

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

<b>ITEX, INC., et al.</b>	)	
	)	
<b>Plaintiffs/Counter-Defendants,</b>	)	<b>No. 05 CV 6110</b>
	)	
<b>v.</b>	)	<b>Wayne R. Andersen</b>
	)	<b>District Judge</b>
<b>WESTEX, INC., et al.</b>	)	
	)	
<b>Defendants/Counter-Plaintiffs.</b>	)	

**MEMORANDUM OPINION AND ORDER**

This case is before the court for construction of disputed claim language in U.S. Patent No. 5,468,545 (the “545 Patent”).

**BACKGROUND**

This case involves a patent for treated, flame resistant cotton blended fabrics. “[C]otton fabrics used for clothing are comfortable to wear, generally because of the cotton fabrics’ ability to breathe, their flexibility, and the generally good feel the fabrics have when placed against the skin.” (Defs.’ Claim Construction at 2). “A disadvantage of using 100% cotton fabric for industrial clothing applications, however, is that cotton fabric is not inherently flame resistant, and flame resistant clothing is essential for certain industrial users . . . .” *Id.* “Flame resistance is achieved by impregnating the cotton yarn with a pre-polymer containing phosphorous, and then polymerizing the pre-polymer, leaving the cotton impregnated with a phosphorous polymer.” (Pls.’ Claim Construction at 6). Including non-flame-retardant thermoplastic fibers, such as nylon, in the fabric provides a much longer wear life than 100% cotton materials, but non-flame-retardant thermoplastic fibers do not “wet,” which means they do not become impregnated with flame-retarding polymer. *Id.* at 5-6. Because these thermoplastic fibers may burn, “the flame

retardant capability of the cotton must extend to attenuate the burning tendency of the non-cotton fibers.” *Id.* at 6. A simple solution is to increase the amount of polymer in the cotton, but the resulting fabric becomes stiff and uncomfortable. *Id.* “Goals of the ‘545 Patent include a long wear life product with sufficient phosphorous-containing polymer to retard the burning of both cotton and the non-flame-retardant thermoplastic fibers, yet leave the fabric soft.” *Id.*

The ‘545 Patent was originally issued on November 21, 1995, and was subsequently confirmed by two reexaminations by the United States Patent and Trademark Office (“PTO”) on July 17, 2007 and February 19, 2008. (Dkt. No. 1521-1).

Itex, Inc., (“Itex”) and MF&H Textiles, Inc. (“MF&H,” collectively “Plaintiffs”) filed the instant lawsuit on October 21, 2005. Plaintiffs’ complaint alleged that Westex, Inc. (“Westex”) was infringing on the ‘545 Patent by making or selling certain flame retardant cotton blended fabrics. Other defendants have also been added to the lawsuit, including King America Finishing, Inc. (“King America”), Western Pierce Dyers & Finishers, Inc. (“Western”), Workrite Uniform Company Inc. (“Workrite”), VF Imagewear, Inc. (“VF”), Cintas Corporation (“Cintas”), Unifirst Corporation (“Unifirst”), G&K Services (“G&K”), Aramark Uniform & Career Apparel, LLC (“Aramark”), and Greenwood Mills, Inc. (“Greenwood,” collectively with Westex, “Defendants”).

On February 29, 2008, Plaintiffs initiated a second lawsuit in the Northern District of Illinois also involving alleged infringement of the ‘545 Patent (08 CV 1224). On February 12, 2009, the Honorable Morton Denlow entered an order consolidating the two cases for the purposes of claim construction and related discovery. (Dkt. No. 119).

The '545 Patent has six claims, with Claim 1 being the only independent claim, and the only one at issue for the purpose of claim construction. The parties filed extensive briefs on claim construction, and the court held a Markman hearing on December 21, 2009.

### LEGAL STANDARD

The first step in a patent infringement case is to interpret and construe the patent claims, “which define the scope of the patentee’s rights under the patent.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970 (Fed. Cir. 1995). The construction of a patent’s claims is a question of law to be determined by the court. *Id.* at 970-71.

