

ADMIN

Yeast SM

EXPERT PANEL MEETING  
September 26-27, 2022



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## Memorandum

To: Expert Panel for Cosmetic Ingredient Safety Members and Liaisons  
From: Priya Cherian, Senior Scientific Writer/Analyst  
Date: September 1, 2022  
Subject: Strategy Memo on Yeast-Derived Ingredients

In February 2022, data were received suggesting the use of various genus and species of yeasts in the preparation of Yeast Extract, other than *Saccharomyces cerevisiae*. These include the following:

- *Candida oleophila*
- *Candida magnoliae*
- *Candida saitoana*
- *Debaryomyces nepalensis*
- *Metschnikowia agaves*
- *Metschnikowia pulcherrima*
- *Metschnikowia reukaufii*
- *Pichia anomala*
- *Pichia heedii*
- *Pichia minuta*
- *Pichia naganishii*
- *Saccharomyces cerevisiae*

Because of these new data, and the broad and uninformative definition of Yeast in the *Dictionary*, CIR staff issued a strategy memo at the March 2022 meeting (that original strategy memo is included in this packet as *SMI\_yeast\_092022*), and asked the Panel if the report should continue to only review the safety of *Saccharomyces cerevisiae*-derived yeast ingredients, or if other species of yeast (e.g., *Pichia anomala*) should be included in the document.

Subsequently, at the March 2022 meeting, the Panel suggested the preparation of another strategy memo, to include all yeast ingredients currently listed in the *Dictionary*, along with notations of whether or not these ingredients (or their corresponding species) are used in foods, as well as their frequency of use. (This list is included herein as *data\_yeast\_092022*.) It should be noted that several of these ingredients did not have an associated genus and species, and therefore, a search for use of these ingredients in food could not be performed. (Ingredients without an associated genus and species are provided in the table in [blue text](#).) In addition, the Panel requested information from industry verifying which species of yeast are used in the manufacturing of Yeast and Yeast Extract. No new information has been received.

***The CIR staff is asking the Panel for guidance; after listening to the presentation and reviewing the list of yeast ingredients provided herein, should:***

- 1. this report continue to only review the safety of *Saccharomyces cerevisiae*-derived yeast ingredients, which would be explained in the document, and only data on *Saccharomyces cerevisiae*-derived ingredients be included? Or,***
- 2. should all yeast ingredients provided in the Dictionary with both food/GRAS and/or 2022 frequency of use data (as indicated in the list provided herein,) be included. Or,***
- 3. should all yeast ingredients provided in the Dictionary, regardless of food use or 2022 frequency of use data (as indicated in the list provided herein), be included***




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## Memorandum

To: Expert Panel for Cosmetic Ingredient Safety Members and Liaisons  
 From: Priya Cherian, Senior Scientific Writer/Analyst  
 Date: February 11, 2022  
 Subject: Strategy Memo on Yeast-Derived Ingredients

In preparation of the safety assessment on the yeast-derived ingredients, CIR staff found that the definition of the cosmetic ingredient Yeast, as given in the *International Cosmetic Ingredient Dictionary and Handbook*, was extremely broad and uninformative for the purposes of researching this group of cosmetic ingredients in relation to cosmetic safety. According to the *Dictionary*, Yeast (CAS: 68876-77-7) is a class of microorganisms (Saccharomycetes) characterized by a lack of photosynthetic ability, existence as unicellular or simple irregular filaments, and reproduction by budding or direct division. Because the class, Saccharomycetes, pertains to a wide variety of species, and the specific species used in the manufacturing of cosmetic ingredients was unknown, the species, *Saccharomyces cerevisiae* was used for the purposes of this report, based off the reported widespread use of this species in foods, GRAS status, and use as a fermentation agent.

At the September 2021 meeting, the Panel issued an Insufficient Data Announcement (IDA) for this ingredient group, and requested clarification on the species of yeast used in the manufacturing of cosmetic ingredients. Since the issuing of the IDA, chemical/physical properties, manufacturing, dermal, and ocular irritation data on Yeast Extract derived from *Saccharomyces cerevisiae* were received. These data emphasized the use of *Saccharomyces cerevisiae* as the yeast species used in the manufacturing of cosmetic ingredients. However, on February 7, 2022, summary information on Yeast Extract derived from several other yeast species belonging to the class Saccharomycetes (e.g., *Pichia anomala*) were received from the Council. The data received are attached herein (*data\_Yeast\_032022*).

In addition, at the September 2021 meeting, a literature search was requested on two species of yeast (i.e., *Torula utilis* (also known as *Candida utilis*) and *Saccharomyces fragilis*) which are currently reported to be used in foods, according to the *Food Chemicals Codex*. A search was performed on these species, and data regarding composition, sensitization, fungemia, and infection were found. It should be noted that there is no evidence that these species are being used in cosmetic ingredient manufacturing, as no unpublished data have been received regarding the use of these species in cosmetics.

***The CIR staff is asking the Panel for guidance; in light of the data that have been received, should:***

- 1. this report continue to only review the safety of *Saccharomyces cerevisiae*-derived yeast ingredients, which would be explained in the document, and only data on *Saccharomyces cerevisiae*-derived ingredients be included. Or,***
- 2. should data on yeast ingredients derived from other species of yeast of the class Saccharomycetes be included in the document. And if so, should the related Saccharomycetes yeast cosmetic ingredients (e.g., *Pichia Anomala* Extract) also be included in this assessment.***

When this report was initially undertaken, CIR staff sought guidance from the International Cosmetic Ingredient Nomenclature Committee. Specifically, CIR asked which specific species were used in the manufacturing of these yeast-derived ingredients. The Committee was not able to provide clarity on these points.

