

STATE OF NORTH CAROLINA
GASTON COUNTY

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13 CVS 1686

DSM DYNEEMA, LLC,
Plaintiff,

v.

JAMES THAGARD, Ph.D.;
HONEYWELL SPECIALTY
MATERIALS, LLC; HONEYWELL
ADVANCED COMPOSITES, INC.;
and HONEYWELL
INTERNATIONAL, INC.,
Defendants.

**ORDER AND OPINION ON
DEFENDANTS' MOTIONS FOR
SUMMARY JUDGMENT
[Public]¹**

1. **THIS MATTER** is before the Court upon (i) Defendant James Thagard Ph.D.'s ("Thagard") Motion for Summary Judgment and (ii) Defendants Honeywell Specialty Materials, LLC, Honeywell Advanced Composites, Inc., and Honeywell International, Inc.'s (collectively, "Honeywell" and, together with Thagard, "Defendants") Motion for Summary Judgment (the "Motions") in the above-captioned case.

¹ Recognizing that this Order and Opinion cites and discusses the subject matter of certain documents that the Court has previously allowed to remain filed under seal, the Court elected to file the Order and Opinion under seal on June 19, 2019. The Court then permitted the parties an opportunity to (i) propose redactions to the public version of this document, (ii) make objections to the other parties' proposed redactions, and (iii) respond to any such objections. Although the Court is skeptical whether all of the redactions requested by Plaintiff DSM Dyneema, LLC protect from public disclosure words, phrases, and statements that reflect information that is actually confidential or proprietary to DSM—indeed, DSM seeks to redact certain information that is publicly available—the Court has nevertheless, out of an abundance of caution and in light of DSM's recent appeal of this Order and Opinion, accepted all of the redactions proposed by DSM and the other parties without exception.

2. Having considered the Motions, the parties' briefs, exhibits, and affidavits in support of and in opposition to the Motions, the pleadings, the arguments of counsel at the May 10, 2018 hearing, and other appropriate matters of record, the Court hereby **GRANTS** the Motions and dismisses Plaintiff DSM Dyneema, LLC's ("DSM") claims against Defendants with prejudice.

McCullough Ginsberg Montano & Partners LLP, by Dino C. Haloulos, Theodore McCullough, Robert Lower, and Kara Halpern, and Bell, Davis & Pitt, P.A., by Edward B. Davis, Kevin G. Williams, Demitra Sourlis, and Joshua B. Durham, for Plaintiff DSM Dyneema, LLC.

Kirkland & Ellis LLP, by Daniel A. Bress, Craig Primis, Alexia Broncato, and Katherine Katz, and Erwin, Bishop, Capitano, & Moss, P.A., by Joseph W. Moss, Jr. and Lex M. Erwin, for Defendants Honeywell Specialty Materials, LLC, Honeywell Advanced Composites, Inc., and Honeywell International, Inc.

Parker Poe Adams & Bernstein LLP, by Christopher M. Thomas, Michael G. Adams, and Nicholas H. Lee, for Defendant James Thagard, Ph.D.

Bledsoe, Chief Judge.

I.

FACTUAL AND PROCEDURAL BACKGROUND

3. The Court does not make findings of fact on motions for summary judgment. *See Hyde Ins. Agency, Inc. v. Dixie Leasing Corp.*, 26 N.C. App. 138, 142, 215 S.E.2d 162, 164–65 (1975). Instead, the Court summarizes the facts before it, noting undisputed and contested facts, to provide context for the claims and its ruling on the Motions. *Id.* at 142, 215 S.E.2d at 165.

4. DSM and Honeywell are competitors in the anti-ballistic material production industry and historically have competed for United States military

contracts involving the development of materials used in combat helmets. This case involves anti-ballistic materials that were developed for the military's Enhanced Combat Helmet program (the "ECH Program"). Thagard, a former DSM employee, began working at Honeywell in 2010. In 2013, Honeywell materials were selected for use in the ECH Program. DSM initiated this action asserting various claims, all of which hinge on allegations that Defendants misappropriated DSM's trade secrets and confidential and proprietary information in Honeywell's successful effort to place its materials in the ECH Program.

5. Since the filing of DSM's Complaint in 2013, the parties have engaged in extensive and far-reaching discovery. Both sides have produced a large volume of documents, many of which the parties agree are highly confidential due to the nature of the ECH Program, and the Court has been required to resolve a number of discovery disputes, several of which have involved novel questions of North Carolina law.² In recognition of the extensive record developed by the parties, the Court permitted expansive summary judgment briefing, and the parties have submitted approximately 760 exhibits and 8,000 pages of deposition testimony in connection with the Motions. The Court held an all-day hearing on the Motions on May 10, 2018

² Pertinent procedural and factual background of this matter, including that related to the disputes in discovery, is set out more fully in *DSM Dyneema, LLC v. Thagard*, 2015 NCBC LEXIS 116 (N.C. Super. Ct. Dec. 18, 2015), *DSM Dyneema, LLC v. Thagard*, 2015 NCBC LEXIS 50 (N.C. Super. Ct. May 12, 2015), and *DSM Dyneema, LLC v. Thagard*, 2014 NCBC LEXIS 51 (N.C. Super. Ct. Oct. 17, 2014).

(the “May 10 Hearing”), at which all parties were represented by counsel.³ The Motions are now ripe for determination.

A. Factual Background⁴

1. Materials Generally

6. The basic characteristics of the materials at issue in this case are generally known and undisputed. (*See generally* TEx. 1 [hereinafter “Bhatnagar Book”], ECF No. 345.2; TEx. 2, ECF No. 345.3.) Materials manufacturers, including Honeywell and DSM, first create the synthetic gel fibers to be used in the anti-ballistic materials. (TEx. 2, at C1L55–C2L11.) Those fibers here are ultra-high molecular weight polyethylene (“UHMWPE”) fibers. The gel fibers are then drawn and dried, and the resulting fibers are formed into anti-ballistic material. (TEx. 2, at C2L12–C2L42.)

7. The type of material at issue here is unidirectional (“UD” or “UDC”), meaning that the fibers run in the same direction and are held in place by a glue-like substance known as “resin” or “matrix.” (Bhatnagar Book 7; Werff Aff. ¶ 25, ECF No. 376.10.) Multiple layers are then laminated together in a “cross-ply,” at a 0°/90° orientation. (Bhatnagar Book 7; Werff Aff. ¶ 25.) In essence, the resin holds the

³ At the May 10 Hearing, the Court also heard arguments on a dispute concerning the adequacy of Thagard’s redactions to his Brief in Support of Motion for Summary Judgment, which was filed on the Court’s public docket. The Court intends to resolve that dispute by separate order.

⁴ This Order and Opinion shall refer to Thagard’s summary judgment exhibits as “TEx.,” Honeywell’s summary judgment exhibits as “HWEEx.,” Defendants’ joint summary judgment exhibits as “DJEx.,” DSM’s summary judgment exhibits as “DSMEx.,” Defendants’ deposition exhibits as “DX,” and DSM’s deposition exhibits as “PX.”

fibers together, and the fibers “catch” projectiles, in particular, bullets. (Werff Dep. 19:16–20:9, ECF No. 358.)

8. UD material is sold in rolls to product manufacturers. The manufacturer cuts out the desired shapes from the roll and incorporates the material into a completed product. For combat helmets, the UD materials are heated and molded into a hard panel formation.

9. Ballistic and structural performance of the UD material depends on, among other things, “fiber construction, fiber surface, binder resin and binder resin content.” (TEx. 2, at C1L42–45; *see* Bhatnagar Book 7 (“The ballistic performance of non-woven, cross-plyed unidirectional ballistic materials depends upon: 1. Physical properties of the ballistic fibers. 2. Denier of the fibers. 3. Amount of intermingling of fiber within a yarn bundle. 4. Fiber spreading at macro level. 5. Type of resin. 6. Quantity of resin. 7. Bond between resin and fiber.”).)

10. Honeywell has manufactured UHMWPE UD materials since the 1980s and has supplied UD materials for helmets since the 1990s. (Cordova Dep. 7:25–15:17, ECF No. 358.) DSM first entered the United States market for UD materials in 2004. (Cordova Dep. 25:23–26:17.)

11. At issue in the present case are DSM’s materials commercialized as HB80 (prototyped as X31) and HB210 (prototyped as X158) and Honeywell’s materials commercialized as SR-3136 and SR-5231 (prototyped as Experimental G). Despite their general similarities, the materials created by DSM—X31/HB80 and X158/HB210—and Honeywell—SR-3136 and SR-5231—are quite different. (*See, e.g.,*

Reitman Aff. ¶¶ 16, 75, ECF No. 358.) It is undisputed that the products consist of different (i) fiber raw material, (ii) fiber manufacturing process, (iii) fiber shape, (iv) fiber content, (v) fiber liner density, (vi) fiber tenacity, (vii) resin type, (viii) resin content, and (ix) fiber surface treatment. A table setting forth the undisputed differences between the materials is attached to this Order and Opinion as Appendix A.

2. Thagard's Employment with DSM

12. Thagard began working at DSM in December 2006 as an Application Development & Technical Service Engineer. (HWEx. 59, ECF No. 360.) As a condition of his employment, Thagard entered into an employment contract with DSM (the "Employment Agreement"). (See DX40 [hereinafter "Employ. Agmt."], ECF No. 349.96.) The Employment Agreement provided that Thagard could not work for a company competing with DSM for at least twelve months after leaving DSM, (Employ. Agmt. ¶ 4), and bound Thagard to certain confidentiality obligations, (Employ. Agmt. ¶ 1).

13. In his position at DSM, Thagard assisted in the development and commercialization of UD materials for helmet applications, including the DSM material known as X31, which, as noted, was later commercialized as HB80. (See DSMEx. 72, ECF No. 376.5; Aff. J. Thagard ¶¶ 32–33 [hereinafter "1st Thagard Aff."], ECF No. 350.) In addition, Thagard worked with the United States government to obtain funds for developing and testing materials. (1st Thagard Aff. ¶¶ 45–46.)

14. Although the parties disagree as to the extent of Thagard's involvement in designing and developing UD materials at DSM, it is undisputed that in February and March of 2007, Thagard met with James Zheng, Ph.D., the Chief Scientist of Soldier Protection Individual Equipment within the Program Executive Office Soldier (the "PEO Soldier") of the United States Army. (1st Thagard Aff. ¶¶ 41–42; 1st Thagard Aff. Ex. 8, ECF No. 350.8.) Zheng indicated that the PEO Soldier was in the early stages of a new helmet development program through which the PEO Soldier would purchase flat-panel UD materials from DSM, Honeywell, and others for evaluation. (1st Thagard Aff. ¶¶ 41–42; 1st Thagard Aff. Ex. 8; 1st Thagard Aff. Ex. 9, ECF No. 350.9.) The Army's standard helmet at the time was the Advanced Combat Helmet.⁵ (1st Thagard Aff. ¶ 40; Zheng Dep. 19:18–20:15, ECF No. 358.)

15. On March 30, 2007, Thagard sought the input of DSM's research and development ("R&D") team to identify potential materials for submission to the PEO Soldier. (1st Thagard Aff. ¶ 43; 1st Thagard Aff. Ex. 9; 1st Thagard Aff. Ex. 10, ECF No. 350.10.) Shortly thereafter, DSM identified prototype materials X30 and X31/HB80 for testing. (1st Thagard Aff. ¶ 43.)

16. The X31/HB80 material had already been prototyped and, according to Thagard, was "on the shelf" after being optimized for the Advanced Combat Helmet program. (1st Thagard Aff. ¶ 43; *see* 1st Thagard Aff. Ex. 11, ECF No. 350.11; *see also* Beard Dep. 253:2–9, ECF No. 358 ("[Q.] To your knowledge, who was the lead

⁵ The Advanced Combat Helmet was made with para-aramid fibers, such as DuPont's Kevlar® and Teijin's Twaron®. (1st Thagard Aff. ¶ 40; Miller Dep. 116:19–117:23, ECF No. 358; Dooley Dep. 14:3–12, ECF No. 358; Bhatnagar Book 358–59.)

developer for HB80? A. The product developer was Hans Wilms. . . . [H]e is the one that actually made the product.”.) DSM, however, has offered evidence showing that Thagard “assisted in the development of DSM’s HB80 material for helmet applications.” (Werff Aff. ¶ 61; *see* DSMEEx. 59, ECF No. 374.59.)

17. In March 2009, Thagard left DSM’s employ and began working for General Dynamics, a DSM customer. (1st Thagard Aff. ¶ 48; Dooley Dep. 175:24–177:8, ECF No. 358.) On July 19, 2010—sixteen months after leaving DSM—Thagard joined Honeywell as Global Business Manager for Helmets. (Grunden Dep. 238:16–239:24, ECF No. 358; Thagard Dep. 28:11–20, ECF No. 358; DSMEEx. 124, ECF No. 376.56; *see* HWEx. 55, ECF No. 360; DSMEEx. 102, ECF No. 376.35.)

3. ECH Program

18. Beginning in 2007, the United States military began working with helmet manufacturers to develop a next-generation combat helmet. (Miller Dep. 116:18–117:23, ECF No. 358; Zheng Dep. 17:24–20:2.) The military specifically sought to develop a low-weight helmet with the ability to stop certain projectiles (namely, rifle rounds) and limit blunt force trauma. (Miller Dep. 116:19–117:23; Zheng Dep. 58:9–25, 63:9–65:16.)

19. In 2007, the military purchased for evaluation and testing helmets made with different UD materials developed by various UD manufacturers, including DSM and Honeywell. (1st Thagard Aff. ¶¶ 42–44; 1st Thagard Aff. Ex. 11; 1st Thagard Aff. Ex. 12; ECF No. 350.12; Thagard Dep. 377:16–379:4.) After preliminary testing, the

military began to move forward with the ECH Program to develop a product that would ultimately replace the Advanced Combat Helmet.

20. In April 2009, the military released a formal solicitation for helmets in the ECH Program. (HWE_{Ex.} 102, at 2, ECF No. 362; Brachos Dep. 139:19–140:2, ECF No. 358.) The military established certain ballistic and structural specifications relating to, among other things, (i) ballistic performance as measured by V_{50} ⁶, (Miller Dep. 116:19–119:25; Zheng Dep. 63:9–22); (ii) backface deformation (“BFD” also known as backface signature or “BFS”)⁷, (Zheng Dep. 64:16–65:16; Van Es Dep. 54:14–56:13, ECF No. 358); (iii) side to side compression, (Brachos Dep. 142:9–12; Van Es Dep. 54:14–56:13); and (iv) blunt impact resistance, (Miller Dep. 236:6–25; Brachos Dep. 132:9–21).⁸ The military ultimately selected one helmet manufacturer, Ceradyne (previously Diaphorm), to manufacture helmets for the ECH Program. (Brachos Dep. 144:14–145:5.)

21. In 2009, during the first stage of the ECH Program known as Developmental Testing I (“DT1”), DSM and Honeywell each provided materials to Ceradyne for testing and consideration for use in the ECH Program. (Miller Dep. 18:7–20:4;

⁶ V_{50} is the velocity at which 50% of projectiles penetrate the material being tested. (Zheng Dep. 63:13–22.)

⁷ BFD or BFS is a measure of “the depth in clay that a non-penetrating round leaves after striking the ballistic material.” (2nd Thagard Aff. ¶ 25; *see* Zheng Dep. 65:3–16.)

⁸ The military established a screening process and proposed schedule for the ECH Program. (*See* HWE_{Ex.} 102, at 2–3.) During a preliminary phase of the program known as Developmental Testing, helmets made with different materials were submitted to the military for testing. If and when a material passed Developmental Testing, the military would authorize the production of helmets made with that material. (Zheng Dep. 40:20–41:6.) Before actual production, however, the material would be subjected to an additional round of testing, known as First Article Testing. (Zheng Dep. 40:20–41:6, 147:1–149:11.)

Brachos Dep. 144:14–145:5.) DSM provided Ceradyne its X31/HB80 material. (Brachos Dep. 166:24–167:5.) Honeywell submitted its SR-3136 material,⁹ (HWEEx. 89, ECF No. 360), which was fully developed before Thagard’s arrival at Honeywell, (Reitman Aff. ¶ 9(iii)). Ceradyne manufactured helmets with DSM and Honeywell’s materials, and submitted the helmets to the military for testing. (Brachos Dep. 166:3–167:5.) None of the helmets that Ceradyne tendered to the military passed DT1. (Brachos Dep. 166:3–167:5; HWEEx. 90, ECF No. 360.)

22. In the second round of the ECH Program’s Developmental Testing (“DT2”), which took place in 2010, Ceradyne submitted two helmets—one made with DSM’s X31/HB80 material and another made with [REDACTED] Honeywell’s [REDACTED] materials. (Brachos Dep. 101:8–21, 173:3–174:11; Miller Dep. 59:24–64:11, 124:9–124:20.) While both helmets passed DT2 testing, (Brachos Dep. 89:14–90:16, 179:2–180:11; Miller Dep. 83:2–16, 124:9–124:20), in December 2010, the military decided to proceed with a helmet made with DSM’s X31/HB80 material for the ECH Program, (Brachos Dep. 179:2–180:11; Miller Dep. 83:2–16, 157:18–158:2; Fitzgerald Dep. 37:18–38:19, ECF No. 358; DX483, ECF No. 349.233).

23. After X31/HB80 was selected for the ECH Program, Honeywell continued to develop UD materials and provide those materials to Ceradyne for testing. (Brachos Dep. 160:16–19; Grunden Dep. 255:15–257:6; Wagner Dep. 275:3–276:2, ECF No. 358.) Beginning in 2011, Honeywell provided Ceradyne with experimental versions

⁹ While the material that Honeywell submitted to Ceradyne during DT1 was named “SR-5341G,” the same product was later commercialized as SR-3136. (See Brachos Dep. 163:13–164:5; Grunden Dep. 197:14–198:20.)

of a material known as “Experimental G,” which would later become commercialized as SR-5231. (Brachos Dep. 208:12–210:12.)

24. In March 2011, Ceradyne helmets made with DSM’s X31/HB80 failed the first round of First Article Testing (“FAT”) because of issues with “[t]est protocol execution[.]” resulting in a delay of “nine [or] ten months.” (Brachos Dep. 186:13–187:23; *see* Chabba Dep. 101:16–107:23, ECF No. 358; Fitzgerald Dep. 48:23–49:8; DX16, ECF No. 349.81; DX17, ECF No. 349.82; HWEx. 121, ECF No. 362.) Despite the failures in the first round of FAT, the helmets made with X31/HB80 passed a second round of FAT in late 2011. (Brachos Dep. 145:17–148:5.)

25. In 2012, helmets made with DSM’s X31/HB80 material were determined to suffer from complete ballistic penetrations (i.e., bullets penetrated the helmets).¹⁰ (Brachos Dep. 191:7–199:4; DX322, ECF No. 349.196; DX323, ECF No. 349.197; DX324, ECF No. 349.198; Chabba Dep. 130:14–134:13, 145:25–146:13, 164:18–168:25; DX243, ECF No. 349.163; Dooley Dep. 154:11–173:12.) **[REDACTED]**.

26. In August 2012, Ceradyne informed DSM that “[t]he military considered [the penetrations] out of control,” and either “THIS PROCESS PASSES IN OCTOBER OR THIS PROGRAM DIES.” (DX19, ECF No. 349.84 (emphasis in original); **[REDACTED]**.) As noted in an October 2012 internal DSM communication, “[t]he ECH Program [was] at a stand-still due to testing failures[.]” (DX247, ECF No. 349.166.) In December 2012, DSM was informed that Ceradyne’s President, Dave

¹⁰ The parties disagree on the cause of the penetrations in the X31/HB80 helmets. Defendants suggest that the problem was with the X31/HB80 material itself. DSM contends that Ceradyne’s manufacturing process caused the penetrations. This disputed fact is not material to resolution of the Motions.

Reed, did not see the “HB80 design as long term viable solution due to the lack of safety margin and potential risk of lot failures for them.” (DX493, ECF No. 349.238.)

27. As a result of this penetration problem in helmets made with DSM’s X31/HB80 material, Ceradyne sought new materials from both DSM and Honeywell for testing in October 2012. (HWEx. 65, ECF No. 360; HWEx. 103, at 4, ECF No. 360.) DSM submitted for testing its X158 material (later commercialized as HB210), (HWEx. 100, ECF No. 360), which was developed in 2012 after Thagard left DSM’s employ, (Werff Aff. ¶ 13). Honeywell submitted its Experimental G/SR-5231 material for testing. (HWEx. 65.)

28. In February 2013, helmets made with Honeywell’s materials outperformed helmets made with DSM’s X158/HB210 product. (DX265, ECF No. 349.173.) In particular, DSM’s X158/HB210 performed poorly in blunt impact testing. (HWEx. 61, at 18, ECF No. 360; HWEx. 110, ECF No. 362; HWEx. 109, ECF No. 362; HWEx. 108, ECF No. 362; HWEx. 106, ECF No. 362; HWEx. 98, ECF No. 360.) As noted in an April 2013 internal DSM report, the Honeywell materials showed “THREE TIMES better blunt impact performance than X158.” (HWEx. 87, at 1, ECF No. 360 (emphasis in original).)

29. Given the favorable test results, Ceradyne ultimately decided to proceed with [REDACTED] using Honeywell’s [REDACTED] materials in early 2013 (the “Honeywell [REDACTED] Solution”). (Brachos Dep. 79:7–9, 80:13–83:9.) According to Robert Miller, Ceradyne’s ECH Program manager, the Honeywell [REDACTED] Solution was selected over the DSM materials because of “performance, [t]ime limits,

and price.” (DX265, at 2.) The Honeywell [REDACTED] Solution passed FAT in March 2013 and went into full rate production the following month. (Zheng Dep. 93:20–94:2, 96:10–13.)

30. In February 2013, Ceradyne informed DSM that DSM had “lost” the ECH Program to Honeywell. (HWEx. 83, at 1, ECF No. 360.) Ceradyne specifically informed DSM that DSM’s “[t]iming was too late,” its “[m]aterial was not passing blunt impact and there was no time to re-design further,” and Honeywell’s “material [was] passing and the price [was] significantly lower.” (HWEx. 83, at 3; see DX265, at 2.) An internal DSM report from March 2013 noted that “Honeywell did not have product early on that would work. When the difficulty happened with the testing and HB80, it provided time for [Honeywell] to catch up.” (DX265, at 2.)

B. Procedural Background

31. DSM filed its initial Complaint in this action on April 29, 2013 against Thagard, (Compl., ECF No. 1), and its Amended Complaint on August 2, 2013, adding Honeywell as Defendants, (Am. Compl., ECF No. 10).

32. In its Amended Complaint, DSM asserts claims against (i) Thagard for breach of the Employment Agreement and for breach of fiduciary duty; (ii) Honeywell for tortious interference with Thagard’s Employment Agreement; and (iii) all Defendants for unjust enrichment, tortious interference with a certain “Know-How License Agreement” between DSM and Ceradyne, misappropriation of trade secrets, conversion, tortious interference with existing and prospective business relations,

and unfair and deceptive trade practices, and alleges that DSM is entitled to damages and injunctive relief. (Am. Compl. ¶¶ 37–99.)

33. By Order and Opinion dated May 12, 2015, the Court granted Thagard’s motion for judgment on the pleadings as to DSM’s claim against Thagard for breach of fiduciary duty, dismissing that claim. *See DSM Dyneema, LLC v. Thagard*, 2015 NCBC LEXIS 50, at *29 (N.C. Super. Ct. May 12, 2015). Additionally, in its brief in opposition to the Motions, DSM indicates that it unconditionally “consents to dismissing” its claims against all Defendants for conversion and tortious interference with the Know-How License Agreement. (Pl.’s Br. Opp’n Defs.’ Mots. Summ. J. 46 n.239 [hereinafter “DSM Br.”], ECF No. 379.)

34. After the close of a lengthy and complicated discovery process, Defendants filed the Motions on January 12, 2018, seeking summary judgment as to all remaining claims. DSM acknowledges that all of its claims are dependent on the survival of its claim for misappropriation of trade secrets under Chapter 66 of the North Carolina General Statutes. (DSM Br. 46 n.239 (“The remainder of DSM’s Claims survive summary judgment to the extent that DSM’s [misappropriation of trade secrets claim] does.”).)

II.

LEGAL STANDARD

35. Summary judgment is proper only “if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that any party is entitled to

judgment as a matter of law.” N.C. R. Civ. P. 56(c). “[A]n issue is genuine if it is supported by substantial evidence,” and “an issue is material if the facts alleged would constitute a legal defense, or would affect the result of the action, or if its resolution would prevent the party against whom it is resolved from prevailing in the action[.]” *DeWitt v. Eveready Battery Co.*, 355 N.C. 672, 681, 565 S.E.2d 140, 146 (2002). “Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion and means more than a scintilla or a permissible inference.” *Id.*

36. The Court views the evidence presented “in the light most favorable to the nonmoving party.” *Day v. Rasmussen*, 177 N.C. App. 759, 762, 629 S.E.2d 912, 914 (2006). However, affidavits must “set forth such facts as would be admissible in evidence, and shall show affirmatively that the affiant is competent to testify[.]” N.C. R. Civ. P. 56(e).

37. The moving party bears the burden of establishing a lack of any triable issue and may meet this burden by “proving that an essential element of the opposing party’s claim is nonexistent, or by showing through discovery that the opposing party cannot produce evidence to support an essential element of his claim or cannot surmount an affirmative defense which would bar the claim.” *Roumillat v. Simplistic Enters., Inc.*, 331 N.C. 57, 62–63, 414 S.E.2d 339, 341–42 (1992).

38. “Once the party seeking summary judgment makes the required showing, the burden shifts to the nonmoving party to produce a forecast of evidence demonstrating specific facts, as opposed to allegations, showing that he can at least

establish a *prima facie* case at trial.” *Gaunt v. Pittaway*, 139 N.C. App. 778, 784–85, 534 S.E.2d 660, 664 (2000). The nonmoving party “may not rest upon the mere allegations or denials of his pleading, but his response, by affidavits or as otherwise provided in [Rule 56], must set forth specific facts showing that this is a genuine issue for trial. If he does not so respond, summary judgment, if appropriate, shall be entered against him.” N.C. R. Civ. P. 56(e). Thus, a “motion for summary judgment allows one party to force his opponent to produce a forecast of evidence which he has available for presentation at trial to support his claim or defense.” *Dixie Chem. Corp. v. Edwards*, 68 N.C. App. 714, 717, 315 S.E.2d 747, 750 (1984).

III.

LEGAL ANALYSIS

A. Misappropriation of Trade Secrets

39. DSM contends on summary judgment that Defendants misappropriated the following DSM trade secrets: (i) DSM’s “proprietary resin selection method,” which allows DSM to “quickly identify, test, and select optimal resin systems” through [REDACTED] (“Resin Selection Process”); (ii) treating fibers using plasma and scouring (“Plasma and Scouring”); (iii) the temperature at which UD materials are molded (“Molding Conditions”); and (iv) the key “input parameters” used in connection with DSM’s [REDACTED], (collectively, the “Alleged Trade Secrets”). DSM also contends that, while at DSM, Thagard “authored a blueprint for how to . . . improve the performance of DSM’s X31/HB-80.” (DSM Br. 2.) According to DSM, the “blueprint” incorporated DSM’s proprietary Resin Selection Process and

[REDACTED] trade secrets, as well as the use of “stronger,” high tenacity fiber. (DSM Br. 3.) DSM argues that Defendants used the “blueprint” to develop Honeywell’s SR-5231 material.

40. Thagard and Honeywell¹¹ seek dismissal of DSM’s trade secrets claim, arguing that the undisputed facts show that (i) DSM failed to describe certain of its Alleged Trade Secrets with sufficient particularity,¹² (ii) DSM failed to demonstrate the existence of protectable trade secrets, (iii) DSM has not offered any evidence of misappropriation, (iv) Honeywell’s products were developed independently, and

¹¹ Thagard and Honeywell advance different, though related, arguments in favor of dismissal. For ease of reference, the Court will attribute all arguments to Defendants generally.

¹² The sufficiency of DSM’s identification of its alleged trade secrets has been a recurring issue in this case. By Order and Opinion dated October 17, 2014, the Court concluded that DSM had not identified its trade secrets with sufficient particularity at the pre-discovery stage of the litigation to require Honeywell to produce its own confidential information, noting that DSM’s trade secret descriptions were “broadly stated, lack[ed] particularity and in large part appear[ed] to simply identify features that are common to all ballistic materials or common to the development and manufacture of ballistic materials.” *DSM Dyneema, LLC*, 2014 NCBC LEXIS 51, at *17–20. DSM subsequently supplemented its identification of relevant trade secrets by providing a 14-page, single-spaced narrative description concerning the fibers, materials, and processes that it uses to make UD materials (hereinafter “DSM’s Exhibit A”). *DSM Dyneema, LLC*, 2015 NCBC LEXIS 50, at *24. Honeywell again refused to respond to DSM’s discovery requests seeking confidential information, arguing that DSM’s Exhibit A was inadequate. *Id.* at *6–7. In its May 12, 2015 Order and Opinion, the Court concluded that, while DSM’s Exhibit A did “not appear to specify with exact precision which alleged trade secrets Defendants are alleged to have misappropriated,” DSM was entitled to discover Honeywell’s confidential and trade secret information. *Id.* at *26–27. In reaching this conclusion, the Court recognized the “inherent difficulty” DSM faced in identifying “which portions of its trade secrets” had allegedly “been misappropriated *prior to the receipt of discovery* from Defendants.” *Id.* at *27 (emphasis added). By letter to the Court dated April 4, 2016, Honeywell again raised issues with DSM’s identification of its alleged trade secrets in Exhibit A. (See Honeywell Defs.’ Letter to Court, ECF No. 206.) At an April 11, 2016 telephone conference on the issues raised in Honeywell’s letter, the Court reiterated the need for DSM to amend or supplement Exhibit A to ensure that it accurately reflects *only* the trade secrets that DSM contends were misappropriated. DSM has not meaningfully updated Exhibit A since December 2014. (Compare Pl.’s Renewed Mot. Compel Ex. A, ECF No. 94, with TEx. A, ECF No. 349.2.)

(v) DSM failed to establish evidence of damages sufficient to sustain its claim.¹³ As set out more expansively below, the Court concludes that DSM has failed to forecast sufficient evidence from which a factfinder could reasonably conclude that Defendants misappropriated any of DSM's Alleged Trade Secrets, necessitating dismissal of DSM's Chapter 66 claim. As will also be explained below, the Court bases its decision as to certain Alleged Trade Secrets on additional grounds cited by Defendants. The Court declines, however, to address every argument Defendants make in support of their Motions, some or all of which may likewise be meritorious but which, in most instances, reflect "closer calls" under Rule 56 than the grounds upon which the Court has chosen to rest its decision.

41. North Carolina's Trade Secret Protection Act (the "NCTSPA") provides that "[t]he owner of a trade secret shall have remedy by civil action for misappropriation of his trade secret." N.C. Gen. Stat. § 66-153. A trade secret is defined under the NCTSPA as follows:

business or technical information, including but not limited to a formula, pattern, program, device, compilation of information, method, technique, or process that:

(a) [d]erives independent actual or potential commercial value from not being generally known or readily ascertainable through independent development or reverse engineering by persons who can obtain economic value from its disclosure or use; and

¹³ In light of its conclusions below, the Court declines to consider whether Defendants are entitled to summary judgment on the basis that DSM has not provided a calculation of its alleged damages and failed to designate a damages expert.

(b) [i]s the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Id. § 66-152(3).

42. North Carolina courts consider the following six factors in determining whether information constitutes a trade secret:

(1) [t]he extent to which information is known outside the business; (2) the extent to which it is known to employees and others involved in the business; (3) the extent of measures taken to guard secrecy of the information; [(4)] the value of information to business and its competitors; [(5)] the amount of effort or money expended in developing the information; and [(6)] the ease or difficulty with which the information could properly be acquired or duplicated by others.

Wilmington Star-News, Inc. v. New Hanover Reg'l Med. Ctr., Inc., 125 N.C. App. 174, 180–81, 480 S.E.2d 53, 56 (1997). These factors overlap, and courts do not always examine them separately and individually. *SCR-Tech LLC v. Evonik Energy Servs. LLC*, 2011 NCBC LEXIS 27, at *34 (N.C. Super. Ct. July 22, 2011).

43. A successful NCTSPA claim requires a plaintiff to “identify a trade secret with sufficient particularity so as to enable a defendant to delineate that which he is accused of misappropriating and a court to determine whether misappropriation has or is threatened to occur.” *Krawiec v. Manly*, 370 N.C. 602, 609–10, 811 S.E.2d 542, 547–48 (2018) (quoting *Washburn v. Yadkin Valley Bank & Tr. Co.*, 190 N.C. App. 315, 326, 660 S.E.2d 577, 585 (2008)); see *Panos v. Timco Engine Ctr., Inc.*, 197 N.C. App. 510, 519, 677 S.E.2d 868, 875 (2009) (“Summary judgment should be granted upon the nonmovant’s failure to identify that information which it claims to be a trade secret that was misappropriated.”). A plaintiff may not simply make “general allegations in sweeping and conclusory statements, without specifically identifying

the trade secrets allegedly misappropriated[.]” *Washburn*, 190 N.C. App. at 327, 660 S.E.2d at 585–86; see *Analog Devices, Inc. v. Michalski*, 157 N.C. App. 462, 468–69, 579 S.E.2d 449, 453–54 (2003).

44. “Once a plaintiff has demonstrated that it has a trade secret, it must also present ‘substantial evidence’ of misappropriation[.]” *Safety Test & Equip. Co. v. Am. Safety Util. Corp.*, 2015 NCBC LEXIS 40, at *28 (N.C. Super. Ct. Apr. 23, 2015). A claimant must “identify the *actual acts* of misappropriation with adequate specificity” so as to enable the Court “to determine whether misappropriation has or is threatened to occur.” *Id* at *28–29 (emphasis added). Under the NCTSPA, “[m]isappropriation’ means acquisition, disclosure, or use of a trade secret of another without express or implied authority or consent, unless such trade secret was arrived at by independent development, reverse engineering, or was obtained from another person with a right to disclose the trade secret.” N.C. Gen. Stat. § 66-152(1).

45. The NCTSPA sets out the following scheme for shifting the burden of production:

Misappropriation of a trade secret is prima facie established by the introduction of *substantial evidence* that the person against whom relief is sought both:

- (1) Knows or should have known of the trade secret; and
- (2) Has had a specific opportunity to acquire it for disclosure or use or has acquired, disclosed, or used it without the express or implied consent or authority of the owner.

This prima facie evidence is rebutted by the introduction of substantial evidence that the person against whom relief is sought acquired the information comprising the trade secret by independent development, reverse

engineering, or it was obtained from another person with a right to disclose the trade secret.

Id. § 66-155 (emphasis added).

46. A misappropriation of trade secrets claim “may be proven through circumstantial evidence.” *Med. Staffing Network, Inc. v. Ridgway*, 194 N.C. App. 649, 658, 670 S.E.2d 321, 329 (2009). Nevertheless, in applying section 66-155’s framework to an employer/former employee relationship such as that between DSM and Thagard, courts have recognized several common-sense limitations on the inferences a plaintiff may rely on to prove their claim, beginning with the following:

Evidence that a former employee had access to, and therefore an ‘opportunity to acquire,’ an employer’s trade secrets, without more, is not sufficient to establish a prima facie case of misappropriation. Rather, the employer must establish either that the former employee accessed its trade secrets without authorization or provide other sufficient evidence of misappropriation to raise an inference of actual acquisition or use of its trade secrets.

Am. Air Filter Co. v. Price, 2017 NCBC LEXIS 9, at *22–23 (N.C. Super. Ct. Feb. 3, 2017); see *RLM Commc’ns, Inc. v. Tuschen*, 831 F.3d 190, 201 (4th Cir. 2016) (noting that if authorized access alone were sufficient “an absurd result would follow: Every employee in North Carolina who had access to her employer’s trade secrets but did not acquire them would have to go to trial to fend off the employer’s claim of misappropriation”); *Modular Techs., Inc. v. Modular Sols., Inc.*, No. COA06-813, 2007 N.C. App. LEXIS 1592, at *9 (N.C. Ct. App. July 17, 2007) (requiring a showing of “substantial evidence” that a defendant “acquired the information *for disclosure or use, or disclosed or used* the information”); *Bldg. Ctr., Inc. v. Carter Lumber of the N., Inc.*, 2017 NCBC LEXIS 85, at *23 (N.C. Super. Ct. Sept. 21, 2017) (“While

[Defendant's] employment with Plaintiff gave him an 'opportunity to acquire' the information contained in Plaintiff's sales systems, [Defendant's] access was *authorized*. Plaintiff has produced no evidence giving rise to an inference that [Defendant] has used Plaintiff's trade secrets in any unauthorized or improper way."); *Addison Whitney, LLC v. Cashion*, 2017 NCBC LEXIS 23, at *18 (N.C. Super. Ct. Mar. 15, 2017) ("[A] wrongdoer's access to and opportunity to acquire a trade secret—without more—is insufficient.").

47. Further, evidence that an employee gained general "knowledge and experience" from working with a former employer "does not constitute misappropriation of trade secrets under North Carolina law." *RLM Commc'ns, Inc. v. Tuschen*, 66 F. Supp. 3d 681, 696 (E.D.N.C. 2014), *aff'd* 831 F.3d 190 (4th Cir. 2016); *see Unimin Corp. v. Gallo*, 2014 NCBC LEXIS 44, at *49 n.12 (N.C. Super. Ct. Sept. 4, 2014) ("Even where an enforceable non-disclosure agreement is present, North Carolina law permits a former employee to 'take with him, at the termination of his employment, general skills and knowledge acquired during his tenure with his former employer[.]'" (quoting *Eng'g Assocs., Inc. v. Pankow*, 268 N.C. 137, 140, 150 S.E.2d 56, 58–59 (1966))).

48. Our Court of Appeals has also held that "any correlation between" a former employee's work "and the subsequent success" of her future employer "does not imply the success was gained as a result of the application of any trade secrets possibly gleaned by [the employee] during her tenure" with the plaintiff. *Modular Techs., Inc.*, 2007 N.C. App. LEXIS 1592, at *12; *see RLM Commc'ns, Inc.*, 831 F.3d at 202–03.

49. Thus, though a plaintiff may rely on circumstantial evidence to prove its misappropriation claim, there must still be “*substantial evidence* (1) that the wrongdoer accessed the trade secret without consent, or (2) of misappropriation resulting in an inference of actual acquisition or use of the trade secret.” *Addison Whitney, LLC*, 2017 NCBC LEXIS 23, at *18. “A party cannot withstand summary judgment if it offers only mere speculation of misappropriation instead of evidence supported by the facts.” *Amerigas Propane, L.P. v. Coffey*, 2015 NCBC LEXIS 98, at *34–35 (N.C. Super. Ct. Oct. 15, 2015); see *Wells Fargo Ins. Servs. USA, Inc. v. Link*, 2018 NCBC LEXIS 42, at *40 (N.C. Super. Ct. May 8, 2018) (“The Court is not required to accept [plaintiff’s] conclusory speculation regarding [defendant’s] alleged misappropriation of trade secrets.”), *aff’d per curiam*, No. 300A18, 2019 N.C. LEXIS 382 (N.C. May 10, 2019).

50. Once a NCTSPA plaintiff “establishes a *prima facie* case, the burden of proof shifts to the defendant who may rebut the allegation by introducing substantial evidence that the trade secret was acquired through ‘independent development, reverse engineering, or . . . was obtained from another person with a right to disclose the trade secret.’” *Combs & Assocs., Inc. v. Kennedy*, 147 N.C. App. 362, 369, 555 S.E.2d 634, 639 (2001) (quoting N.C. Gen. Stat. § 66-155).

51. As this Court has noted, “[e]vidence of independent development is . . . potentially relevant both to the statutory defense of independent development and to the factor used in defining a trade secret by the ease or difficulty with which the information could properly be acquired and used.” *SCR-Tech LLC*, 2011 NCBC

LEXIS 27, at *50. Our Court of Appeals has also indicated that evidence of a defendant's independent development—or lack thereof—may be a relevant consideration where a plaintiff seeks an inference of misappropriation by relying on circumstantial evidence. *See Armacell LLC v. Bostic*, No. COA09-1160, 2010 N.C. App. LEXIS 1278, at *31–33 (N.C. Ct. App. July 20, 2010) (concluding plaintiff came forward with “sufficient circumstantial evidence” to support an inference of misappropriation because, *inter alia*, defendants “were not developing an [ethylene propylene diene methylene] product prior to working” with plaintiff's former employee). It logically follows that, where a plaintiff contends that the absence of evidence of a defendant's independent development supports an inference of misappropriation, contrary evidence of independent development necessarily may be considered when assessing the reasonableness of that inference. *Cf. Bald Mountain Park, Ltd. v. Oliver*, 863 F.2d 1560, 1564 (11th Cir. 1989) (“In passing upon a motion for summary judgment, a finding of fact which may be inferred but not demanded by circumstantial evidence has no probative value against positive and uncontradicted evidence that no such fact exists.”).

52. Here, DSM primarily contends that Defendants used DSM's Alleged Trade Secrets in developing Honeywell's materials, specifically SR-5231, for the ECH Program. At the May 10 Hearing, DSM's counsel also suggested that Thagard may have improperly acquired confidential DSM information by downloading information from his DSM computer onto USB drives prior to his departure. The Court begins its analysis by addressing the parties' arguments as to the specific Alleged Trade

Secrets, then turns to DSM's general contention that Thagard may have improperly accessed and downloaded DSM information.

1. Resin Selection Process

53. DSM contends that Defendants misappropriated its alleged Resin Selection Process trade secret, which, according to DSM, enables DSM to quickly identify, test, and select optimal resin systems through the use of [REDACTED].¹⁴ (See DSM Br. 6, 13–20, 41–42.) DSM specifically contends that it “developed a reliable method for identifying optimal resin systems for ballistic applications,” that the “method consisted of conducting [REDACTED] of UD materials constructed from those resins. (DSM Br. 15.) Defendants contend that DSM's claim as to the alleged Resin Selection Process trade secret should be dismissed because (i) DSM does not have a trade secret in the Resin Selection Process and (ii) DSM has failed to offer evidence to support an inference of misappropriation of that process. The Court agrees with Defendants that DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated its alleged Resin Selection Process trade secret and thus assumes, but declines to decide whether, that process constitutes a trade secret in the first instance.

a. Resin Selection Process: Background

54. The undisputed evidence shows that, in UD materials, “the role of the resin (or ‘matrix’) is to hold the fibers together and distribute the energy of impact between fibers and layers of the sheet.” (Reitman Aff. ¶ 47.) To qualify for the ECH Program,

¹⁴ The terms [REDACTED] are interchangeable, with [REDACTED] the preferred Dutch articulation. (Werff Dep. 140:9–13.)

helmets were required to pass both resistance to penetration (i.e., V_{50}) and BFD testing at three different temperatures: -60°F, 70°F, and 160°F. (Werff Aff. ¶ 31.) UD material may perform well at one temperature but poorly at a different temperature because of the resulting change in resin stiffness. (Werff Aff. ¶ 31.) This is especially true for BFD performance. (Werff Aff. ¶ 31.)

55. There are hundreds of polyurethane (“PUR”) resins available from which UD manufacturers, including Honeywell and DSM, may choose. (Werff Aff. ¶ 33.) According to DSM’s principal scientist, Harm van der Werff, “[t]esting each resin for use in a single application like helmets would be, as a practical matter, both cost and time prohibitive.” (Werff Aff. ¶ 33.) According to DSM, **[REDACTED]** a cost-effective alternative for assessing resins.

56. DMTA is a methodology of testing stiffness as a function of temperature. (Werff Aff. ¶ 29; 1st Thagard Aff. ¶ 75.) To obtain DMTA data, films are created from resin, which are then tested at various temperatures using a DMTA machine. (Werff Aff. ¶ 34; 1st Thagard Aff. ¶ 75.) Once DMTA data for a group of resins is obtained, the data for each resin is plotted on a graph to compare the stiffness of the resins at various temperatures. (Werff Aff. ¶ 35; 1st Thagard Aff. ¶ 75 (“DMTA curves . . . provide the modulus of just the resin as a function of temperature.”).) Stated differently, DMTA curves “show [a resin’s] stiffness . . . and how [that] stiffness changes within a range of temperatures.” (1st Thagard Aff. ¶ 75.)

57. At the outset, the Court notes that DSM does not claim or have a trade secret in the general use of DMTA to determine resin stiffness at various temperatures.

(See, e.g., Reitman Dep. 107:8–10, 113:13–14 (stating that DMTA “is a common method for looking at the stiffness of resins over a range of temperatures” that “has been around for a long time”); Van Es. Dep. 264:19–265:12 (noting that DMTA machines are commercially available); 1st Thagard Aff. ¶ 75; Werff Aff. ¶ 34 (“Manufacturers of resins do not *typically* measure or provide DMTA graphs or information.” (emphasis added)); HWEx. 132, at HNY-00223448, ECF No. 395.) Indeed, a book written by a Honeywell employee in 2006 (the “Bhatnagar Book”) states as follows: “Correlated with the results of [DMTA], these trends indicated that the stiffness of resin matrices plays an important role in controlling the ballistic impact resistance of Spectra fiber composites.” (Bhatnagar Book 264.) Additionally, Thagard was trained on the use of DMTA while in graduate school. (Suppl. Aff. J. Thagard ¶ 3 [hereinafter “2nd Thagard Aff.”], ECF No. 390.)

58. DSM argues that its trade secret lies not in the use of [REDACTED], (TEx. A, at 6 [hereinafter “DSM Exhibit A”], ECF No. 349.2), and that [REDACTED], (DSM Br. 15). Specifically, in 2008, DSM was “working to lower [BFD] by looking for a new resin system.” (Werff Aff. ¶¶ 28, 52.) In an October 2008 e-mail from Werff to Thagard, Werff stated that, “[REDACTED].”¹⁵ (Werff Aff. ¶ 53; see Werff Aff. Ex. M, ECF No. 376.10.) According to DSM, this research led DSM to conclude “[REDACTED].” (TEx. 20, at 6, ECF No. 349.6.)

¹⁵ Young’s modulus (E) is a measurement of stiffness. (Werff Aff. ¶ 29.) Pascals (Pa) is a unit of pressure used to quantify, among other things, Young’s modulus. (2nd Thagard Aff. 7 n.6.)

b. Resin Selection Process: Evidence of Misappropriation

59. Defendants argue that even if DSM has a trade secret in its Resin Selection Process, DSM's claim must nevertheless fail because DSM has not come forward with any evidence of misappropriation. The Court agrees.

60. It is undisputed that while Thagard was employed at DSM, he had authorized access to DSM's research into [REDACTED]. (See, e.g., DSM Exhibit A, at 6.) DSM contends, however, that Thagard shared information related to DSM's Resin Selection Process with Honeywell, and that Defendants used this process in selecting a resin, [REDACTED], for use in Honeywell's SR-5231. (DSM Br. 5–6, 17–20.)

61. DSM has not come forward with direct evidence that Honeywell acquired from Thagard, or that Defendants otherwise used information related to, DSM's Resin Selection Process in developing Honeywell's SR-5231. As circumstantial evidence of misappropriation, however, DSM argues that (i) prior to Thagard's arrival, Honeywell generally "did not know how to identify optimal resin candidates," (DSM Br. 5–6), and (ii) "[i]mmediately after Dr. Thagard started at Honeywell, [REDACTED]" internal Honeywell presentations, (DSM Br. 17–20). DSM's contentions are without evidentiary support.

62. As an initial matter, it is undisputed that [REDACTED], the resin used in Honeywell's SR-5231, does not fall within DSM's [REDACTED]. In fact, the

undisputed record shows that at room temperature, [REDACTED].¹⁶ (1st Thagard Aff. ¶ 79; 1st Thagard Aff. Ex. 22, ECF No. 350.22; 2nd Thagard Aff. ¶¶ 21–22.)

63. In support of its contention that Honeywell “had an inadequate understanding of resin systems” prior to Thagard’s arrival, (DSM Br. 5–6), DSM points to a December 2009 internal Honeywell presentation, which stated that a “systematic approach [was] needed to identify key resin attributes that influence ballistic/structural performance.” (DSMEx. 26, at 4, ECF No. 374.26.) DSM also offers an internal Honeywell presentation from April 2010 stating that Honeywell’s “[o]bjective” was to “[d]evelop predictive tools for screening fiber-resin systems without having to produce large quantities of time consuming shield material necessary for full-scale helmet evaluations.” (DSMEx. 28, at HNY-00136642, ECF No. 374.28.)

64. The undisputed facts of record show, however, that Honeywell made substantial progress in its efforts to select a new resin for helmet UD materials prior to Thagard’s arrival on July 19, 2010. As early as 2009, Honeywell discussed with Ceradyne the need to develop a stiffer resin system. (Brachos Dep. 164:14–22.) No later than July 2009, Honeywell began evaluating new resins as a method of reducing BFD. (TEx. 35, at 1–10, ECF No. 349.21; *see* Wagner Dep. 304:25–313:22; Grunden Dep. 248:14–253:23.) Indeed, by August 2009, Honeywell began a “[r]esin program,” which sought to “[d]evelop new resin with improved structural, temperature and [BFD] performance through resin selection.” (TEx. 101, at 10, ECF No. 396.7; *see*

¹⁶ [REDACTED]

TEEx. 35, at 27.) That same month, Honeywell established “selection criteria” and “[s]creening protocols” for potential resins. (TEEx. 102, at 6, ECF No. 396.8.)

65. Honeywell decided to [REDACTED] no later than September 2009. (DSMEx. 111, at HNY-01101537, ECF No. 376.44; HWEx. 130, at HNY-01101537, ECF No. 395.) Also in September 2009, [REDACTED]—the resin that was ultimately used in SR-5231—was selected for testing, among other potential resins. (TEEx. 106, at 6, ECF No. 396.12; *see* DX116, at HNY-00044850, ECF No. 349.128.) Internal Honeywell documents from October 2009 show that Honeywell’s resin program was focused on identifying “stiffer material (improved tensile/flexural modulus)” and that “[i]mproved stiffness” was “needed.” (DX76, at 3, ECF No. 349.113.) In January 2010, resin cast films for [REDACTED] were “completed.”¹⁷ (TEEx. 35, at 204, 215.) By May 2010, Honeywell had the results of BFD testing performed on materials made with [REDACTED]. (TEEx. 35, at 594, 604.) On July 6, 2010, Honeywell internal documents show that a [REDACTED] [was] developed to characterize resin properties for the low delamination project.” (TEEx. 95, at 199, ECF No. 396.3.)

66. DSM’s contention that “[i]mmediately *after* Dr. Thagard started at Honeywell, [REDACTED] *begin* to appear in” internal Honeywell presentations and that the “first single-resin [REDACTED] . . . appeared in a July 23, 2010 presentation,” (DSM Br. 17–18 (emphasis added) (citing DSMEx. 109, ECF No. 376.42)), is not supported by the evidentiary record. To the contrary, the exact same [REDACTED] upon which DSM relies was included in an internal Honeywell

¹⁷ As noted, to obtain [REDACTED]. (Werff Aff. ¶ 34.)

presentation dated July 13, 2010 (i.e., one week before Thagard joined Honeywell). (See HWEx. 132, at HNY-00223448.) The first [REDACTED] data appears in a July 28, 2010 internal Honeywell presentation, only two weeks after Thagard's arrival, (see DSMEEx. 110, at 10, ECF No. 376.43), and DSM offers no evidence to suggest that Thagard had anything to do with the preparation of the [REDACTED].

67. DSM has not offered any evidence tending to show that Thagard was involved in the selection of [REDACTED] for use in SR-5231. Nor has DSM offered any evidence that Honeywell relied on the [REDACTED]. That Honeywell ultimately selected [REDACTED] for use in SR-5231 after Thagard began working at the company is insufficient circumstantial evidence to permit an inference of misappropriation in light of the undisputed evidence showing Honeywell's substantial efforts to identify, test, and select a stiffer resin for the ECH Program before Thagard's Honeywell employment.¹⁸ See *Modular Techs., Inc.*, 2007 N.C. App. LEXIS 1592, at *12 ("Plaintiff's evidence rises to no more than an assertion of *post hoc, ergo propter hoc* which we find insufficient as a matter of law to support plaintiff's claim against defendants for misappropriation of trade secrets."¹⁹); *Safety Test &*

¹⁸ It is worth noting that internal DSM documents generated after this action was filed reflected that the "[r]eason" Honeywell won the ECH Program "was probably the resin system of Honeywell." (HWEx. 61, at 18.) Indeed, internal DSM documents show that, in March 2013, Ceradyne "stressed the need for DSM to look into a new resin" and that "stiffer resin [was] necessary." (HWEx. 138, ECF No. 395.) DSM did not change the resin system in either [REDACTED].

¹⁹ "The maxim *post hoc, ergo propter hoc*, denotes the fallacy of . . . confusing sequence with consequence, and assumes a false connection between *causation* and temporal sequence." *Young v. Hickory Bus. Furniture*, 353 N.C. 227, 232, 538 S.E.2d 912, 916 (2000) (quotation marks omitted).

Equip. Co., 2015 NCBC LEXIS 40, at *28–29 (noting that a trade secret claimant must “identify the actual acts of misappropriation with adequate specificity”).

68. For each of these reasons, the Court concludes that DSM’s claim as to its alleged Resin Selection Process trade secret should be dismissed under Rule 56 for failure to offer any evidence of misappropriation.²⁰

2. Plasma and Scouring

69. DSM also contends that Defendants misappropriated its alleged trade secret in Plasma and Scouring.²¹ (See DSM Br. 3, 7, 20–24.) DSM specifically claims as a trade secret the *general* process of [REDACTED]²² [REDACTED].²³ (DSM Br. 20–22.) Defendants argue that DSM’s claim as to its alleged Plasma and Scouring trade secret fails because (i) DSM does not have a Plasma and Scouring trade secret,

²⁰ As previously noted, in light of the Court’s conclusion, the Court declines to address Defendants’ contention that DSM has failed to show that it had a trade secret in the use of [REDACTED].

²¹ As discussed *infra*, DSM also advances arguments related to Plasma and Scouring in connection with its purported “blueprint” theory.

²² Eabs is a measure of absorbed energy and “the impact resistance of materials.” (Werff Dep. 136:17–137:19.)

²³ In its brief in opposition to the Motions, DSM conflates V₅₀/Eabs performance with BFD performance by using the general term “ballistic performance.” Undisputed evidence confirms that “ballistic performance” is generally used to describe V₅₀/Eabs performance, not BFD performance. (Fitzgerald Dep. 207:1–13 (noting that stiffer resins “should have better structural and [BFD] performance and lower penetration or ballistic performance”), 214:17–20 (“Q. And when we use the term “ballistic performance,” is that synonymous with the tests that we’ve seen, like V50 tests or V0 tests? A. Correct.”); Werff Dep. 260:20–261:9 (“Fiber strength is important for the ballistic application, for the ballistic performance, the V50 performance.”); Miller Dep. 70:21–71:10 (“[L]ooking at [BFD] wasn’t a ballistic test.”); Brachos Dep. 115:14–116:6.) V₅₀/Eabs performance and BFD performance are fundamentally different. (See, e.g., 2nd Thagard Aff. ¶ 25; TEx. 133, at C3L14–L41, ECF No. 396.38; DSMEx. 42, ECF No. 374.42.)

(ii) DSM has failed to offer any evidence of misappropriation, and (iii) **[REDACTED]**.

The Court agrees that DSM has failed to demonstrate the existence of a Plasma and Scouring trade secret, and further, that DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated any such trade secret. The Court declines to consider as an additional basis for dismissal whether Honeywell independently developed its own plasma and scouring treatment.

a. Plasma and Scouring: Background

70. Scouring is the process of removing the spin finish from fiber. (2nd Thagard Aff. ¶ 34; Werff Aff. ¶ 42.) As described in a Honeywell patent titled Enhanced Ballistic Performance of Polymer Fibers (the “518 Patent”), the application for which was filed prior to Thagard’s arrival at the company, “[f]iber scouring is a process in which fibers . . . are passed through a chemical solution which removes any of the undesirable residual fiber finish . . . that may have been applied to the fibers during or after fabrication.” (TEx. 2, at C13L33–37; *see* Bhatnagar Book 280–81.) In essence, scouring treatment washes spin-finish from the surface of fibers. (Werff Aff. ¶ 45.)

71. Plasma treatment chemically modifies the surface of an object. (Werff Dep. 159:23–25.) As described in Honeywell’s ‘518 Patent, plasma treatment “involves treating a fiber . . . with an electric discharge in a vacuum chamber filled with either oxygen, ammonia or another appropriate inert gas as is well known in the art.” (TEx. 2, at C8L53–C9L50; *see* Werff Aff. ¶ 42 (“Plasma treatment is basically putting the fiber through a gas that has been subjected to electric discharge and thus contains

reactive elements.”); Bhatnagar Book 281–82.) In the context of UD materials, plasma roughens the surface of fiber and thereby improves adhesion with resin (i.e., strengthens the fiber-resin bond). (Phoenix Dep. 355:14–361:23, ECF No. 358; Hurst Dep. 254:12–24, ECF No. 358; Bhatnagar Book 281–82.)

72. [REDACTED]

73. DSM does not use [REDACTED] in connection with any of its UD materials. (Werff Dep. 160:1–15; Beard Dep. 198:16–23; DSM Exhibit A, at 12–13.) DSM contends, however, that it “amassed a great deal of know-how regarding plasma treatment technology under a research program prior to and during Dr. Thagard’s employment with DSM.” (DSM Exhibit A, at 12–13.) Specifically, between 2006 and 2007, DSM began exploring the use of plasma treatment as a way of [REDACTED], (Werff Dep. 162:17–24; DSMEEx. 73, ECF No. 376.6; DSMEEx. 64, ECF No. 375.5), and contracted with a research organization called [REDACTED], (Werff Dep. 162:25–163:11; Werff Aff. ¶¶ 42–43). DSM’s R&D team, together with [REDACTED], conducted a feasibility study culminating with an internal report from DSM’s R&D team in July 2007 [REDACTED]. (DSMEEx. 74, at 1, ECF No. 376.7.) The 2007 [REDACTED] indicated that an improvement of approximately [REDACTED] was observed for [REDACTED]²⁴ [REDACTED]. (DSMEEx. 74, at 1, 3.) The 2007 [REDACTED] recommended that DSM “try to repeat the study with [REDACTED] and, “[i]n case of a positive result[, DSM] should start up-scaling . . . [REDACTED][.]”

²⁴ The fibers subject to the study underlying the 2007 [REDACTED]. (See DSMEEx. 74, at 3, 8.)

(DSMEx. 74, at 4; *see* Werff Aff. ¶ 45.) According to DSM, “[b]y early 2008, DSM had confirmed that [REDACTED].”²⁵ (DSM Br. 22.)

b. Plasma and Scouring: Existence of a Trade Secret

74. Defendants argue that DSM does not have a Plasma and Scouring trade secret because the general use of plasma and scouring treatment on fibers in anti-ballistic materials is generally known in the industry.²⁶ The Court agrees.

75. DSM’s misappropriation claim does not relate to any particular detail or aspect of the plasma and scouring treatment process, such as the specific combination of [REDACTED]. Instead, DSM refers to plasma and scouring treatment in general terms. DSM’s own employees confirmed that the general concept of plasma-treating UHMWPE fibers is not a trade secret. (Cordova Dep. 55:6–18 (“Q. There is no secret at all about plasma being used for [UHMWPE] fibers? . . . A. There is no secret on the use. I mean how you use it, you can go into the details because you [(i.e., Honeywell)] have an expert in your company Hieu Nguyen who knows how to use the plasma treatment.”); Van Es Dep. 163:1–5 (“Q. The fact that plasma treatment will

²⁵ For purposes of this Order and Opinion, the Court will accept as true DSM’s representation that it “confirmed” [REDACTED] by early 2008. The Court has serious reservations, however, as to whether this conclusion is actually supported by any evidence in the record. (*See* Werff Dep. 163:12–164:25, 165:20–166:22, 168:9–173:19, 177:14–182:19, 275:22–276:11; DX93, at 2, ECF No. 349.118; DX95, ECF No. 349.120; DX96, ECF No. 349.121; DX75, at DSM00362211, ECF No. 349.112; Van Es Dep. 158:3–15; DX168, ECF No. 349.153; Fitzgerald Dep. 35:18–37:17; DX372, ECF No. 349.211; Beard Dep. 200:7–201:12, 271:9–272:24.)

²⁶ Defendants also contend that DSM does not have a Plasma and Scouring trade secret because (i) DSM’s research into the use of [REDACTED] failed and (ii) DSM never established a correlation between [REDACTED] during Thagard’s employment. In light of the Court’s conclusions in dismissing this claim, however, the Court declines to reach Defendants’ additional arguments for dismissal.

help adhere resin to fiber is not a trade secret, right? . . . A. It is not a trade secret, I agree.”.)

76. Numerous trade publications also discuss the use of plasma and scouring treatment in connection with UD materials. A 1992 paper co-authored by David Cordova (the “Cordova Paper”)—a former Honeywell employee who now works at DSM—found that, by subjecting Honeywell’s UHMWPE Spectra fiber to plasma treatment, “adhesion of the fiber was improved in a range of 3 to 1.” (Cordova Dep. 49:17–50:3; *see* TEx. 3, at 11, ECF No. 348.20.) The Cordova Paper specifically concluded that “[p]lasma treatment of the polyethylene fiber provides the necessary resin-to-fiber compatibility required for semistructural composites” and that “by plasma etching the fiber surface, one is able to significantly improve the mechanical properties of the composite.” (TEx. 3, at 11; *see* Cordova Dep. 41:8–51:10.) A 2004 book titled *Manufacturing Processes for Advanced Composites* also notes that fiber-resin adhesion can be improved through the use of plasma, scouring, and corona “or combinations of them.” (TEx. 93, at 7, 390–91, ECF No. 396.2.) In addition, the Bhatnagar Book discusses the use of both plasma and scouring treatment in a section titled “[s]urface treatment of ballistic fibers and materials.” (Bhatnagar Book 279–83.)

77. Moreover, patents belonging to both Honeywell and DSM contemplate the use of plasma and scouring treatment. (*See, e.g.*, TEx. 2, at C13L33–37, C8L53–C9L50; DX164, ECF No. 349.151.) For example, a DSM patent from 1993 provides as follows:

The process . . . for producing the plasma-treated articles consisting of highly oriented polyolefins of ultrahigh molecular weight comprises subjecting these articles to plasma treatment of their surface if necessary after pre-cleaning. The pre-cleaning can comprise for example solvent treatment for removing sizes adhering to the surface and serves for making available clean surface of the articles to be treated for the plasma treatment.

(DX107, at C2L47–55, ECF No. 349.124; *see* Werff Dep. 261:18–264:16.) A 1995 Honeywell patent notes that “pretreatments” of fiber, including exposing the fiber surface to “a high voltage corona or plasma” or “scour[ing the fiber] to remove any residual finish,” can be used to “enhance adherence.” (TEx. 129, at C6L27–L46, ECF No. 396.34.) In 2005, Honeywell obtained a patent for the combination of scouring “to remove all finishes” followed by corona treatment to improve “resistance to penetration by ballistic projectiles.” (TEx. 2.C.34, at C3L29–L62, C2L19–L28, C5L45–L60, C10L60–C11L2, C20L4–L41, ECF No. 348.16.) Most notable, however, is Honeywell’s pre-Thagard ’518 Patent, which discusses the use of plasma and scouring treatment as a means of enhancing ballistic performance and incorporates the Cordova Paper by reference. (TEx. 2, at 1, C8L57–C9L50; *see* Wagner Dep. 337:11–339:6; DX119, ECF No. 349.130.)

78. Because DSM’s alleged Plasma and Scouring trade secret relates only to concepts that are generally known in the industry or are readily ascertainable, the Court concludes that DSM has failed to demonstrate the existence of an actionable trade secret in those concepts and summary judgment on that basis is proper. *See Area Landscaping, L.L.C. v. Glaxo-Wellcome, Inc.*, 160 N.C. App. 520, 525, 586 S.E.2d 507, 511 (2003) (“[T]o survive a motion for summary judgment, [a plaintiff] must allege facts that would allow a reasonable finder of fact to conclude that the

information [at issue] was not ‘generally known or readily ascertainable[.]’); *see also SCR-Tech LLC*, 2011 NCBC LEXIS 27, at *38 (“It is well established that information published as a patent cannot be protected as a trade secret.”).

c. Plasma and Scouring: Evidence of Misappropriation

79. The Court also agrees with Defendants that, even if DSM had a Plasma and Scouring trade secret, DSM has failed to come forward with evidence of misappropriation.

80. To support its claim, DSM first points to an e-mail exchange among Honeywell employees in March 2010 relating to a conversation between Thagard and Honeywell’s Steven Brouillard. Specifically, DSM points to a March 29, 2010 e-mail from Lori Wagner to David Hurst and Brouillard summarizing a conversation between Thagard and Brouillard²⁷ as follows:

I talked to Steve [Brouillard]. He related that Thagard told him the difficulties with passing the [BFD] test came from the change to curved from flat shaping on the head form and that even HB-80 was having problems because of the extra 4-5mm. We knew that from this fall the helmet testing results since all the helmets failed and confirms the surprise that all faced. He mentioned that Thagard left - as did/will the others because of lack of opportunity for advancement (hiring Cunningham in over them and eliminating promotion). Also said that Thagard mentioned plasma – oh – if we had only heard that months and months ago.... But he had the name of someone working in that area and I said we would be interested in them – who they were; not that we had a position open. I think the last comment about plasma confirms we need to move aggressively in that direction. Not sure that we are moving fast enough. I would rather see that move forward than a helmet lab – again my wish to concentrate on getting better materials.

²⁷ It is undisputed that Wagner was not present for the conversation between Brouillard and Thagard. Instead, Wagner’s e-mail purports to summarize and document information that Brouillard relayed to Wagner after speaking with Thagard. (Wagner Dep. 124:20–126:14.) DSM did not depose Brouillard during discovery.

(DSMEx. 30, ECF No. 374.30.) In response to Wagner’s e-mail, Brouillard noted that he would “get the information from [Thagard] regarding the person with the plasma background,” and further stated, “[t]oo bad I did not push with him months ago... Seems like [Thagard] would like to see HON give DSM a ‘black eye[.]’” (DSMEx. 30.)

81. Wagner’s March 2010 e-mail covers two separate topics. First, the e-mail suggests that Thagard and Brouillard discussed the source of the “difficulties [DSM’s HB80 was having] with passing the [BFD] test.” (DSMEx. 30.) The ECH Program testing of HB80 and the “difficulties” referenced, however, occurred after Thagard left his employment with DSM. (2nd Thagard Aff. ¶¶ 50–55; Brachos Dep. 164:24–167:5; DX283, ECF No. 349.181; Chabba Dep. 53:8–56:16; DX134, ECF No. 349.136.) Indeed, Wagner’s e-mail notes that Honeywell was aware of this information already. (DSMEx. 30; *see* Wagner Dep. 130:13–131:2 (noting that failures were “common knowledge” in the industry); Thagard Dep. 174:11–19.)

82. Second, Wagner’s e-mail indicates that Thagard “mentioned plasma” and “had the name of someone working in that area.” (DSMEx. 30.) It is undisputed that the person “working in” plasma referenced in Wagner’s e-mail was **[REDACTED]**, a plasma expert. (1st Thagard Aff. ¶ 64; 2nd Thagard Aff. ¶ 49; Thagard Dep. 176:15–177:7; Wagner Dep. 126:18–127:16; Hurst Dep. 221:8–226:22.) Thagard recommended **[REDACTED]** for a position with DSM that same day. (*See* HWEx. 76, ECF No. 360; Van Es Dep. 71:15–73:8; DX123, ECF No. 349.131.) Honeywell never contacted **[REDACTED]** because it had no job openings in that area. (Wagner Dep. 127:5–16.)

83. The Court concludes that Wagner’s March 2010 e-mail, standing alone, is insufficient circumstantial evidence to warrant an inference of misappropriation. While Wagner’s e-mail notes that Thagard’s “comment about plasma confirms we need to move aggressively in that direction[,]” (DSMEx. 30), DSM has not come forward with any evidence tending to show that Thagard’s purported comment was referencing anything other than Thagard’s recommendation that Honeywell consider hiring [REDACTED]. Indeed, according to Wagner, Brouillard did not suggest that Brouillard and Thagard discussed anything plasma-related other than [REDACTED]. (Wagner Dep. 126:17–128:7; *see also* Thagard Dep. 176:15–177:7; 1st Thagard Aff. ¶ 64; 2nd Thagard Aff. ¶ 54 (“As I explained during my deposition, I did not discuss plasma treatment of fibers (or any use of plasma at all) with Mr. Brouillard during that conversation. I never spoke with anyone from Honeywell nor anyone else about plasma treatment of fibers at any time prior to my employment at Honeywell.”).)

84. As further support for misappropriation, DSM purports to offer evidence it contends shows that “[s]hortly after Honeywell hired Dr. Thagard, he [REDACTED] capabilities within Honeywell.” (DSM Br. 22.)

85. DSM first cites an August 2010 e-mail from a [REDACTED] representative to Roy Ash, a Honeywell employee, in which the representative stated:

I got your contact information through a colleague of mine who talked to you on the EuroSatory. We are working within [REDACTED] I’ve added a short presentation and flyer about the technology. This might be interesting for Spectra Fibers.

