

**United States Court of Appeals  
for the Federal Circuit**

---

**ENVIRO TECH CHEMICAL SERVICES, INC.,**  
*Plaintiff-Appellant*

v.

**SAFE FOODS CORP.,**  
*Defendant-Appellee*

---

2024-2160

---

Appeal from the United States District Court for the Eastern District of Arkansas in No. 4:21-cv-00601-LPR, Judge Lee P. Rudofsky.

---

Decided: May 4, 2026

---

SETH R. OGDEN, Patterson Intellectual Property Law, P.C., Nashville, TN, argued for plaintiff-appellant. Also represented by RYAN D. LEVY, NATHAN I. NORTH; KAEL K. BOWLING, MARSHALL NEY, Friday, Eldredge & Clark, LLP, Rogers, AR.

DEBRA JANECE MCCOMAS, Haynes and Boone, LLP, Dallas, TX, argued for defendant-appellee. Also represented by ANGELA M. OLIVER, Washington, DC; AMIR H. ALAVI, SCOTT W. CLARK, STEVEN THOMAS JUGLE, Alavi & Anaipakos PLLC, Houston, TX.

---

2 ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP.

Before LOURIE and PROST, *Circuit Judges*, and  
BURROUGHS, *District Judge*.<sup>1</sup>

LOURIE, *Circuit Judge*.

Enviro Tech Chemical Services, Inc. (“Enviro Tech”) appeals from a decision of the U.S. District Court for the Eastern District of Arkansas determining that the asserted claims 1–3, 5–12, 14–19, 21–24, 26–29, and 31–33 of its U.S. Patent 10,912,321 (“the ’321 patent”) were invalid as indefinite. *Enviro Tech Chem. Servs., Inc. v. Safe Foods Corp.*, No. 4:21-cv-00601-LPR, 2022 WL 17721179 (E.D. Ark. Dec. 15, 2022) (“*Decision*”). For the following reasons, we affirm.

#### BACKGROUND

Enviro Tech’s ’321 patent is directed to “[m]ethods for treating poultry during processing for increasing the weight of the poultry,” using “peracetic acid.” ’321 patent at Abstract. Independent claim 1 is representative of the asserted claims and recites:

1. A method of treating at least a portion of a poultry carcass with peracetic acid, said method comprising the steps of:

providing, in a reservoir, a peracetic acid-containing water, wherein the peracetic acid-containing water comprises water and *an antimicrobial amount of a solution of peracetic acid*;

after the step of providing the peracetic acid-containing water, determining the pH of the peracetic acid-containing water, and altering the pH of the

---

<sup>1</sup> Honorable Allison D. Burroughs, District Judge, United States District Court for the District of Massachusetts, sitting by designation.

peracetic acid-containing water to a *pH of about 7.6 to about 10* by adding an alkaline source;

after the step of determining the pH and altering the pH of the peracetic acid-containing water, placing into the peracetic acid-containing water at least a portion of a poultry carcass;

after the step of placing at least the portion of the poultry carcass into the peracetic acid-containing water, determining the pH of the peracetic acid containing water in the reservoir with at least the portion of the poultry carcass therein, and altering the pH of the peracetic acid containing water to a *pH of about 7.6 to about 10* by adding an alkaline source; and

after the step of determining the pH and altering the pH of the peracetic acid-containing water having at least the portion of the poultry carcass therein, removing at least the portion of the poultry carcass from the peracetic acid-containing water.

*Id.* col. 61 ll. 31–58 (emphases added).

Enviro Tech sued Safe Foods Corp. (“Safe Foods”), asserting that Safe Foods infringed claims 1–3, 5–12, 14–19, 21–24, 26–29, and 31–33 of its ’321 patent. *See* J.A. 106. During claim construction, Safe Foods alleged that two terms of claim 1—“an antimicrobial amount” and “about”—were indefinite. *See Decision*, 2022 WL 17721179, at \*12. The district court determined that both terms were indefinite and issued a judgment that the asserted claims were invalid. *Id.* at \*16, \*18; J.A. 11–12.

Enviro Tech timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

#### DISCUSSION

Patent claims must “particularly point[] out and distinctly claim[]” the invention. 35 U.S.C § 112(b). “A claim

4 ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP.

fails to satisfy this statutory requirement and is thus invalid for indefiniteness if its language, when read in light of the specification and the prosecution history, ‘fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.’” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1369–70 (Fed. Cir. 2014) (alteration in original) (quoting *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014)). “We review indefiniteness determinations *de novo* except for necessary subsidiary fact findings, which we review for clear error.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363 (Fed. Cir. 2018).

Enviro Tech challenges both of the district court’s indefiniteness determinations. Because we are affirming the district court that “about” is indefinite, which renders all of the asserted claims invalid, we do not address the alternative ground that “antimicrobial amount” is indefinite.

The district court determined that the intrinsic evidence—*i.e.*, the claims, specification, and prosecution history—did not inform a skilled artisan as to the scope of the term “about” with reasonable certainty, and thus that the asserted claims were indefinite. *Decision*, 2022 WL 17721179, at \*13–15. We agree.

We have long held that words like “about” and “approximately” may be appropriately used to “avoid[] a strict numerical boundary to the specified parameter.” *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Lab’ys, Ltd.*, 476 F.3d 1321, 1326 (Fed. Cir. 2007) (quoting *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed. Cir. 1995)); *see also Interval Licensing*, 766 F.3d at 1370–71. Terms of degree, like “about” and “approximately,” are not inherently definite or indefinite. *See Berkheimer*, 881 F.3d at 1364; *see also Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1218 (Fed. Cir. 1991) (claim term “about” may be acceptable in appropriate situations). When a word of approximation is used, however, the parameter’s range

ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP. 5

must be reasonably certain based on the “technological facts of the particular case.” *Ortho-McNeil*, 476 F.3d at 1326 (quoting *Pall*, 66 F.3d at 1217); *Amgen*, 927 F.2d at 1218 (holding “about 160,000 IU/AU” indefinite when “nothing in the specification, prosecution history, or prior art provides any indication as to what range . . . is covered”); see also *Interval Licensing*, 766 F.3d at 1371. We consider the claims, patent specification, and prosecution history, as well as extrinsic evidence, to ascertain the range that is covered.

We start with the claim language. Claim 1 states that the acidity of the peracetic acid-containing water will be altered to a “pH of about 7.6 to about 10 by adding an alkaline source.” ’321 patent, col. 61 ll. 41–42, 52–53. But the claims do not provide any guidance on how much below a pH of 7.6 or above a pH of 10 the peracetic acid-containing water can be to meet the limitation. The parties agree that the ordinary meaning of “about” is “approximately,” but “approximately” provides no more guidance on the permissible deviation of the claimed range than the word “about” such that the claim language would inform a skilled artisan as to the meaning of the term. See *Interval Licensing*, 766 F.3d at 1371 (“Even if a claim term’s definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.” (internal quotation marks and citation omitted)).

We turn next to the ’321 patent specification, which similarly does not inform a skilled artisan of the scope of “about” with reasonable certainty. The specification recites numerous experiments conducted by Enviro Tech, wherein it would set a target pH, measure the pH, then proceed with the experiment depending on how large the difference was between the two. In a majority of the experiments, Enviro Tech proceeded only when the difference of the actual pH was less than or equal to 0.3 of the target pH. See, e.g., ’321 patent, col. 39 ll. 22–35, col. 44 ll. 1–8. If the

6 ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP.

difference was greater than 0.3, Enviro Tech would most often alter the pH to be closer to the target before proceeding. *See, e.g., id.* col. 44 ll. 1–8.