“The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Terlep v. Brinkman Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005) (quoting *Embrex, Inc. v. Serv. Eng’g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000)). “The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art in question at the time of the invention.” *Kara Technology Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1345 (Fed. Cir. 2009) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)).

In addition to studying the words of the claim, a court may also look to the patent specification, *Phillips*, 415 F.3d at 1315, the prosecution history, *Vanderlande Indus. Nederland BV v. I.T.C.*, 366 F.3d 1311, 1318 (Fed. Cir. 2004), and extrinsic evidence, *Phillips*, 415 F.3d at 1317-18.

With respect to the specification, the Federal Circuit has explained, “[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.” *Kara*, 582 F.3d at 1345 (citing *Phillips*, 415 F.3d at 1323). “In particular, we have expressly rejected the contention that if a

patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Kara*, 582 F.3d at 1345 (citing *Phillips*, 415 F.3d at 1323).

## DISCUSSION

The complete language of Claim 1, broken into segments for ease of analysis, is as follows:

- 1 - Wash resistant durable fabrics, including woven fabrics comprising:
  - a) 50 to 95% cotton fibers; 5-30% non-flame-retardant thermoplastic fibers in which warp yarns for woven fabrics are comprised of 50 to 95% cotton and 5 to 30% non-flame-retardant thermoplastic fibers;
  - b) said fibers being uniformly treated with a durable flame retardant of a prepolymer of urea and tetrakis (hydroxymethyl) phosphonium salt which has been applied, ammoniated and oxidized in a manner such that
  - c) after exposure to five washes and twenty-four hours emersion in boiling water
    - i) the cotton fabrics burn less than 15 cm (6”) at cut edges and
    - ii) retain at least 2.0% and no more than 3.0% phosphorous by weight of fabric.

(‘545 Patent, col. 8, lns. 29-44). The following sections address each segment of Claim 1.

### I. Part 1 – “Wash resistant durable fabrics...”

#### A. *Relevant Claim Language*

The relevant language for this section is as follows: “Wash resistant durable fabrics, including woven fabrics comprising.” (‘545 Patent, col. 8, lns. 29-30).

#### B. *Parties’ Positions*

Plaintiffs and Defendants are in agreement that this language does not require construction.

#### C. *Court’s Construction*

The court concludes that this language does not require construction.

## II. Part a) – “50 to 95% cotton fibers...”

### A. Relevant Claim Language

The relevant language for this section consists of the following: “50 to 95% cotton fibers; 5-30% non-flame-retardant thermoplastic fibers in which warp yarns for woven fabrics are comprised of 50 to 95% cotton and 5 to 30% non-flame-retardant thermoplastic fibers.” (‘545 Patent, col. 8, lns. 30-34).

### B. Parties’ Positions

Defendants take issue with the term “thermoplastic fibers.” They do not argue that the term is unclear or indefinite, but instead assert that the term, as used in Claim 1, must be construed with the following limitation - “thermoplastic fibers *with a melting point above 200 degrees Celsius.*” In support of their assertion, Defendants point to the following language in the specification of the ‘545 Patent:

Thermoplastic fibers with a melting point above 200 deg C. such as 66 and 6 nylon, polyethylene terephthalate and other polyesters, *must be used* to prevent loss of fabric durability well below the degradation temperature of cotton.

(‘545 Patent, col. 3, lns. 32-36) (emphasis added).

In their rebuttal brief, Plaintiffs state, “While the specification does provide an example of thermoplastic fiber melting points required when a specific situation is desired, it makes no clear intention that all fabrics or all embodiments of the fabric require thermoplastic fibers with such specific melting points.” (Pls.’ Rebuttal at 10). Plaintiffs argue that this language “simply provided one exemplary situation where such fibers ‘must’ be used – that is, situations in which the loss of fabric durability well below the degradation temperature is not desired (such as, for example, protection against prolonged radiant heat, molten splash, or in flash fires).” (*Id.* at 11). Furthermore, Plaintiffs point out that “the corollary to [the previous] statement is also supported

by the specification – that is, if loss of fabric durability below the degradation temperature of cotton is not a problem, then thermoplastic fibers without such specific melting point may then be used (such as, for example, where exposure is less intense, less prolonged, and less likely).” (*Id.* (internal citations omitted)).

*C. Court’s Construction*

We agree with Plaintiffs. We conclude that the term “thermoplastic fibers” carries the ordinary meaning understood by people in this field: “fibers made from a plastic material that becomes soft when heated and hard when cooled.” (Pls.’ Rebuttal at 12). The term is not limited to a type of thermoplastic fiber with a specific melting point. The melting point of 200 degrees Celsius is only mentioned once in the ‘545 Patent – no other instance in which thermoplastic fibers are discussed do the inventors mention any specific melting point. Moreover, when the statement referring to the melting point is read in its entirety, it is clear that the phrase “must be used” does not mean that a material with this melting point “must *always* be used,” but rather that a material with this melting point must be used to achieve one specific purpose – “to prevent loss of fabric durability well below the degradation temperature of cotton.” We agree with Plaintiffs’ assessment that the statement at issue “clearly does not rise to the level of a clear or unequivocal statement that a specific melting point of the thermoplastic fibers is required for all embodiments of the claimed invention.” (Pls.’ Rebuttal at 11.)

**III. Part b) – “said fibers being uniformly treated...”**

*A. Relevant Claim Language*

The next section of text from Claim 1 to be analyzed consists of the following: “said fibers being uniformly treated with a durable flame retardant of a prepolymer of urea and tetrakis

(hydroxymethyl) phosphonium salt which has been applied, ammoniated and oxidized in a manner such that.” (‘545 Patent, col. 8, lns. 34-39).

*B. Parties’ Positions*

Defendants contend that the inclusion of the verbs “applied,” “ammoniated” and “oxidated” make Claim 1 a “product-by-process” claim. (*Id.* at 20). According to Defendants, the specific process that must be applied to the fabric is the detailed process described in the specification. Defendants believe the proper construction of this section is as follows:

“the fibers throughout the wash resistant durable fabric undergo the same treatment process to produce the results recited in claim 1, said treatment process being, in a single application and cure process, the steps of: (1) drawing the fabric through an aqueous bath containing a sufficiently high concentration of the THP/urea prepolymer to apply to the fabric, at 60% to 80% wet pickup, a calculated amount of 3.0% to 4.0% of phosphorus by weight of the fabric, (2) squeezing the fabric through a pad roll to control wet pickup to 60% to 80%, (3) drying the fabric to between 8% to 12 % moisture level, (4) ammoniating the THP/urea prepolymer in the fabric by exposing the fabric to ammonia, and (5) oxidizing the THP/urea prepolymer in the fabric by exposing the fabric to hydrogen peroxide”

(Defs.’ Claim Construction at 19).

Plaintiffs claim that the process detailed in the specification is simply *one example* of a method by which the desired product can be achieved. “The fact that claim 1 includes a process step does not convert it to a process claim.” (Pls.’ Rebuttal at 14). “Nowhere does the specification say or even imply that a single pass process must be used or is essential, nor does it indicate that specific wet pick-up, moisture levels, or calculated amounts of phosphorous must be used or are essential.” (Pls.’ Rebuttal at 17). “The inventors simply complied with the basic statutory requirements for the patent’s specification – providing at least one example of how to make the inventive fabric.” (Pls.’ Rebuttal at 18 (citing 35 U.S.C. § 112, ¶ 1)). “After wedding through the entirety of their arguments, the Defendants basically imply that just because the specification describes additional details related to one exemplary way to make the claimed

fabric, this fact alone somehow compels rewriting the claims to include these additional details.” (Pls.’ Rebuttal at 18).

