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Hershkovitz and Associates, PLLC 2845 Duke Street Alexandria, VA 22314			LEFF, STEVEN N	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* HANS HENRIK HOLST, WILLIAM STUART GUNTHER,  
JOERGEN ANDERSEN, and KRISTOFFER LUNDGREN

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Appeal 2019-003122  
Application 13/146,365  
Technology Center 1700

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Before GEORGE C. BEST, BRIAN D. RANGE, and  
MICHAEL G. McMANUS, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–9 and 16. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Arla Food AmbA. Appeal Br. 2.

## CLAIMED SUBJECT MATTER<sup>2</sup>

Appellant describes the invention as relating to milk products treated to obtain long shelf life. Spec. 1:5–9; 3:6–9. Claim 1 is illustrative:

1. A method for producing a milk or milk-related product, which contains 0 colony forming units/ml, the method comprising:

a) providing a milk derivative,

b) physically separating microorganisms from said milk derivative, thus obtaining a partly sterilised milk derivative, and

c) exposing a first composition comprising said partly sterilised milk derivative to a High Temperature (HT)-treatment, wherein the first composition is heated to a temperature in the range of 145 – 160 degrees C, kept in that temperature range for a period of 10 – 200 msec, and then finally cooled.

## REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

<u>Name</u>	<u>Reference</u>	<u>Date</u>
Pijls	US 2004/0057867 A1	Mar. 25, 2004
Sørensen et al. ("Sørensen")	WO 98/07328	Feb. 26, 1998
Coacci et al. ("Coacci")	WO 2008/058844 A1	May 22, 2008
Rysstad, G., & Kolstad, J., Extended shelf life milk—advances in technology. <i>Int'l J. Dairy Tech.</i> , 59(2), 85–96 (2006) ("Rysstad").		

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<sup>2</sup> In this Decision, we refer to the Non-Final Office Action dated June 1, 2018 ("Non-Final Act."), the Appeal Brief filed October 23, 2018 ("Appeal Br."), the Examiner's Answer dated January 22, 2019 ("Ans."), and the Reply Brief filed March 12, 2019 ("Reply Br.").

## REJECTIONS

The Examiner maintains the following rejections on appeal:

- A. Claims 1–9 and 16 under 35 U.S.C. § 103 as obvious over Pijls in view of Rysstad. Ans. 3.
- B. Claims 1–9 and 16 under 35 U.S.C. § 103 as obvious over Rysstad in view of Pijls. *Id.* at 5.
- C. Claims 1–9 and 16 under 35 U.S.C. § 103 as obvious over Sørensen in view of Coacci. *Id.* at 7.

## OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”)). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner’s rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Appellant argues each rejection separately but argues all claims as a group. *See* Appeal Br. 6–15. Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), we limit our discussion to claim 1, and all other claims on appeal stand or fall together with claim 1.

Rejection 1, obviousness over Pijls in view of Rysstad. The Examiner rejects claim 1 as obvious over Pijls in view of Rysstad. Ans. 3. The

Examiner finds, among other things, that Pijls teaches heating a milk composition to 145–160°C for 10–200 msec. *Id.* (citing Pijls). The Examiner finds that Pijls is silent as to physically separating microorganisms from the milk derivative. *Id.* at 4. The Examiner finds that Rysstad teaches removing bacterial cells and spores from milk prior to heat treatment and determines that a person of skill in art would do this to achieve extended shelf life. *Id.* at 4–5 (citing Rysstad).

Appellant argues that Pijls does not teach the temperature of the liquid milk during treatment. Appeal Br. 6. The Examiner, however, finds that Pijls teaches heating milk to a temperature range encompassing that recited by claim 1 (Ans. 8), and the preponderance of the evidence supports the Examiner’s position. In particular, Pijls explains its heating as follows:

The temperature of the supplied saturated or superheated steam in a method according to the invention is preferably in the range of 120-250° C., and more preferably between 140° C. and 200° C. In general, the temperature in the mixing chamber will be maintained at the desired level through the steam, although it is also possible that the mixing chamber itself is heated by another heat source.

Pijls ¶ 30. Pijls does not indicate that its milk should reach a different temperature than the steam that heats the milk; rather, it suggests that the steam and the milk will reach the same temperature by stating that “the temperature in the mixing chamber will be maintained at the desired level.” *Id.* Based on Pijls, a person of skill in the art would understand that (preferably) the Pijls mixing chamber—including the milk within the mixing chamber—would be maintained at 140°C to 200°C.

Appellant also argues that neither Pijls nor Rysstad teach a process that reaches zero colony forming units. Appeal Br. 8, 11. The preponderance

of the evidence, however, supports the Examiner’s finding that the combination of Pijls and Rysstad would meet this recitation because the references teach the same claimed sterilization temperatures, residence time, along with bactofugation and microfiltration. Ans. 8–9 (providing citations to Pijls and Rysstad). Indeed, Rysstad states that its process aims “to destroy all residual spoilage micro-organisms.” Rysstad 86. Appellant does not persuasively explain why the Pijls/Rysstad process would not possess the zero colony forming unit property. *In re Best*, 562 F.2d 1252, 1256 (CCPA 1977) (explaining that where “the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product”).

Appellant also argues that Rysstad does not suggest that taste is improved by microfiltration. Appeal Br. 7. Claim 1, however, does not have a taste requirement. Moreover, Appellant’s argument does not refute the Examiner’s stated reason why a person of skill would combine the teachings of Pijls and Rysstad—to extend shelf life. Ans. 4–5.<sup>3</sup> *See MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1366 (Fed. Cir. 1999) (“Where . . . the result is a necessary consequence of what was deliberately intended, it is of no import that the article’s authors did not appreciate the results.”).