## Potential Yeast Ingredients (2022) from the wINCI Dictionary

Ingredient	CAS #	Associated Genus/Species (if stated in Dictionary)	VCRP 2022	Used in Food Production
Galactomyces Ferment Filtrate		<i>Galactomyces candidus</i> , <i>Galactomyces fermentans</i> , or <i>Galactomyces reessii</i>		✓
Hydrolyzed Candida Bombicola Extract		<i>Candida Bombicola</i>		
Hydrolyzed Candida Saitoana Extract		<i>Candida Saitoana</i>	8	
Hydrolyzed Kluyveromyces Extract		<i>Kluyveromyces fragilis</i> or <i>Kluyveromyces lactis</i>		✓
Hydrolyzed Metschnikowia Agaves Extract	1309127-75-0	<i>Metschnikowia Agaves</i>		
Hydrolyzed Metschnikowia Reukaufii Extract		<i>Metschnikowia Reukaufii</i>		
Hydrolyzed Metschnikowia Shanxiensis Extract		<i>Metschnikowia Shanxiensis</i>		
Hydrolyzed Saccharomyces Extract Octenylsuccinate	1204060-83-2	<i>Saccharomyces</i>		
Hydrolyzed Schizosaccharomyces Protein		<i>Schizosaccharomyces</i>		
Hydrolyzed Torulaspora Delbrueckii Extract		<i>Torulaspora Delbrueckii</i>		✓
Hydrolyzed Yeast			6	
Hydrolyzed Yeast Extract			28	
Hydrolyzed Yeast Protein	100684-36-4; 227025-31-2		86	
Kluyveromyces Extract		<i>Kluyveromyces fragilis</i> or <i>Kluyveromyces lactis</i>	5	✓
Lactic Yeasts	68876-77-7			
Lipomyces Lipid Bodies		<i>Lipomyces</i>		
Lipomyces Oil		<i>Lipomyces</i>		
Lipomyces Oil Extract		<i>Lipomyces</i>		
Metschnikowia Agaves Extract		<i>Metschnikowia Agaves</i>		
Metschnikowia Agaves Polysaccharides		<i>Metschnikowia Agaves</i>		
Metschnikowia Henanensis Extract		<i>Metschnikowia Henanensis</i>		
Metschnikowia Reukaufii Lysate Extract		<i>Metschnikowia Reukaufii</i>		
Metschnikowia Viticola Extract		<i>Metschnikowia Viticola</i>		
Pichia Caribbica Ferment		<i>Pichia Caribbica</i>		
Pichia Extract		<i>Pichia</i>		
Pichia Ferment Extract Filtrate		<i>Pichia pastoris</i>		
Pichia Ferment Lysate Filtrate		<i>Pichia pastoris</i> , <i>Pichia populi</i> , or <i>Pichia stipitis</i>	3	✓
Pichia Pastoris Ferment Filtrate		<i>Pichia pastoris</i>		✓
Phaffia Rhodozyma Extract		<i>Phaffia rhodozyma</i>		✓
Phaffia Rhodozyma Ferment Extract		<i>Phaffia rhodozyma</i>		✓
Pichia Anomala Extract	1033319-29-7	<i>Pichia anomala</i>	2	✓
Pichia Heedii Extract	1801269-82-8	<i>Pichia heedii</i>		
Pichia Minuta Extract		<i>Pichia minuta</i>		
Saccharomyces		<i>Saccharomyces</i>		
Saccharomyces Cerevisiae Extract	84604-16-0	<i>Saccharomyces cerevisiae</i>	73	✓
Saccharomyces Extract		<i>Saccharomyces</i>		
Saccharomyces Ferment		<i>Saccharomyces</i>	31	
Saccharomyces Ferment Filtrate		<i>Saccharomyces</i>	38	
Saccharomyces Ferment Lysate Filtrate		<i>Saccharomyces</i>	36	
Saccharomyces Lysate	8013-01-2	<i>Saccharomyces</i>	14	
Saccharomyces Lysate Extract	8013-01-2	<i>Saccharomyces</i>	65	
Saccharomyces Lysate Extract Filtrate	8013-01-2	<i>Saccharomyces</i>		
Saccharomyces Polypeptides		<i>Saccharomyces</i>	4	
Schizosaccharomyces Ferment Extract Filtrate		<i>Schizosaccharomyces</i>		
Schizosaccharomyces Ferment Filtrate		<i>Schizosaccharomyces</i>	5	
Schizosaccharomyces Pombe Extract		<i>Schizosaccharomyces pombe</i>		✓
Torulaspora Delbrueckii Extract	1291071-26-5	<i>Torulaspora delbrueckii</i>		✓
Torulaspora Delbrueckii Ferment	1291071-26-5	<i>Torulaspora delbrueckii</i>		✓
Yarrowia Lipolytica Extract		<i>Yarrowia lipolytica</i>		✓
Yarrowia Lipolytica Ferment Lysate		<i>Yarrowia lipolytica</i>		✓
Yarrowia Lipolytica Oil		<i>Yarrowia lipolytica</i>		✓
r-Yarrowia Lipolytica Ferment Extract Filtrate		<i>Yarrowia lipolytica</i>		✓
Yeast	68876-77-7		13	
Yeast Amino Acids			2	
Yeast Extract	68876-77-7; 8013-01-2		355	

Ingredient	CAS #	Associated Genus/Species (if stated in <i>Dictionary</i> )	VCRP 2022	Used in Food Production
Yeast Ferment Extract			13	
Yeast Beta-Glucan			31	
Yeast Palmitate				
Yeast Polysaccharides			8	

Highlighted ingredients are part of the original grouping

Ingredients in blue do not have a corresponding genus and species, and therefore, use in foods could not be researched

No mixtures were included in this list.

Total Ingredients: 59