(DSMEx. 150, ECF No. 376.82.) Ash subsequently forwarded the e-mail to other Honeywell employees, including Thagard. (DSMEx. 150.) Thagard then forwarded Ash's e-mail to Brad Grunden, another Honeywell employee, adding only "FYI." (DSMEx. 150; *see* 2nd Thagard Aff. ¶ 40.) Contrary to DSM's contention, the [REDACTED] representative's e-mail directly contradicts DSM's claim that Thagard "contacted [REDACTED]" and reflects no evidence of misappropriation. (*Cf.* 2nd Thagard Aff. ¶ 39 ("I did not contact [REDACTED] shortly after I was hired by Honeywell."))

86. DSM next cites an October 2010 e-mail chain between Thagard and a [REDACTED] representative that does not relate to plasma, but instead relates to the Dutch MoD helmet. (DSMEx. 151, ECF No. 376.83; *see* 2nd Thagard Aff. ¶¶ 42–45.) This document also fails to support DSM's position.

87. Finally, DSM offers no evidence to support its contention that Thagard circulated information regarding [REDACTED] plasma treatment capabilities within Honeywell. Indeed, the undisputed evidence is precisely to the contrary. (*See* 2nd Thagard Aff. ¶ 41 ("I never shared any DSM plasma information with Honeywell."))

88. DSM also generally contends that, prior to "collaborating" with Thagard, "Honeywell's researchers remained oblivious to the beneficial effect that [REDACTED] have on the ballistic performance of UDC materials, especially with respect to [REDACTED]." (DSM Br. 48.) The undisputed evidence shows, however, that Honeywell began experimenting with fiber surface treatment, including plasma and scouring, for anti-ballistic materials in the 1980s and 1990s. (Wagner Dep.

289:7–292:2.) With respect to helmet applications specifically, it is undisputed that Honeywell’s “Low Delamination” or “Low Delam” team was established no later than July 2009 and was specifically focused on reducing BFD. (See HWEx. 139, at 1, 3, ECF No. 395.) To that end, the Low Delam team immediately began to explore ways to improve fiber-resin adhesion, including through fiber surface treatments such as plasma and scouring. (See HWEx. 139, at 10; HWEx. 140, at 7, 14–15, ECF No. 395.)

89. The undisputed evidence also shows that by August 2009, Honeywell was testing plasma and scour-treated materials, and had commissioned its own plasma treating equipment. (HWEx. 113, at 1, 8, ECF No. 362; Wagner Dep. 298:3–22; Grunden Dep. 250:2–251:21; Chern Dep. 44:14–45:20.) By October 2009, Honeywell had produced scoured fiber and plasma-treated fiber [REDACTED]. (Wagner Dep. 297:9–298:22; HWEx. 115.) By May 2010, Honeywell was granted a permit to conduct large-scale [REDACTED]. (Wagner Dep. 300:4–301:5; HWEx. 63, at 5, ECF No. 360.)

90. Nevertheless, DSM contends that, until receiving assistance from Thagard in March 2010 (as purportedly evidenced by Wagner’s e-mail), “Honeywell believed that [REDACTED] did not have any significant effect on [BFD].” (DSM Br. 7.) For support, DSM points to internal Honeywell documents relating to [REDACTED].²⁸

[REDACTED] However, it is undisputed that Honeywell [REDACTED]²⁹

²⁸ SR-3130 was an experimental material that Honeywell provided to Ceradyne for testing in 2009. (Brachos Dep. 17:20–19:12, 92:10–93:22; Grunden Dep. 242:4–245:6.)

²⁹ The document that DSM cites in support of its statement that corona is “a type of plasma,” (DSM Br. 7 n.32), notes that in “comparing plasma treatment to corona treatment, there is a tendency for plasma treatment to be more stable than corona treatment[.]” (DSMEx. 32, ECF No. 374.32).

[REDACTED] and, as noted, the evidence of record permits but the single conclusion that Honeywell [REDACTED].

91. Accordingly, viewing the evidence in the light most favorable to DSM, the Court concludes that DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated DSM's alleged Plasma and Scouring trade secret.

3. Molding Conditions

92. DSM next contends that Defendants misappropriated DSM's alleged Molding Conditions trade secret. (See DSM Br. 8–10.) For the reasons discussed below, it is unclear exactly which aspect(s) of the UD molding process DSM claims as a trade secret. Nevertheless, it appears DSM focuses its argument on the temperature at which materials are molded and argues that its trade secret lies in molding materials “[REDACTED] performance.”³⁰ (DSM Br. 9–10.) According to DSM, Defendants used this information to improve the BFD performance of Honeywell's pre-Thagard material, SR-3136.

93. Defendants argue that DSM's trade secrets claim as to Molding Conditions fails because (i) DSM never identified the Molding Conditions as a trade secret, (ii) the Molding Conditions do not constitute a trade secret, (iii) DSM has offered no evidence of misappropriation, and (iv) Honeywell independently developed its own optimal molding conditions. The Court agrees with Defendants that DSM's claim as to its alleged Molding Conditions trade secret should be dismissed because DSM

³⁰ For purposes of this Order and Opinion, the Court will accept as true DSM's representation that it [REDACTED].

failed to identify this purported trade secret during discovery, DSM's Molding Conditions do not constitute a legally cognizable trade secret, and DSM has not come forward with evidence of misappropriation. The Court declines to address Defendants' other argument in support of dismissal.

a. Molding Conditions: Background

94. The undisputed evidence shows that neither DSM nor Honeywell sell formed, molded, hard armor products. Instead, both companies provide UD materials and potential processing and manufacturing condition guidelines to customers, including Ceradyne. (*See, e.g.*, DSMEx. 34, ECF No. 374.34.) These customers, in turn, manufacture UD materials into finished products, including helmets, using their own molding equipment and according to their own desired specifications. (Thagard Dep. 218:13–221:22; 2nd Thagard Aff. ¶ 57; Brachos Dep. 50:6–53:10, 57:10–60:21; Swinger Dep. 123:18–126:15, ECF No. 358; Vanek Dep. 237:9–246:4, ECF No. 358.) In developing UD materials, however, both DSM and Honeywell conduct testing in an effort to determine the optimal molding conditions for their respective materials.

95. The parties agree that the optimal molding temperature for any given UD material depends on the material's characteristics. (*See* DX348, at C5L4–L7, ECF No. 396.42; DSM Br. 9–10; 2nd Thagard Aff. Ex. 26, ECF No. 390.4.) As stated in a 2005 DSM patent, “[t]he required compression time and compression temperature depend on the kind of fiber and matrix material and on the thickness of the moulded [(i.e., molded)] article and can be readily determined by one skilled in the art.”

(DX348, at C5L4–L7.) Moreover, the optimal molding temperature varies depending on the type of threat tested. (DSMEx. 33, at 4, ECF No. 374.33; 2nd Thagard Aff. Ex. 26, at HNY-00812480; Werff Aff. ¶ 58 (“[O]ne temperature is often optimal against certain types of ballistic tests while slightly decreasing performance against other types of tests.”).) Thus, the optimal molding temperature for [REDACTED]. (See, e.g., 2nd Thagard Aff. ¶ 60; 2nd Thagard Aff. Ex. 26, at HNY-00812480.)

96. As noted, DSM contends that the optimal molding [REDACTED] and that DSM [REDACTED]. During his employment with DSM, Thagard had authorized access to information related to DSM’s Molding Conditions.³¹

97. DSM asserts that Honeywell did not have the “knowledge to optimize helmet molding conditions to improve the performance of 3136” before hiring Thagard. (DSM Br. 8.) According to DSM, prior to Thagard’s arrival, Honeywell “generally” recommended that customers mold its hard ballistic materials at between 240°F (115°C) to 260°F (127°C), citing Honeywell’s “Processing Guidelines for Honeywell Ballistic Materials” from 2007.³² (DSM Br. 8 n.42 (citing DSMEx. 34).) Those guidelines, however, are not unique to SR-3136 and provide the following disclaimer: “These are general processing guidelines for HON Spectra Shield® ballistic

³¹ While DSM generally contends that Thagard learned about the relationship between molding conditions and UD performance while at DSM, (Werff Aff. ¶ 58), DSM offers no evidence tending to show that Thagard was ever made aware that DSM [REDACTED]. (2nd Thagard Aff. ¶ 58.)

³² DSM also cites a June 2009 internal Honeywell presentation, which notes that *Ceradyne* concluded that a “[REDACTED] with” Honeywell’s SR-3130 (not SR-3136). (DSMEx. 7, at 4, ECF No. 374.7.)

materials. Specific Process parameters should be optimized for the equipment and materials used by our customers.” (DSMEx. 34.)

98. While DSM suggests that Honeywell adopted DSM’s molding temperatures after Thagard’s arrival, DSM has not offered evidence showing the temperature Honeywell recommends for SR-3136. Nor has DSM offered evidence as to the temperature Honeywell recommended that Ceradyne use when molding helmets made with the Honeywell [REDACTED] Solution. Indeed, DSM has failed to offer evidence of the temperature Ceradyne actually uses when molding the ECH Program helmets. Instead, DSM simply cites to a December 2010 internal Honeywell presentation which states that, with respect to SR-3136, a “[REDACTED].” (DSMEx. 53, at 4, ECF No. 374.53.)

b. Molding Conditions: Identification

99. Defendants first argue that DSM’s claim as to its alleged Molding Conditions trade secret must fail because DSM did not identify this purported trade secret in discovery. The Court agrees.

100. At no point during discovery did DSM identify as a trade secret (i) the specific molding [REDACTED]. Indeed, DSM’s description of its trade secrets in DSM’s Exhibit A does not mention, even in passing, the molding process, much less the “optimal” temperature at which UD materials should be molded. DSM offers no explanation why it did not identify its alleged Molding Conditions trade secret in Exhibit A, in a subsequent amendment, in written discovery, or at deposition. Indeed, while DSM’s Exhibit A identifies nearly every step of the UD development and

manufacturing process—most of which are no longer at issue in this case—DSM made no effort to include Molding Conditions as one of its misappropriated trade secrets.

101. DSM nevertheless contends that it adequately disclosed and defined this purported trade secret. (DSM Br. 42.) DSM specifically points to its response to Thagard’s Interrogatory No. 8, which requested that DSM identify its relevant trade secrets. In that response, DSM stated, among twenty-four separately listed items, that “[f]rom ECH project inception to 2013, the areas of DSM know-how that are alleged to have been incorporated into, and/or to have advanced, the current ECH helmet design include, at a minimum: . . . (14) Ways in which manufacturing process variables were adjusted to increase helmet performance: (a) Optimal temperature range for helmet processing[.]” (TEx. 21, at 20–21, ECF No. 349.7; *see* DSMEEx. 105, at 15–16, ECF No. 376.38.) This description can hardly be read to include the now identified Molding Conditions.

102. Moreover, the other evidence that DSM points to as providing notice to Defendants of its Molding Conditions trade secret during discovery is not support at all. Relying on the same response to Interrogatory 8, DSM quotes from a November 2010 e-mail from Thagard to others at Honeywell in which Thagard relayed the results of a Honeywell “study looking at processing temperature effects” of SR-3136 as to BFD and V₅₀ performance. (DSMEEx. 47, at HNY-00304083, ECF No. 374.47; *see* TEx. 21, at 18–19.) After setting forth what he described as “very interesting results,” Thagard notes that “[REDACTED]. We have literally reduced 9mm [BFD] by 6.6mm just through processing effects. This data will need to be repeated[.]”

(DSMEx. 47, at HNY-00304083; *see* TEx. 21, at 18–19.) Thus, the only reference DSM made in this interrogatory response to a specific molding **[REDACTED]** was to a *Honeywell* molding study; it says nothing about DSM’s Molding Conditions at all.

103. Based on the above, the Court concludes that DSM failed to identify the alleged Molding Conditions as a purported trade secret until after discovery in this matter was closed, and the Court concludes, in the exercise of its discretion, that DSM should not be permitted to do so now.

104. Even if DSM’s identifications had put Defendants on notice that DSM contended that its molding conditions were a trade secret, DSM’s descriptions were inadequate to identify the Molding Conditions trade secret with the particularity sufficient to permit Defendants to delineate what they have allegedly misappropriated. *See Krawiec*, 370 N.C. at 609–10, 811 S.E.2d at 547–48; *Panos*, 197 N.C. App. at 519, 677 S.E.2d at 875 (“Summary judgment should be granted upon the nonmovant’s failure to identify that information which it claims to be a trade secret that was misappropriated.”); *see also Next Commc’ns, Inc. v. Viber Media, Inc.*, No. 14-cv-8190, 2017 U.S. Dist. LEXIS 162405, at *10–11 (S.D.N.Y. Sept. 30, 2017) (“In order to survive summary judgment . . . the plaintiff must describe the secrets with greater precision; ‘vague and indefinite’ illustrations will not suffice.”). The Court, therefore, concludes that DSM’s claim based on an alleged Molding Conditions trade secret should be dismissed on each of these grounds.

c. Molding Conditions: Existence of a Trade Secret

105. Defendants further argue that DSM's Molding Conditions do not constitute a legally cognizable trade secret in any event. Even accepting as true the unsupported averment in Werff's summary judgment affidavit that DSM [REDACTED] of its PUR-based UD materials, the Court concludes that DSM has failed to demonstrate the existence of a Molding Conditions trade secret in light of the undisputed evidence.

106. "It is well established that information published as a patent cannot be protected as a trade secret." *SCR-Tech LLC*, 2011 NCBC LEXIS 27, at *38. "Likewise, information published in patent applications lacks the secrecy required to maintain trade secret status." *Id.* Numerous DSM patents and patent applications disclose specific molding temperature ranges for DSM's UD materials that encompass the temperature range DSM claims as a trade secret (i.e., [REDACTED]). (*See, e.g.*, TEx. 125, ECF No. 396.30 (between 257°F and 302°F and setting forth V₅₀ data for DSM UD molded at different temperatures); DX282, at C10L47–L56, ECF No. 349.179 (between 248°F and 293°F); DX348, at C5L32–L36 (between 239°F and 266°F); DX163, at C4L26–L45, ECF No. 349.150 (between 239°F and 275°F); DX442, at 8, ECF No. 349.221; TEx. 132, at C4L57–C5L7, ECF No. 396.37 (between 257°F and 275°F); TEx. 135, at 7–8, ECF No. 396.40.) In fact, DSM licensed one of these patents (the "Van der Loo Patent") to Honeywell years before Thagard arrived at Honeywell. (DX182, ECF No. 349.154; *see* DX348.)

107. Not only has DSM publicly disclosed the molding temperature range it now claims as a trade secret, but DSM's Van der Loo Patent explicitly states that the optimal molding temperature is readily ascertainable. (DX348, at C5L4–L7 (“The required . . . compression temperature . . . *can be readily determined* by one skilled in the art.” (emphasis added)).) Bhatnagar's 2006 Book describes, albeit in general terms, the testing procedures that can be employed to conduct a molding study, (Bhatnagar Book 13–14), and, as discussed below, prior to hiring Thagard, Honeywell itself was conducting temperature molding studies in an effort to maximize the BFD and V_{50} performance of its materials.

108. In any event, there is no evidence to suggest that Honeywell's UD materials would have the same “optimal” molding temperature as DSM's materials. (*Cf.* DX348 C5L4–L7 (noting that the optimal “compression time and compression temperature depend on the kind of fiber and matrix material and on the thickness of the moulded [(i.e., molded)] article”); Reitman Aff. ¶ 105; Brachos Dep. 57:10–60:21.) As discussed throughout this Order and Opinion, Honeywell's materials, including SR-3136, are made with different fibers and resins than DSM's materials. DSM simply assumes that Honeywell's materials have the same “optimal” molding temperature as its own and has failed to demonstrate that the information claimed as a trade secret would be of any value to Honeywell. *See Wilmington Star-News, Inc.*, 125 N.C. App. at 180–81, 480 S.E.2d at 56 (identifying “value of information to business and its competitors” as a factor to be considered determining whether information constitutes a trade secret).

109. Accordingly, viewing the evidence in the light most favorable to DSM and after considering the *Star-News* factors, the Court concludes that DSM's Molding Conditions do not constitute a legally cognizable trade secret.

d. Molding Conditions: Evidence of Misappropriation

110. Defendants also argue that dismissal of DSM's claim as to its alleged Molding Conditions trade secret is warranted because DSM has failed to offer evidence of misappropriation. The Court agrees.

111. DSM contends that, prior to Thagard's arrival, Honeywell did not have the equipment or knowledge to optimize helmet molding conditions. (DSM Br. 8–10.) The undisputed facts show, however, that, prior to Thagard's commencement of work at Honeywell, Honeywell procured molded UD material from third-parties³³ and conducted numerous molding studies to identify optimal molding conditions, including temperature. (See, e.g., TEx. 95, at 12, 29, 38, 74, 86, 128; TEx. 96, ECF No. 396.4; TEx. 99, ECF No. 396.6; TEx. 112, ECF No. 396.18.) One such molding study involved testing Honeywell's SR-3130 material molded at [REDACTED]. (DSMEx. 33, at 14–15.)

112. Even an internal Honeywell communication from 2008 relied upon by DSM shows that Honeywell tested SR-3130 molded [REDACTED]. (See DSMEx. 35, ECF No. 374.35.) DSM's efforts to characterize this document as supporting its position are especially problematic. In particular, DSM argues this document shows that

³³ While Honeywell did not acquire in-house molding capabilities until after Thagard's arrival, (Grunden Dep. 108:3–112:17), as of Thagard's start date, Honeywell employees had already contacted suppliers of molding equipment to purchase equipment for "internal R&D purposes[.]" (DSMEx. 44, ECF No. 374.44).