Rejection 2, obviousness over Rysstad in view of Pijls. The Examiner also rejects claim 1 as obvious over Rysstad (as the primary reference) in

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<sup>3</sup> We address Appellant’s argument regarding unexpected results further below.

view of Pijls. Ans. 5. The Examiner finds, among other things, that Rysstad teaches heating for less than 1 second but does not teach claim 1's recited heating time of 10–200 msec. *Id.* at 5–6. Pijls, however, teaches an overlapping heating time. *Id.*; *see also* Pijls ¶ 30. The Examiner determines that it would have been obvious to use Pijls's teaching regarding heating time to optimize the process and reach a predictable result. *Id.*

To the extent Appellant's arguments are substantively the same as those raised with respect to rejection 1, those arguments are unpersuasive for the reasons explained above.

Appellant further argues that more than modification of holding time is necessary for Rysstad to reach claim 1. Appeal Br. 9. We disagree. Rysstad suggests using bactofugation in conjunction with high-temperature treatment. *See, e.g.*, Rysstad 88–89. The Rysstad system reaches 145°C and thus overlaps the temperature range recited by claim 1. *Id.* at 87; *see also* Ans. 11.

Rejection 3, obviousness over Sørensen in view of Coacci. The Examiner rejects claim 1 as obvious over Sørensen in view of Coacci. Ans. 7. The Examiner finds that Sørensen teaches treating a milk composition at a temperature from 145–160°C for a time period of 10–200 msec. *Id.* (citing Sørensen). The Examiner finds that Sørensen is silent as to physical separation of microorganisms. *Id.* The Examiner finds that Coacci teaches removing bacterial cells and spores and determines that a person of skill in the art would have incorporated this step into Sørensen to extend milk shelf life. *Id.* (citing Coacci).

Appellant argues that Coacci only has a shelf life of two weeks and would not reach zero colony forming units. Appeal Br. 11. The

preponderance of the evidence does not support Appellant’s position. Coacci teaches that a combination of bactofugation and rapid high temperature treatment (to, for example, 140°C) results in a shelf life of two to three months. Coacci 9–10; *see also* Ans. 11–13. Appellant does not persuasively explain why the Sørensen and Coacci combination process, as proposed by the Examiner, would not reach zero colony forming units. *In re Best*, 562 F.2d at 1256.

Appellant also argues that Coacci “does not UHT [ultra high temperature] treat the milk” and that a person of skill in the art would not have been motivated to introduce a method to produce sterile milk into a process for non-sterile milk. Appeal Br. 11. Appellant also argues that, if using bactofugation, a person of skill in the art would reduce heating period or temperature. *Id.* at 11–12. Again, the preponderance of the evidence does not support Appellant’s position. Coacci teaches bactofugation followed by high temperature treatment with the Coacci process resulting in milk having a shelf life of two to three months. Coacci 9–10.

Appellant further argues that the cited references do not suggest improved taste. Appeal Br. 12. Claim 1, however, does not have a taste requirement, and Appellant does not persuasively refute the Examiner’s stated reason why a person of skill would combine the teachings of Sørensen and Coacci—to extend shelf life. Ans. 4–5.

Unexpected Results. Throughout Appellant’s briefing, Appellant argues that the claimed combination of physically separating microorganism followed by high temperature treatment unexpectedly results in less cooked taste. *See, e.g.*, Appeal Br. 3–5, 7, 8, 12. Appellant emphasizes that the prior art does not suggest this synergistic effect. *Id.* at 7, 8, 12, 15; *see also*

January 15, 2017, Declaration of Valentin Rauh (“Rauh Decl.”) ¶ 7. Appellant primarily relies on the Rauh Declaration and experimental work reported in the Specification as evidence. Appeal Br. 12, 15; Rauh Decl. ¶¶ 8–11, 24.

A party asserting unexpected results as evidence of nonobviousness has the burden of proving that the results are unexpected. *In re Geisler*, 116 F.3d 1465, 1469–70 (Fed. Cir. 1997). Such burden requires Appellant to proffer factual evidence that shows unexpected results relative to the closest prior art (*see In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991)) and that is reasonably commensurate with claim scope (*In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983)). We have carefully considered Appellant’s evidence and arguments, but we ultimately find the evidence unpersuasive.

In particular, the Examiner determines that Appellant has not adequately compared the results of claim 1 to the closest prior art. Ans. 9. We agree that Appellant does not meet this burden. Appellant has not established that products produced by the method of claim 1 are unexpectedly superior to, for example, Rysstad’s ESL process or Coacci’s process of bactofugation followed by heating to 140°C. Rysstad 88–90; Coacci 8:29–10:5.

Also, Appellant’s evidence of unexpected results must be reasonably commensurate with the scope of Appellant’s claims. *In re Peterson*, 315 F.3d 1325, 1330–31 (Fed. Cir. 2003) (explaining that applicant may overcome a prima facie case of obviousness by showing unexpected results but the showing of unexpected results “must be commensurate in scope with the claims which the evidence is offered to support.”) (citation omitted).

Here, claim 1 permits, for example, a variety of “milk derivative[s],” variable temperature within the recited range, variable heating time within the recited time, and variable cooling time or techniques. Appellant has not adequately established evidence of an unexpected synergistic effect commensurate with the scope of these variables.

Because Appellant’s arguments do not identify Examiner error, we sustain the Examiner’s rejections.

### CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–9, 16	103	Pijls, Rysstad	1–9, 16	
1–9, 16	103	Rysstad, Pijls	1–9, 16	
1–9, 16	103	Sørensen, Coacci	1–9, 16	
<b>Overall Outcome</b>			1–9, 16	

### TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED**