possible with just adequate general ventilation. There is no need for specialized respiratory protection unless access to tanks where fermentation is occurring is necessary.
Staff members must wear dust protective masks if Einstein Dehydrated Yeast is handled roughly as it may rise up dust.

Hazardous thermal (de)composition products: CO_2

Before using this product, a thorough risk assessment should be done to determine the best personal protective equipment for the local environment. Equipment for personal protection should adhere to the applicable EN standard.

9. PHYSICAL, CHEMICAL AND MICROBIOLOGICAL PROPERTIES

Parameter	Unit of Measure	Typical Value	Specification Value
Appearance	-	Fine granules *(typically 3mm particle size)*	-
Powder flow characteristics	-	Free flowing granules	-
Odor	-	Weak characteristic yeast smell	Typical
Color	-	Light brown/beige	Light brown/beige
Solubility	-	Miscible in water & ethanol solutions	-
Dry matter	%	95.4	> 92
Moisture	%	4 to 6	< 8
Total Yeast Plate Count	Cfu/g	1.3×10^{10}	$>10^{10}$
Direct Live Cell Count	Cells/g	1.9×10^{10}	$> 1.9 \times 10^{10}$
Lactic Acid Bacteria	Cfu/g	< 10	$< 10^3$
Acetic Acid Bacteria	Cfu/g	< 10	$< 10^4$
Wild Yeasts	Cfu/g	< 10	$< 10^5$
Moulds	Cfu/g	< 10	$< 10^2$
Coliforms	Cfu/g	< 10	$< 10^2$
Escherichia coli	Cfu/g	Absent in 1 g	Absent in 1 g
Staphylococcus aureus	Cfu/g	Absent in 1 g	Absent in 1 g
Salmonella spp	Cfu/g	Absent in 25 g	Absent in 25 g
Listeria monocytogenes	Cfu/g	Absent in 25 g	Absent in 25 g
Explosive properties:	-	Yeast itself is not explosive	-

10. STABILITY/REACTIVITY

Conditions to avoid

Lack of stirring following rehydration.
Dust is produced by vigorously shaking Einstein Dehydrated Yeast.
High-temperature storage.

Chemical stability

Stable when stored according to recommendations. Chemical stability of this material is guaranteed by the storage and handling conditions.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Toxicity:	Even at high doses, there is no acute toxicity.
Oral:	Large doses may irritate the digestive tract when consumed. For typical industrial handling, the risk is low.
Respiratory:	May irritate the respiratory tract. For typical industrial handling, the risk is low.
Skin irritation:	May irritate skin. For typical industrial handling, the risk is low.
Sensitization:	Possible allergic sensitization.

12. ECOLOGICAL INFORMATION

GMO

Einstein Dehydrated Yeast does not contain genetically modified organisms or materials.

This product is not dangerous to the environment with respect to mobility, persistency and degradability, bio-accumulative potential, aquatic toxicity, and other data relating to ecotoxicity.

13. DISPOSAL

No special disposal method required, except to be in accordance with all local, state, provincial, and federal regulations when disposing of materials.

14. TRANSPORT

Sea:	Applicable
Road/Rail:	Applicable
Air:	Applicable

15. REGULATORY INFORMATION

This product is used in the food industry and contains no health-hazardous substances.

16. OTHER INFORMATION

The information presented here is based on our current understanding.
It describes the product in terms of the necessary safety precautions.
It does not imply that the product's qualities are guaranteed.

If you have any questions or concerns about our product please contact us at lab@whclab.com

Prepared by:
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