“[p]re-Thagard, Honeywell also concluded that “[REDACTED].” (DSM Br. 8 (quoting DSMEx. 35).) DSM, however, omits critical language from the quoted sentence that fundamentally changes the meaning: “[REDACTED][.]” (DSMEx. 35 (emphasis added).) Thus, the “POOR ballistic performance” was plainly attributable to the change in pressure, not the temperature. In addition, the statement related to V₅₀ performance, not BFD performance, and the material tested was SR-3130, not SR-3136. Contrary to DSM’s claims, the document offers no support for DSM’s position, and DSM’s blatant mischaracterization is troubling. In any event, after Thagard began working at Honeywell, the undisputed evidence shows that Honeywell continued to conduct molding studies. (*See, e.g.*, TEx. 95, at 253, 262, 276, 287–88, 347, 527; TEx. 114, ECF No. 396.20; TEx. 121, at 4, ECF No. 396.26; TEx. 123, ECF No. 396.28.)

113. DSM next offers as evidence of misappropriation a November 2010 e-mail from Honeywell’s Brad Grunden to Thagard, in which Grunden reported that, “[REDACTED],” (DSMEx. 41, ECF No. 374.41), and Thagard’s reply e-mail stating “[t]his is why I insisted on this study.” (DSMEx. 46, ECF No. 374.46.) Here too, DSM omits critical information, this time from Thagard’s reply e-mail, which actually stated, in relevant part, “[t]his is why I insisted on this study, *although I expected better V50 and did not expect such a dramatic [BFD] reduction.*” (DSMEx. 46.) This language refutes DSM’s contention that Thagard’s reply “confirms [the] ‘study’ was really only intended to create a facade of independent development,” (DSM Br. 9), a contention DSM makes without any evidentiary support.

114. As further evidence of misappropriation, DSM points to an August 17, 2011 handwritten note in Thagard's Honeywell notebook, which provides "[REDACTED]." (DSMEx. 71, at HNY-01118421, ECF No. 376.4.) According to DSM, this note serves as evidence of Thagard's "implementation" of its alleged Molding Conditions trade secret. (DSM Br. 9.) The Court disagrees. Thagard's handwritten note was made nine months after Grunden's e-mail concerning the improved BFD of SR-3136 when [REDACTED], (DSMEx. 46), and eight months after Honeywell concluded that [REDACTED], (DSMEx. 53, at 4). DSM seeks an inference simply not permitted by the undisputed factual record.

115. In addition, DSM has failed to come forward with evidence showing the temperature (i) Honeywell recommended customers use for SR-3136, (ii) Honeywell recommended Ceradyne use when molding helmets made with the Honeywell [REDACTED] Solution, or (iii) Ceradyne actually used when molding the Honeywell [REDACTED] Solution into ECH Program helmets. There is no evidence of record that suggests that Ceradyne molds the ECH Program helmets at [REDACTED], a purported fact DSM assumes. (*Cf.* Brachos Dep. 57:17–60:21; 2nd Thagard Aff. ¶ 57 (“[REDACTED]”).)

116. Based on the foregoing, the Court concludes that DSM's claim for misappropriation of DSM's alleged Molding Conditions trade secret must fail for the additional reason that DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated this alleged trade secret.

4. **[REDACTED]**

117. DSM next contends that Defendants misappropriated its alleged trade secret in the key “input parameters” used in connection with DSM’s **[REDACTED]**. (See DSM Br. 11–13.) As discussed below, the undisputed evidence shows that **[REDACTED]** is a program developed by DSM that **[REDACTED]**. According to DSM, the **[REDACTED]** (collectively, the “Key Input Parameters”). (DSM Br. 12.)

118. Defendants contend that DSM’s claim as to the Key Input Parameters should be dismissed because (i) DSM never identified the Key Input Parameters as a trade secret, (ii) the Key Input Parameters do not constitute a trade secret, (iii) DSM has not offered any evidence of misappropriation, and (iv) Honeywell independently developed knowledge of the factors that affect the performance of UD materials. The Court agrees with Defendants that DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated its alleged Key Input Parameters trade secret and, as a result, declines to address Defendants’ remaining arguments in favor of dismissal.

a. **[REDACTED]**: Background

119. According to DSM, **[REDACTED]**. (See DSM Exhibit A, at 7 (“**[REDACTED]** in terms of multiple factors, leading to a huge equation that includes all the factors.”); Werff Dep. 77:10–23; Chabba Dep. 276:22–277:5.) According to DSM’s Martin Van Es, the advantage of **[REDACTED]** is that a user is “**[REDACTED]**[.]” (Van Es Dep. 133:2–8.)

120. The underlying [REDACTED] of the intended UD based on the input parameters. (Van Es Dep. 139:6–13; Werff Dep. 84:19–85:18, 90:13–91:18.) The input parameters, including the Key Input Parameters, are [REDACTED]. (Van Es Dep. 128:9–12.) The [REDACTED]. (Werff Dep. 84:19–85:18, 90:13–91:18; Van Es Dep. 126:6–13.) Those [REDACTED]. (Werff Dep. 84:19–85:18, 278:7–19.) Thus, input parameters can be manipulated to reflect the characteristics of a [REDACTED]. (Werff Dep. 77:10–23; *see* DSM Exhibit A, at 15–22; TEx. 92, ECF No. 349.78.)

121. [REDACTED] was created between 2005 and 2007 by DSM’s Van Es, with the assistance of DSM’s R&D team,³⁴ using a design of experiments (“DOE”) approach. (Werff Dep. 77:24–78:10, 279:5–10; Van Es Dep. 92:12–19, 115:23–116:4, 123:8–124:10, 243:5–22.) “A DOE is a basic statistical tool in which a set of variables are established and then the product is tested with different values of each variable to produce a data set of how the product performed with different variable characteristics.” (1st Thagard Aff. ¶ 22; *see* Reitman Aff. ¶ 25 (“A DOE approach is a common tool used to understand the importance and effect of individual components or design elements of a formulation.”).) The resulting data set is then used to derive predictions as to how different variables or variable combinations will affect the different outcomes. (1st Thagard Aff. ¶ 22.)

122. As applied by DSM in the development of [REDACTED] were identified. (Van Es Dep. 133:25–135:9; Werff Dep. 279:8–280:1.) Ultimately, DSM researched [REDACTED] through a DOE. (Van Es Dep. 134:15–19.) DSM “[REDACTED]” and

³⁴ It is undisputed that Thagard was not involved in developing [REDACTED]. (Wilms Dep. 193:25–194:1.)

“data resulting from countless tests enabled DSM to design the [REDACTED].” (DSM Exhibit A, at 7.) According to Van Es, the success of the [REDACTED] project “[REDACTED].”³⁵ (Van Es Dep. 133:25–135:9.)

123. [REDACTED] is not without limitations, however. For instance, [REDACTED] is only equipped to [REDACTED]. (Werff Dep. 80:3–7, 92:13–93:11; Werff Aff. ¶ 24.) Thus, DSM acknowledges that [REDACTED]. (TEEx. 22, at 3, ECF No. 349.8; *see* Werff Dep. 85:24–86:3 (“Q. If you change one of the input factors . . . , for instance, [the specific fiber], would all of your outputs change? A. Yes, they would all change, they are all related.”).) Likewise, DSM admits that [REDACTED] is only equipped to make [REDACTED], or a combination of the two. (Werff Dep. 289:15–19; Van Es Dep. 122:20–123:4.) As such, [REDACTED] cannot be used to predict performance with new resins. (*See* Werff Dep. 86:10–12 (“Q. If you change the resin type within the PUR family, would your outputs change? A. Yes, the outputs would change.”); Cunningham Dep. 159:15–18, ECF No. 358 (“If you vary a new kind of resin and an otherwise existing model [REDACTED]? A. No.”).) Additionally, [REDACTED] does not consider fiber surface treatments, including [REDACTED]. (Werff Dep. 286:3–9.) Finally, [REDACTED] of hard ballistic materials. (Van Es Dep. 127:25–128:23, 131:6–10.)

³⁵ In addition to the [REDACTED]. (*See* DSM Exhibit A, at 15.) According to DSM’s Werff, “[REDACTED].” (Werff Dep. 79:5–22.) Because [REDACTED] cannot [REDACTED], (Van Es Dep. 127:25–128:23, 131:6–10), [REDACTED]. Based on the record before the Court, the significance of [REDACTED] is unclear. (Werff Dep. 80:25–81:5 (“Q. What is [REDACTED]? A. Martin Van Es never explained to me what it really meant. I always put it to zero. It had something to do with logistics how the [REDACTED]. I never used it.”).)

124. DSM does not contend at summary judgment that Defendants misappropriated the [REDACTED] itself or the [REDACTED]. Rather, DSM appears to contend that the trade secret at issue is the [REDACTED]. It is unclear, however, whether DSM claims its trade secret lies in [REDACTED]³⁶ [REDACTED].

b. [REDACTED]: Evidence of Misappropriation

125. Defendants argue that DSM has failed to come forward with any evidence tending to show that Defendants misappropriated DSM's alleged Key Input Parameters trade secret. The Court agrees.

126. To be clear, DSM does not contend, and has offered no evidence tending to show, that Defendants used the [REDACTED] (or the specific [REDACTED] contained therein) in developing SR-5231 or any other Honeywell UD material. In addition, DSM does not contend, and has not offered evidence tending to show, that Defendants used the Key Input Parameters to develop a [REDACTED], or that Honeywell even had a comparable predictive program during Thagard's employment there. Instead, DSM argues only that Thagard had knowledge of the Key Input Parameters during his employment with DSM, that the parameters are "susceptible

³⁶ To the extent DSM contends that its trade secret lies in the general notion that the ballistic performance of UD materials is affected by [REDACTED], the Court notes that numerous publicly available sources correlate UD ballistic performance with these UD components. (See, e.g., Bhatnagar Book 7 ("The ballistic performance of [UD] depends upon: 1. Physical properties of the ballistic fibers. 2. Denier of the fibers. 3. Amount of intermingling of fiber within a yarn bundle. 4. Fiber spreading at macro level. 5. Type of Resin. 6. Quantity of Resin. 7. Bond between resin and fiber."), 349–50; TEx. 103, at 231–33, ECF No. 396.9 (identifying factors that affect ballistic performance, including, among other things, fiber strength, resin type, "ply structure/architecture, ply areal density, [and] fiber-to-fiber and fiber/yarn-to-projectile friction").) As such, to the extent DSM's trade secret claim is so based, the claim must be dismissed.

to memorization,” and that Thagard had authorized access to certain predictive calculations from the [REDACTED] program. (DSM Br. 12–13.) That DSM does not even argue that Thagard used or disclosed any of this information to Honeywell is itself a basis for rejection of this claim.

127. The facts viewed in the light most favorable to DSM show that Thagard had authorized access to DSM’s [REDACTED] program during his employment, (DSM Exhibit A, at 8), although the extent of his access is unclear from DSM’s own witnesses, (*compare* Werff Aff. ¶ 11 (“Thagard had complete access to . . . DSM’s proprietary [REDACTED] results for developing ballistic UDC materials.”), *with* Werff Dep. 96:18–20 (“Q. Did James Thagard have access to the [REDACTED]? A. I don’t know.”), *and* Van Es Dep. 140:3–5, *and* 1st Thagard Aff. ¶ 21.) As noted, however, a former employee’s authorized access to a trade secret, standing alone, is insufficient to create an inference of misappropriation. *See Addison Whitney, LLC*, 2017 NCBC LEXIS 23, at *18.

128. It is undisputed that [REDACTED] are not susceptible to memorization. (DSM Br. 12; *see* Werff Dep. 91:9–22, 97:18–22 (“Q. You cannot tell me sitting here today what the formulas are in [REDACTED]? A. Oh no, certainly not, certainly not the numbers.”), 98:3–8 (“Q. You can’t replicate the [REDACTED] program without the formulas, right? A. . . . You need the [REDACTED].”), 284:24–285:11; Van Es Dep. 139:14–16; *see also* DSM Exhibit A, at 7 (“To duplicate the [REDACTED] would be extremely difficult.”).) Moreover, even if the Key Input Parameters or certain [REDACTED] predictive calculations could be deemed susceptible to memorization

by Thagard, such, without more, does not amount to “substantial evidence” of misappropriation. *See Amerigas Propane, L.P.*, 2015 NCBC LEXIS 98, at *36 n.12 (“Although there is evidence that the information [the defendant] retains in his memory extends to pricing and usage, which potentially could constitute trade secrets, [the plaintiff’s] failure to show substantial evidence of misappropriation is fatal to its claim.” (citation omitted)).

129. Here, DSM has failed to offer any evidence tending to show that Thagard used or disclosed the Key Input Parameters or any [REDACTED] predictive calculations to Honeywell. Moreover, the uncontradicted facts of record show that, prior to Thagard’s arrival, Honeywell was aware that [REDACTED],³⁷ [REDACTED] affected the ballistic performance of UD material. (*See, e.g.*, TEx. 35; TEx. 95.) Indeed, prior to Thagard’s employment, Honeywell had developed for testing by Ceradyne numerous experimental materials by manipulating these same variables. (*See, e.g.*, TEx. 95, at 4, 28–29, 37–39, 49, 74, 98–99, 107–09, 118–19, 128, 136, 161–62, 172–73, 181–83, 192–93.)

130. Honeywell patents predating Thagard’s employment also note the importance of the Key Input Parameter variables on the ballistic performance of UD materials. (*See, e.g.*, TEx. 2, at C1L28–L54 (identifying fiber “strength,” “fiber construction, fiber surface, binder resin, and binder resin content” as “parameters that affect the level of ballistic protection”); TEx. 2.C.31, at C1L53–C2L3, ECF No. 348.13; TEx. 2.C.34, at C4L52–L58.) Moreover, a June 2010 technical proposal that

³⁷ Whereas DSM describes its materials in terms of filaments per ply, Honeywell characterizes its products by FAD per ply.

Honeywell submitted to the United States Army stated that “fiber tensile strength,” “resin type,” “resin content,” and “shield construction,” among other things, “can be manipulated to affect an increase in ballistic performance.” (DX86, at 18–22, ECF No. 396.41.) The same proposal summarizes Honeywell’s research into how the manipulation of these factors affects both V_{50} and BFD performance. (DX86, at 18–22.) In addition to the Key Input Parameter variables, the undisputed evidence shows that Honeywell also evaluated fiber surface treatments, including [REDACTED], as a means of improving ballistic performance.

131. Based on the foregoing, the Court concludes that DSM has failed to come forward with a forecast of substantial evidence that Defendants misappropriated its alleged [REDACTED] Key Input Parameters trade secret and that claim must therefore be dismissed.

5. “Blueprint” Theory

132. Finally, DSM contends that Honeywell’s SR-5231 is derived from a “blueprint for improved X31/HB80” that Thagard created while working at DSM. (See DSM Br. 2–3, 24–29, 35–41.) DSM specifically contends that Thagard “authored [a] leap-frogging compilation” based on knowledge he acquired at DSM regarding:

the relationships between stronger fiber and enhanced ballistic performance in UDC, specifically, that DSM’s [REDACTED], . . . all ballistic performance attributes of the resulting UDC would be dramatically improved.

(DSM Br. 24.) In essence, DSM contends that the “blueprint” incorporated DSM’s alleged Resin Selection Process and [REDACTED] trade secrets, as well as the use of “stronger,” high [REDACTED].³⁸

133. Defendants contend that DSM’s “blueprint” theory must fail because (i) DSM never identified the “blueprint” as a trade secret, (ii) the “blueprint” does not constitute a trade secret under North Carolina law, (iii) DSM has come forward with no evidence of misappropriation, and (iv) Honeywell independently developed SR-5231. The Court agrees with Defendants that DSM’s claim as to the alleged “blueprint” fails because DSM never identified the “blueprint” as a trade secret and because DSM has not come forward with any evidence of misappropriation.³⁹

³⁸ On summary judgment, DSM did not identify the use of “stronger,” high tenacity [REDACTED] fiber as an independent, stand-alone trade secret, but instead argued that it was a trade secret by virtue of being a component of the “blueprint” compilation. (See DSM Br. 12–13, 24, 27–29, 35–36.) To the extent DSM contends that Defendants misappropriated a purported trade secret in the use of “stronger,” high tenacity fiber as a means of improving ballistic performance, the Court concludes that the claim should be dismissed because (i) the information is not a trade secret under Chapter 66, as it is a generally known concept, (*see, e.g.*, Werff Dep. 189:9–24; Brachos Dep. 161:23–162:10; Reitman Aff. ¶ 44; 2nd Thagard Aff. ¶ 78; Bhatnagar Book 61–62; TEx. 3, at 26; HWEx. 120, at 15, ECF No. 362; TEx. 2); (ii) DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated any such trade secret; and (iii) Defendants have offered substantial, uncontradicted evidence that Honeywell independently developed 45 gpd fiber prior to Thagard’s arrival, (*see, e.g.*, TEx. 2; TEx. 2.A, ECF No. 345.4; TEx. 15, at 1, ECF No. 348.32; TEx. 95, at 4, 15, 27–28, 36–39, 49–51, 74, 107, 136, 181–83; TEx. 118, at HNY-00735036–37, ECF No. 396.23; Wagner Dep. 283:7–16, 287:17–288:19; Chern Dep. 303:25–307:2; Grunden Dep. 72:2–76:8, 252:5–253:19, 264:3–267:23, 319:23–320:11, 326:19–327:23; HWEx. 120, at 12–16; DX72, ECF No. 349.109; DX73, ECF No. 349.110; DX86, at 6; DX115, ECF No. 349.127; DX569, ECF No. 349.254; PX17, ECF No. 349.263).