But there were exceptions to that general practice: In several examples, Enviro Tech decided to continue an experiment even when the pH deviated from the target by more than 0.3. *See id.* col. 42 ll. 3–8, col. 55 ll. 56–63, col. 58 l. 50–col. 59 l. 25, col. 59 ll. 32–60. In one such experiment, conducted with 5,800,000 chickens in “a major U.S. processor of poultry,” Enviro Tech proceeded with deviations between 0.35 and 0.5 of the target pH. *Id.* col. 58 l. 19–col. 60 l. 46. That experiment is particularly informative because it involved the largest number of chickens and occurred in a processing plant, given that one goal of the patented invention is to “increase . . . a processing plant’s percent yield.” *Id.* at Abstract (emphasis added). And it indicates that the 0.3 variance in some examples was not a firm indicator of the meaning of “about.” The ’321 patent specification’s conflicting guidance thus does not allow a skilled artisan to determine the scope of “about” with reasonable certainty. *Cf. Interval Licensing*, 766 F.3d at 1372 (explaining that a specification that “is at best muddled” provides for a “hazy relationship between the claims and the written description” and therefore “fails to provide the clarity that . . . subjective claim language needs”).

We then turn to the ’321 patent’s prosecution history. Enviro Tech’s treatment of the word “about” during the patent’s prosecution was inconsistent and also fails to inform a skilled artisan of claim 1’s scope with reasonable certainty. For example, in one office action response, Enviro Tech argued that “a peracetic acid solution at the lower end of the claimed range, pH 7.6,” would not have been obvious over the prior art, notably failing to include the term “about” in its arguments. J.A. 658. Yet on the next page of its response, with respect to another claim, Enviro Tech argued that “a step of adjusting the pH to the range of *about* 8 to *about* 9” would not have been obvious over the

ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP. 7

same prior art, including “about” in its arguments. J.A. 659 (emphases added).

At no point in the entire prosecution history does Enviro Tech explain what “about” means. Rather, Enviro Tech treated the term inconsistently, suggesting that it was material to some claims and immaterial to others. See *Infinity Comput. Prods., Inc. v. Oki Data Ams., Inc.*, 987 F.3d 1053, 1059 (Fed. Cir. 2021) (“Indefiniteness may result from inconsistent prosecution history statements where the claim language and specification on their own leave an uncertainty that, if unresolved, would produce indefiniteness.”).

Enviro Tech argues that the district court should have considered the fact that it surrendered claim scope during prosecution of the ’321 patent. Open. Br. at 25. According to Enviro Tech, the fact that it amended the lower boundary of its claimed range from a pH of “about 7.3” to “about 7.6” demonstrates that it disclaimed any pH deviation greater than 0.3 pH, and therefore that “about” means less than or equal to 0.3. *Id.* at 25–26. We are not convinced. Enviro Tech points to no remarks it made to the examiner that are the sort of “repeated and consistent remarks during prosecution [that] can define a claim term,” nor is Enviro Tech’s “amendment accompanied by explanatory remarks” suggesting that “about” should be construed to mean less than or equal to 0.3 pH. See *Personalized Media Commc’ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1345 (Fed. Cir. 2020). Indeed, Enviro Tech never offered an argument to the examiner indicating what “about” means.

An important determinant in our decision here is the very fact that what is now claim 1 was amended in respect to pH to avoid prior art, which was as close as a pH of 7.0. See J.A. 572. When the specification recites pHs of 6–10, see ’321 patent, col. 6 ll. 30–39, col. 39 ll. 12–16, and the prior art pH of 7.0 required the claims to be amended, the definiteness requirement of § 112 necessitates much more

8 ENVIRO TECH CHEMICAL SERVICES, INC. v. SAFE FOODS CORP.

clarity than using the vague term “about.” The prior art is almost “about” a pH of 7.6.

For the foregoing reasons, the term “about” as used in representative claim 1 of the ’321 patent is indefinite, rendering the asserted claims of the ’321 patent invalid.

#### CONCLUSION

We have considered Enviro Tech’s remaining arguments with respect to the term “about” but find them unpersuasive. For the foregoing reasons, we affirm.

**AFFIRMED**