³⁹ In light of the Court’s conclusion, the Court declines to address Defendants’ other arguments for dismissal.

a. Blueprint: Background

134. In support of its “blueprint” theory, DSM principally relies upon a single slide in an internal DSM presentation that Thagard created in November 2008 (the “Blueprint Presentation”). (See DSMEEx. 89, ECF No. 376.22.) The Blueprint Presentation, titled “FY09 DSM Dyneema Congressional Program, Next Generation Combat Helmet Development,” outlines DSM’s proposal for how to utilize recently awarded funding through a congressional program (the “Congressional Program”). The Blueprint Presentation notes that the project objective was to develop the “[h]ighest [p]erforming ECH” or an “[i]mproved Dyneema® X31 helmet.” (DSMEEx. 89, at DSM00356484.)

135. The slide of the Blueprint Presentation that DSM contends represents the actual “blueprint” (the “Blueprint Slide”) is titled “Materials and Process Scope” and provides, in its entirety, as follows:

[REDACTED]

(DSMEEx. 89, at DSM00356485 (emphasis added).) DSM contends that the fifteen italicized words above represent a “[REDACTED].” (DSM Br. 27–28.)

136. First, according to DSM’s counsel, “Y Grade” is an internal DSM reference to UD materials made with [REDACTED]. (DSM Br. 27–28.) DSM has failed, however, to offer evidence to support this conclusion. Indeed, the only document DSM cites for support is an internal DSM document which states, “we distinguish between materials / technologies available shortly (in 2008, early 2009) and label those materials as ‘X-grade’ and materials / technologies available in medium or even long

term (mid 2009 and beyond, or potentially never) and label those materials as ‘Y-grade.’” (DSMEx. 90, ECF No. 376.23; *see also* 2nd Thagard Aff. ¶ 75 (“My recollection of what ‘Y Grade’ meant in this context is consistent with the definition of “Y Grade” in the document cited in DSM’s brief Thus it is not limited to a [REDACTED].”.) DSM’s position is also contradicted by the affidavit of DSM’s principal scientist, who avers that the “blueprint” list “included the use of [REDACTED]⁴⁰ [REDACTED] and [REDACTED].” (Werff Aff. ¶ 57.)⁴¹

137. Faced with this lack of evidentiary support, the Court will not entertain DSM’s counsel’s argument that “Y Grade” is a reference to materials made with [REDACTED]. *See Huss v. Huss*, 31 N.C. App. 463, 466, 230 S.E.2d 159, 161–62 (1976) (“On a motion for summary judgment[,] the court may consider evidence consisting of affidavits, depositions, answers to interrogatories, admissions, documentary materials, facts which are subject to judicial notice, and any other materials which would be admissible in evidence at trial.”); *see also Ronald G. Hinson Elec., Inc. v. Union Cty. Bd. of Educ.*, 125 N.C. App. 373, 379, 481 S.E.2d 326, 330 (1997) (noting that unsworn statements by a party’s attorney are not considered evidence).

⁴⁰ DSM produced two variations of the SK76 fiber. DSM’s SK76 (1500 dtex) fiber has a gpd of [REDACTED] and was used in [REDACTED]. (Werff Aff. ¶ 24.) The other variation, SK76 (1760 dtex), has a gpd of [REDACTED] and was used in several DSM materials not at issue in this case. (Werff Aff. ¶ 24.)

⁴¹ Although irrelevant to the Court’s determination of the Motions, the Court will accept Werff’s representation as true for purposes of the Motions.

138. DSM's other contentions are similarly without record support. For example, although DSM describes the Blueprint Slide as referring to [REDACTED] (DSM Br. 27–28), the Blueprint Slide does not mention [REDACTED]—a process that is distinct from [REDACTED]. Moreover, contrary to DSM's suggestion, the Blueprint Slide does not mention DSM's alleged Resin Selection Process trade secret. Instead, the Blueprint Slide merely identifies “[h]ard” and “[u]ltra [h]ard” resin as possible candidates. In short, the Blueprint Slide, viewed in the light most favorable to DSM, only suggests that, shortly before Thagard's departure, DSM planned to “internal[ly] evaluat[e]” several new materials, including one constructed with [REDACTED], and does not reveal a secret formula that Defendants later misappropriated.

139. At the May 10 Hearing, DSM's counsel suggested that the Blueprint Slide “is the synthesis of [the ‘blueprint’], but it's not the totality of the trade secrets that lead to each of those line items.” (Tr. 118:2–121:8.) According to DSM's counsel, the Blueprint Slide “is the top line blueprint” subject to the “the caveat . . . that . . . it isn't all that the blueprint is.” (Tr. 118:2–121:8.) There is no evidentiary support for this contention either.

140. At the time of the Blueprint Presentation, it is undisputed that DSM had neither created nor tested the proposed material. (2nd Thagard Aff. ¶ 73.) Although DSM argues that DSM and Thagard had already “correctly connected the dots” between the “blueprint” elements, (DSM Br. 24), actual evidence in the form of an e-mail from Thagard to others at DSM transmitting the Blueprint Presentation noted

that it was “a starting point and details [would] be finalized as we proceed in the process[.]” (DSMEx. 132, at DSM00364343, ECF No. 376.64).

141. It is also undisputed that DSM never created a UD material with [REDACTED]. It is similarly undisputed that DSM does not use [REDACTED] in connection with any of its UD materials. DSM’s scientists admit that DSM’s [REDACTED] research program was put on hold no later than December 2008 (i.e., after the Blueprint Presentation was created but before Thagard’s departure). (See Van Es Dep. 158:3–15 (noting [REDACTED] program was put on hold because DSM “could not find enough benefits of [REDACTED] to continue”); Werff Dep. 164:19–25 (stating [REDACTED] was stopped because DSM “did not see the intended improvement of the V50”); DX93, ECF No. 349.118; DX75, at DSM00362211, ECF No. 349.112.)⁴²

142. It is also undisputed that [REDACTED].⁴³ [REDACTED].

⁴² While DSM did not use [REDACTED] in its ECH Program materials during Thagard’s employ, [REDACTED] was used in DSM’s post-Thagard [REDACTED] prototype. (See DX506, at DSM00000320, ECF No. 349.242; TEx. 91, at 2, ECF No. 349.77; Werff Aff. ¶ 24; see also Fitzgerald Dep. 175:1–3 (“Q. What were the [REDACTED] prototypes that DSM developed as part of the Congressional Helmet Program? A. [REDACTED].”).) DSM provided the [REDACTED] prototype to Ceradyne for testing, but it was not selected for the ECH Program, was never commercialized, and was ultimately abandoned. (See Fitzgerald Dep. 210:15–216:24 (“Q. Do you know why [REDACTED] were ultimately abandoned? A. [REDACTED] were always meant to be prototype products for the helmet program. If there had been decent results, there may have been a different path forward, but there was never a path forward for these products, per se.”).) Additionally, three prototype materials that DSM submitted to Ceradyne after Thagard’s departure—[REDACTED]. (TEx. 91, at 1–2; TEx. 65, at DSM00013138, ECF No. 349.51; TEx. 115, at DSM00063052–58, ECF No. 396.21; DX514, ECF No. 349.243; Werff Aff. ¶ 51.) DSM’s [REDACTED] prototypes were not selected for the ECH Program and were eventually abandoned. (See Fitzgerald Dep. 204:22–216:24.)

⁴³ [REDACTED]

b. Blueprint: Identification

143. Defendants contend that DSM’s “blueprint” theory must fail because DSM never identified the compilation as a trade secret in discovery. The Court agrees.

144. First, DSM does not reference a “blueprint” or compilation consisting of “stronger” fiber and DSM’s alleged Resin Selection Process and [REDACTED] trade secrets in either DSM’s Exhibit A or any other identification of its trade secrets. DSM’s Exhibit A does, however, separately identify the components that make up the alleged “blueprint” and, in an interrogatory response, DSM stated generally that “[m]any [of its allegedly misappropriated trade secrets] consist of compilations of information rather than discrete items of information.” (DSMEx. 105, at 18.) In particular, Exhibit A notes that Thagard had access to and knowledge of DSM’s research into fiber surface treatment, including [REDACTED]. (DSM Exhibit A, at 12–13.) In addition, Exhibit A states that, while Thagard was at DSM, DSM was “seeking a stiffer PUR,” “test[ing] new experimental resins,” and [REDACTED]. (DSM Exhibit A, at 6.) Exhibit A also identifies the [REDACTED] project and DSM’s development of a “stronger” fiber. (DSM Exhibit A, at 13–14.)

145. At the May 10 Hearing, DSM’s counsel indicated that all three “blueprint” elements—the Resin Selection Process, [REDACTED], and “stronger” fiber—were disclosed, in combination, in Exhibit A as the [REDACTED]. (Tr. 123:1–127:25; *see* DSM Br. 42.) DSM specifically points to the following portion of Exhibit A:

During *and after* Thagard’s tenure at DSM, . . . DSM was developing a new UD sheet, X158 (now HB210). . . . It is made with a [REDACTED], and with the new [REDACTED]. The increased [REDACTED] enhances ballistic

performance. *The program that led to X158 by [REDACTED].* These principles were being investigated by DSM while Dr. Thagard was at DSM.

(DSM Exhibit A, at 14 (emphasis added).)

146. DSM's reliance on the "triple jump" referenced in Exhibit A as a sufficient identification of its "blueprint" theory fails for several reasons. First, the cited portion of Exhibit A lacks specific detail and only makes a vague reference to "stronger" fiber. Terms such as "better polymer," "stronger fiber," and "better UD construction" offer Defendants little guidance. Second, the cited portion of Exhibit A relates to a product that DSM developed in 2012, years after Thagard's departure. (Werff Aff. ¶ 13.) Indeed, while X158/HB210 used a [REDACTED] was not developed until after Thagard left DSM, and that [REDACTED]. (Werff Aff. ¶ 13; Reitman Aff. ¶¶ 45, 75.) Third, the [REDACTED] resin referenced in the cited portion of Exhibit A, [REDACTED], was also used in [REDACTED]. Finally, the "triple jump" referenced in DSM's Exhibit A does not mention [REDACTED]. Indeed, neither [REDACTED] or in any other DSM product.

147. As with any other trade secret, a plaintiff must describe a compilation trade secret "with sufficient particularity so as to enable a defendant to delineate that which he is accused of misappropriating and a court to determine whether misappropriation has or is threatened to occur." *Krawiec*, 370 N.C. at 609–10, 811 S.E.2d at 547–48; *see SL Montevideo Tech., Inc. v. Eaton Aero., LLC*, 491 F.3d 350, 354 (8th Cir. 2007) ("[S]imply to assert a trade secret resides in some combination of otherwise known data is not sufficient, as the combination itself must be delineated with some particularity in establishing its trade secret status." (citation omitted));

Sit-Up Ltd. v. IAC/Interactive Corp., No. 05 Civ. 9292, 2008 U.S. Dist. LEXIS 12017, at *29 (S.D.N.Y. Feb. 20, 2008) (“[C]ompilation trade secrets are protectable but . . . the law requires the trade secret claimant to describe the secret with sufficient specificity that its protectability can be assessed and to show that its compilation is unique.”).

148. DSM’s Exhibit A is a 14-page, single-spaced narrative description of DSM’s materials, manufacturing processes, and research. DSM has not meaningfully updated Exhibit A since December 2014, (*compare* Pl.’s Renewed Mot. Compel Ex. A, ECF No. 94, *with* DSM Exhibit A), and much of the information in the current version is no longer at issue in this case, including DSM’s fiber production process and its manufacturing process for HB80. While the Court determined that DSM’s December 2014 version of Exhibit A was adequate at the pre-discovery stage because of the “inherent difficulty for DSM to identify which portions of its trade secrets had been misappropriated prior to the receipt of discovery from Defendants,” the Court noted that the December 2014 Exhibit A did “not appear to specify with exact precision which alleged trade secrets Defendants are alleged to have misappropriated[.]” *DSM Dyneema, LLC*, 2015 NCBC LEXIS 50, at *26–27. At an April 11, 2016 telephone conference, the Court again emphasized the need for DSM to amend or supplement Exhibit A to ensure that it accurately reflects *only* the trade secrets that DSM contends were misappropriated, yet DSM elected to never meaningfully revise Exhibit A after December 2014.

149. Courts have made clear that a plaintiff may not simply wait until summary judgment to identify the trade secrets that it contends a defendant has misappropriated. *See Freeman Inv. Mgmt. Co. v. Frank Russell Co.*, No. 13-CV-2856, 2016 U.S. Dist. LEXIS 136220, at *36–37 (S.D. Cal. Sep. 30, 2016) (“Plaintiff’s attempt to revise its trade secret identification at this stage is simply too little too late.”); *Big Vision Private, Ltd. v. E.I. Dupont De Nemours & Co.*, 1 F. Supp. 3d 224, 265 n.52 (S.D.N.Y. 2014); *Pixion, Inc. v. Placeware Inc.*, 421 F. Supp. 2d 1233, 1240–42 (N.D. Cal. 2005).

150. Moreover, “a plaintiff must do more than just identify a kind of technology and then invite the court to hunt through the details in search of items meeting the statutory definition.” *IDX Sys. Corp. v. Epic Sys. Corp.*, 285 F.3d 581, 584 (7th Cir. 2002); *cf. Analog Devices, Inc.*, 157 N.C. App. at 468, 579 S.E.2d at 453 (citing *IDX Sys. Corp.* with approval). In *IDX Sys. Corp.*, the Seventh Circuit held that a plaintiff’s “43-page description of the methods and processes underlying” the software at issue lacked the requisite specificity under the Uniform Trade Secrets Act because it did “not separate the trade secrets from the other information that goes into any software package.” *IDX Sys. Corp.*, 285 F.3d at 583–84. In reaching this conclusion, the court posed the following: “Which aspects are known to the trade, and which are not? That’s vital under the statutory definition.” *Id.*; *see also FMC Corp. v. Cyprus Foote Mineral Co.*, 899 F. Supp. 1477, 1482 (W.D.N.C. 1995).

151. Defendants argue, and the Court agrees, that DSM’s failure to specifically identify its “blueprint” theory deprived Defendants of the opportunity to conduct

discovery into that purported trade secret. During discovery, Defendants justifiably focused on the specific trade secrets identified in DSM's Exhibit A and can hardly be blamed for not addressing the unidentified "blueprint" theory. As Honeywell notes, "[t]he point of Exhibit A was to guide discovery into DSM's claims, not to serve as the gateway to discovery only to be tossed aside at summary judgment." (Honeywell's Reply Br. Supp. Mot. Summ. J. 12, ECF No. 391.) Neither side made the Blueprint Presentation a focus of discovery. DSM did not use the Blueprint Presentation in a single deposition. While an e-mail chain containing multiple documents, including the Blueprint Presentation, was introduced by Thagard during Werff's deposition, no witness was asked a single question about it. (*See* Werff Dep. 247:18–258:1; DX105, ECF No. 349.122; *see also* Tr. 124:22–127:19.) This is hardly surprising given that DSM's reliance on the Blueprint Presentation and the "blueprint" theory appears only to have developed after the close of discovery in an attempt to salvage its claims at summary judgment.⁴⁴

⁴⁴ At the outset of this case and throughout discovery, DSM principally contended that Defendants used its trade secrets to develop a UD material that mimicked or cloned HB80. *See DSM Dyneema, LLC*, 2015 NCBC LEXIS 116, at *11–14 (granting DSM motion to compel UD materials from Honeywell for inspection and testing based, in part, on DSM's representation that testing would enable DSM's expert, Dr. S. Leigh Phoenix, "to observe the 'progressive evolution' of the Honeywell material, including its interconnected properties, and how the interconnected properties 'converged with and ultimately mimicked [DSM's] material'"). The undisputed facts revealed in discovery, however, demonstrate that Honeywell's SR-5231 material is quite different from HB80 in key respects, and DSM elected not to have its expert test its original theory. (*Cf.* DJEx. 28, S. Phoenix Expert Report, ECF No. 358; Phoenix Dep. 192:17–193:19 ("Q. You're not opining on whether Honeywell's 3136 material mimics DSM's HB80; are you? A. No. Q. You're not opining on whether Honeywell's 3136 material mimics HB210; are you? A. No. Q. You're not opining on whether Honeywell's 5231 material mimics HB80; are you? A. If I'm asked I might be forced to make comments, but I'm not intending to."), 199:5–15 ("Q. You haven't identified any DSM trade secrets that were misappropriated by Honeywell; have you? A. No. . . . Q. You haven't identified any

152. Based on the above, the Court concludes that DSM's failure to identify its alleged "blueprint" compilation trade secret with sufficient particularity during discovery and prior to Rule 56 briefing and argument warrants dismissal of DSM's claims based on that purported trade secret.

c. Blueprint: Evidence of Misappropriation

153. Even if DSM had properly identified its alleged "blueprint" compilation trade secret, the Court further concludes that DSM's claim nevertheless fails because DSM has failed to produce a forecast of evidence giving rise to an inference that Defendants used or otherwise misappropriated the "blueprint" compilation.

154. In particular, DSM has not come forward with any evidence that Thagard disclosed the Blueprint Presentation (or the information contained therein) to Honeywell. Instead, DSM simply argues that until Thagard's arrival Honeywell did not produce a UD material "[REDACTED]." (DSM Br. 28–29.) In essence, DSM contends that, because Honeywell's SR-5231 incorporates characteristics that DSM was considering while it employed Thagard, it should be entitled to an inference of misappropriation. Such is not the law. *See Modular Techs., Inc.*, 2007 N.C. App. LEXIS 1592, at *12 ("Plaintiff's evidence rises to no more than an assertion of *post hoc, ergo propter hoc* which we find insufficient as a matter of law to support plaintiff's claim against defendants for misappropriation of trade secrets."); *see also GE Betz, Inc. v. Moffitt-Johnston*, 885 F.3d 318, 326 (5th Cir. 2018) ("The mere fact of [a

DSM trade secrets that were misappropriated by James Thagard; have you? . . . A. No."), 200:6–12, 204:10–206:23.)

defendant's] ability to compete does not itself suggest that [the defendant] did so by misappropriating trade secrets.”).

155. Moreover, the undisputed evidence demonstrates that Honeywell had developed, or was in the process of developing, the three components of DSM's alleged “blueprint” prior to Thagard's arrival. Before Thagard began work at Honeywell, Honeywell developed 45 gpd fiber and was producing it at a commercial rate. (*See, e.g.*, TEx. 95, at 4, 15, 27–28, 36–39, 49–51, 74, 107, 136, 181–83.) At that same time, Honeywell was exploring plasma and scouring treatment, and during this same pre-Thagard period, Honeywell discussed with Ceradyne the need to develop a stiffer resin system and had identified for testing [REDACTED], the resin that was ultimately used in SR-5231. [REDACTED] is not sufficient to raise an inference of misappropriation.

156. “A basic requirement of circumstantial evidence is reasonable inference from established facts. Inference may not be based on inference. Every inference must stand upon some clear and direct evidence, and not upon some other inference or presumption.” *Lane v. Bryan*, 246 N.C. 108, 112, 97 S.E.2d 411, 413 (1957); *see Static Control Components, Inc. v. Darkprint Imaging, Inc.*, 200 F. Supp. 2d 541, 545 (M.D.N.C. 2002) (“A party cannot withstand summary judgment if it offers only mere speculation of misappropriation instead of evidence supported by facts.”). Here, DSM asks the factfinder to infer that Thagard and DSM “arrived at” a “blueprint” for improved X31/HB80 without evidentiary support. Then DSM asks the factfinder to infer—despite Thagard's uncontradicted testimony and no evidence to the contrary—

that Thagard disclosed this information to Honeywell and that Defendants used the information to develop Honeywell's SR-5231. The Court cannot indulge DSM's request to mount one speculative inference upon another to sustain its blueprint-based claim.

157. Accordingly, the Court concludes that DSM has failed to produce a forecast of evidence sufficient to permit an inference that Defendants misappropriated DSM's alleged "blueprint" trade secret and will dismiss DSM's claims based on this alleged trade secret on this additional basis.

6. DSM's Allegation of Improper Downloading

158. Defendants argue that DSM's NCTSPA claim also fails because DSM has failed to produce a forecast of evidence demonstrating specific facts tending to show that Thagard improperly accessed, downloaded, or removed any of DSM's Alleged Trade Secrets during his employment with DSM. The Court agrees.

159. As noted, it is undisputed that Thagard had authorized access to DSM's Alleged Trade Secrets throughout his employment. It is also undisputed that Thagard downloaded information from his DSM computer onto one or more USB drives at the time of his departure from the company. The parties also do not dispute that Thagard returned "USB [s]ticks" to DSM shortly before his employment ended. (DX30, ECF No. 349.90; *see* Kyle Dep. 48:2–55:15, 99:22–102:24, ECF No. 358; Dooley Dep. 198:5–199:19; Cheatham Aff. ¶ 12, ECF No. 351.) Thagard offers uncontradicted testimony that this procedure was followed in order to comply with federal International Traffic in Arms Regulations ("ITAR"), *see* 22 C.F.R. §§ 120–130, and

with the full authorization of his supervisor, Ken Dooley, and DSM's employee responsible for ensuring ITAR compliance, Rhett Cheatham,⁴⁵ (1st Thagard Aff. ¶¶ 10–11; Thagard Dep. 204:14–206:15; 1st Thagard Aff. Ex. 2, ECF No. 350.2; Cheatham Aff. ¶¶ 6, 12; DSMEEx. 55, at 16, ECF No. 374.55; Defs.' Answer ¶ 22, ECF No. 19; Dooley Dep. 182:22–183:5 (“Q. What did you do to set in place a process to get all vital information from Dr. Thagard? A. I don't know. I probably would have asked [Thagard] if he would make sure he gathered that information and shares it with the appropriate people.”), 225:1–12).

160. In its brief in opposition to the Motions, DSM did not argue, or point to any evidence tending to show, that Thagard ever improperly accessed or acquired DSM information, much less DSM's confidential or trade secret information.⁴⁶ Nevertheless, at the May 10 Hearing, DSM's counsel advanced an on-again, off-again

⁴⁵ At the time, DSM had not yet established a procedure for handling ITAR-controlled information. (1st Thagard Aff. ¶ 9; *see* Dooley Dep. 228:16–229:3.) Indeed, after Thagard's departure, DSM self-reported internal ITAR violations to the U.S. Department of State. (Dooley Dep. 215:10–221:13; DX37, ECF No. 349.94.) Among other corrective actions, DSM adopted a policy whereby employees were required to save all **[REDACTED]**. (Dooley Dep. 224:10–228:15; DX37, at DSM00767674, DSM00767773.) This is the exact procedure the undisputed evidence shows that Thagard followed to avoid potential ITAR violations at the end of his employment with DSM. (*Cf.* Dooley Dep. 53:1–22 (“[Thagard] was like a prophet about ITAR[.]”); Cordova Dep. 220:20–25; Kyle Dep. 30:10–12; Cheatham Aff. ¶ 10.)

⁴⁶ At the May 10 Hearing, DSM's counsel represented that DSM made “reference to [an improper downloading argument] in a footnote” to its brief in opposition to the Motions and that DSM had “part of an affidavit that references” the argument as well. (Tr. 136:14–21.) Having reviewed all 245 footnotes in DSM's brief, as well as DSM's 154 summary judgment exhibits, however, it does not appear to the Court that DSM ever advanced the improper downloading argument prior to the May 10 Hearing. *See* N.C. R. Civ. P. 56(e) (stating that a party responding to summary judgment “must set forth specific facts showing that there is a genuine issue for trial”). DSM had ample opportunity to address this argument in briefing as the Court expanded the word limit for DSM's brief in opposition to the Motions to 14,000 words—well beyond Business Court Rule 7.8's presumptive limit of 7,500 words.

argument contending that there is a factual dispute as to whether Thagard physically removed confidential information from DSM when he terminated his employment at the company.⁴⁷ Counsel candidly acknowledged, however, both that DSM did not know, and could not point to any evidence reflecting, what information, if any, Thagard may have improperly downloaded, (Tr. 136:1–21 (stating DSM “can’t track what would have been downloaded” and that DSM “can’t say that any particular document would have been taken”), and that there is no evidence to suggest that Thagard transferred a USB drive to anyone other than DSM employees, (Tr. 138:25–139:3).

161. Despite this admitted lack of evidentiary support, DSM asks that a factfinder be permitted to infer that Thagard downloaded information related to the materials DSM developed for the ECH Program (and more specifically, the Alleged Trade Secrets) onto USB drives, physically removed the USB drives from DSM’s premises, and transferred the USB drives and the information contained therein to Honeywell. Such inferences, however, are plainly impermissible on the evidentiary record. Reasonable inferences must be based on evidence, not, as DSM seeks here, on other inferences or speculation. *See, e.g., Kinlaw v. Willetts*, 259 N.C. 597, 604, 131 S.E.2d 351, 355 (1963) (“To carry his case to the jury the plaintiff must offer

⁴⁷ DSM’s counsel initially suggested at the May 10 Hearing that Thagard may have improperly downloaded information from his DSM computer onto USB drives, which may have thereafter been removed from DSM, but retreated from this position to state that while DSM is “not conceding that there wasn’t any physical transfer” of DSM’s Alleged Trade Secrets, counsel did not “want to go too far with [the argument] because it’s not part of [DSM’s] case.” (Tr. 141:3–10.) Shortly thereafter, however, DSM’s counsel reversed course to state that the argument was actually in the case. (Tr. 141:15–20.)

evidence sufficient to take the case out of the realm of conjecture and into the field of legitimate inference from established facts.”); *Lane*, 246 N.C. at 112, 97 S.E.2d at 413 (“Inference may not be based on inference.”); *Hopkins v. Comer*, 240 N.C. 143, 151, 81 S.E.2d 368, 374 (1954) (“Cases cannot be submitted to a jury on speculations, guesses or conjectures.”).

162. As a result, the Court concludes that DSM has failed to offer or forecast substantial, competent evidence that Thagard accessed DSM’s Alleged Trade Secrets without authorization or acquired them by improper means in connection with his downloading of information at the termination of his employment with DSM. Therefore, DSM’s misappropriation claim based on that conduct must be dismissed. *See RLM Commc’ns, Inc.*, 831 F.3d at 202 (affirming summary judgment where employer-plaintiff “admitted it ‘d[id]n’t have any’ evidence ‘that [the former employee] retained any of the information on the CD’”); *Amerigas Propane, L.P.*, 2015 NCBC LEXIS 98, at *35–36 (granting summary judgment where plaintiff failed to offer “evidence that [defendant, a former employee,] accessed or downloaded customer information from [plaintiff’s] computer database in connection with his departure from the company”).

B. Remaining Claims

163. DSM concedes that all of its claims depend upon the viability of its claim under Chapter 66 on summary judgment. (DSM Br. 46 n.239.) Having concluded that Defendants are entitled to summary judgment dismissing DSM’s claim for

misappropriation of trade secrets in its entirety, the Court concludes that the Motions should also be granted as to all of DSM's remaining claims.

IV.

CONCLUSION

164. **WHEREFORE**, the Court, for the foregoing reasons, hereby **ORDERS** as follows:

- a. Defendant James Thagard, Ph.D.'s Motion for Summary Judgment is **GRANTED**, and DSM's claims against him are dismissed with prejudice; and
- b. Defendants Honeywell International Inc., Honeywell Specialty Materials, LLC, and Honeywell Advanced Composites, Inc.'s Motion for Summary Judgment is **GRANTED**, and DSM's claims against each of these Defendants are dismissed with prejudice.

SO ORDERED, this the 19th day of June, 2019.⁴⁸

/s/ Louis A. Bledsoe, III
Louis A. Bledsoe, III
Chief Business Court Judge

⁴⁸ This Order and Opinion was originally filed under seal on June 19, 2019. This public version of the Order and Opinion is being filed on July 16, 2019. To avoid confusion, the Court has elected to state the filing date of the public version of the Order and Opinion as June 19, 2019.

Appendix A—Material Comparison Table

Property	HB80	HB210	SR-3136	SR-5231
[REDACTED]	[REDACTED] ¹	[REDACTED] ²	[REDACTED] ³	[REDACTED] ⁴
[REDACTED]	[REDACTED] ⁵	[REDACTED] ⁶	[REDACTED] ⁷	[REDACTED] ⁸
[REDACTED] ⁹	[REDACTED] ¹⁰	[REDACTED] ¹¹	[REDACTED] ¹²	[REDACTED] ¹³
[REDACTED]	[REDACTED] ¹⁴ [REDACTED] ¹⁵	[REDACTED] ¹⁶ [REDACTED] ¹⁷	[REDACTED] ¹⁸	[REDACTED] ¹⁹ [REDACTED] ²⁰
[REDACTED]	[REDACTED] ²¹ [REDACTED] ²²	[REDACTED] ²³ [REDACTED] ²⁴	[REDACTED] ²⁵	[REDACTED] ²⁶ [REDACTED] ²⁷
[REDACTED]	[REDACTED] ²⁸	[REDACTED] ²⁹	[REDACTED] ³⁰	[REDACTED] ³¹
[REDACTED]	[REDACTED] ³²	[REDACTED] ³³	[REDACTED] ³⁴	[REDACTED] ³⁵
[REDACTED]	[REDACTED] ³⁶	[REDACTED] ³⁷	[REDACTED] ³⁸	[REDACTED] ³⁹

¹ DSM Exhibit A, at 1; Werff Aff. ¶ 24.

² DSM Exhibit A, at 14; *see* Werff Aff. ¶ 13 (“SK99 was commercialized after Dr. Thagard left DSM[.]”).

³ Grunden Dep. 305:23–306:11; Wagner Dep. 328:3–15; Reitman Aff. ¶ 75.

⁴ Grunden Dep. 306:24–308:2. [REDACTED]. (Reitman Aff. 38 n.172; Grunden Dep. 292:12–294:19.)

⁵ Beard Dep. 263:15–264:3; Phoenix Dep. 193:20–194:12, 309:14–317:17; DX597, at 9, ECF No. 349.256; DX599, ECF No. 349.257; DX600, ECF No. 349.258.

⁶ Beard Dep. 263:15–264:3; Phoenix Dep. 193:20–194:12, 309:14–317:17; DX597, at 9; DX599; DX600.

⁷ DX585, at 30 fig. 11, ECF No. 349.255; Beard Dep. 263:15–264:3; Phoenix Dep. 193:20–194:12, 309:14–317:17; DX599; DX600.

⁸ DX585, at 33 fig. 17; Beard Dep. 263:15–264:3; Phoenix Dep. 193:20–194:12, 309:14–317:17; DX599; DX600.

⁹ As noted, while DSM describes its products by filaments per ply, Honeywell characterizes its products by FAD (fiber areal density) per ply. FAD describes the weight of fiber per unit area and can be determined by subtracting the resin percentage from the total areal density. Filaments per ply describes the number of filaments, or filament thickness of a single ply of UD. (Reitman Aff. 38 n.173; 1st Thagard Aff. ¶ 57.)

¹⁰ DSM Exhibit A, at 8; Beard Dep. 61:6–20; Wilms Dep. 107:10–12.

¹¹ DX404, at 1, ECF No. 349.216; Beard Dep. 61:6–20.

¹² DX65, at HNY-00689252, ECF No. 349.105; TEx. 57, ECF No. 349.43; Reitman Aff. ¶ 75.

¹³ TEx. 87, ECF No. 349.73; Grunden Dep. 261:13–262:4; Wagner Dep. 277:24–278:9; Reitman Aff. ¶ 75.

¹⁴ DSM Exhibit A, at 1; Werff Aff. ¶ 24; DX148, ECF No. 349.139.

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- ¹⁵ Reitman Aff. ¶ 75.
- ¹⁶ Wilms Dep. 146:5–10; Beard Dep. 68:6–13.
- ¹⁷ Reitman Aff. ¶ 75.
- ¹⁸ TEx. 57; Wagner Dep. 328:3–5; Reitman Aff. ¶ 75.
- ¹⁹ Chern Dep. 20:22–21:23, 229:4–12; Grainger Dep. 185:9–17; Grunden Dep. 230:6–16; Reitman Aff. ¶ 75.
- ²⁰ TEx. 87; Chern Dep. 20:22–21:23, 229:4–12; Grainger Dep. 185:9–17; Grunden Dep. 230:6–16; Reitman Aff. ¶ 75.
- ²¹ DSM Exhibit A, at 1; Werff Aff. ¶ 24; TEx. 90, at 6, 21, ECF No. 349.76; DX148.
- ²² Werff Aff. ¶ 24; Reitman Aff. ¶ 75.
- ²³ DSM Exhibit A, at 14; TEx. 90, at 6, 22.
- ²⁴ Reitman Aff. ¶¶ 45, 75; *see* Beard Dep. 59:3–6.
- ²⁵ Hurst Dep. 203:12–18; Reitman Aff. ¶ 75.
- ²⁶ Thagard Dep. 104:10–18; Grainger Dep. 189:12–191:1; Reitman Aff. ¶ 75.
- ²⁷ Hurst Dep. 203:19–205:12; Grainger Dep. 189:12–191:1; Grunden Dep. 171:11–172:9; Reitman Aff. ¶ 75.
- ²⁸ DSM Exhibit A, at 5; Wilms Dep. 106:25–107:2.
- ²⁹ DSM Exhibit A, at 14.
- ³⁰ TEx. 57; Wagner Dep. 328:22–329:7.
- ³¹ TEx. 87; Wagner Dep. 277:9–23.
- ³² DSM Exhibit A, at 7; Wilms Dep. 107:3–6.
- ³³ Wilms Dep. 65:12–68:15; DX388, ECF No. 349.213.
- ³⁴ TEx. 57; DX65, at HNY-00689252; PX30, at HNY-00032820, ECF No. 349.266.
- ³⁵ TEx. 87; PX46, at HNY-00680237–39, ECF No. 349.267.
- ³⁶ DSM Exhibit A, at 12–13; Wilms Dep. 200:16–25; Werff Dep. 160:6–15; Van Es Dep. 153:14–154:6; Beard Dep. 203:13–24.
- ³⁷ DSM Exhibit A, at 12–13; Wilms Dep. 200:16–25; Werff Dep. 160:6–15; Van Es Dep. 153:14–154:6; Beard Dep. 203:13–24.
- ³⁸ Hurst Dep. 98:5–100:3, 208:19–24; Grunden Dep. 310:5–311:13; Chern Dep. 279:7–14.
- ³⁹ Wagner Dep. 276:21–277:8; Grunden Dep. 267:25–268:7, 312:5–25; Hurst Dep. 100:4–10, 209:19–210:16.