Plaintiffs assert that the phrase “uniformly treated” means “the flame retardant is uniformly distributed across the interior diameter of the cotton fibers.” To rebut this construction, Defendants make three main arguments. First, looking to Plaintiffs’ choice of language, Defendants argue, “Had the inventors of the ‘545 Patent intended to merely claim a product characteristic, as Plaintiffs contend, the inventors could have recited phrases such as ‘said fibers having micro-uniformity’ or ‘said fibers having a uniform distribution,’ in claim 1, but they did not do so.” (Defs.’ Rebuttal at 6). Furthermore, Defendants point out that in the specification of the ‘545 Patent, the inventors used the terms “distributed” and “treated” differently, so they can’t be read to have the same meaning now. (Defs.’ Rebuttal at 7-9). Second, relying on the PTO’s assessment of the ‘545 Patent, Defendants explain that in the first reexamination of the ‘545 Patent, the PTO said that this element of the claim is a *process* limitation (uniform treatment of fibers with a chemical containing phosphorous), not a *result* (fibers having uniformly distributed phosphorous). (Defs.’ Rebuttal at 6, 10). Third, Defendants turn to the definition of the technical terminology used in this portion of the claim, arguing that Plaintiff’s construction does not make technical sense. The claim refers to “**prepolymer**,” which is different from “**polymer**.” “Prepolymer” refers to the substance applied to the fabric when treating is, whereas “polymer” is the flame retardant substance that results after the prepolymer is ammoniated. Since the claim refers to “prepolymer,” it must be referring to the substance used to initially treat the fabric, not the distribution of the resulting substance (polymer). (Defs.’ Rebuttal at 7).

Plaintiffs address this final, technical point by providing the following explanation:



The actual claim language requires the fibers to be uniformly treated with the “durable flame retardant” (*i.e.*, the end result) and not the prepolymer. It then defines that the durable flame retardant is the “prepolymer” that has been “applied, ammoniated and oxidized.” Therefore, the “durable flame retardant” is the end result of the prepolymer being “applied, ammoniated and oxidized.”

(Pls.’ Sur-Reply at 2). Plaintiffs go on to argue that the entirety of the specification “clearly confirms that it is the end resulting durable flame retardant that is uniform throughout the yarn rather than the prepolymer.” (*Id.* (emphasis in original)).

Plaintiffs then state, “To the extent the Court analyzes ‘uniformly treated’ as a process limitation rather than a product limitation, the Defendants’ wholesale rewrite of claim 1 to include over 100 additional words is still completely improper.” (Pls.’ Sur-Reply at 2). If the Court takes this perspective, the phrase “needs no construction because it simply means treatment in a uniform or consistent manner.” (*Id.* at 4).

### C. *Court’s Construction*

We agree with Defendants and the PTO that this portion of the claim language refers to a process limitation, rather than a characteristic of the resulting product. However, we do not adopt Defendants’ view construing the process to be limited to the particular process described in the specification. The specification simply sets forth *one* example of a process that can be used to achieve the necessary result. Therefore, this court concludes that the phrase “uniformly treated” refers to a process, but does not require construction. As Plaintiff stated in its sur-reply brief, the phrase “uniformly treated” carries its natural meaning – “treatment in a uniform manner.”

## IV. **Part c) – “after exposure to five washes...”**

### A. *Relevant Claim Language*

The next section of language from Claim 1 is: “after exposure to five washes and twenty-four hours emersion in boiling water.” (‘545 Patent, col. 8, lns. 39-40).

*B. Parties' Positions*

Defendants argue that this section requires construction, but is so indefinite that it is not capable of being properly construed. According to Defendants, “The claim language at issue here provides no guidance on the type of ‘wash[]’ and/or [sic] ‘boil[]’ to be used,” and “the ‘545 Patent specification does not remedy the problem.” (Defs.’ Construction at 36).

Defendants note that the specification describes one instance of a boil and wash procedure in connection with the Edge Burn test, but that even that description still leaves several critical elements undetermined, including:

the temperature of the water in the wash during each laundry cycle, the hardness of the water in the wash, the mineral content of the water used in the wash, the amount of agitation in the wash, the temperature of the drying cycle, the type of detergent used in the wash, the presence of additives and types of additives to be used, the type of detergent used in the boil, the hardness of the water used in the boil, and the size of the boiling pot.

(Defs.’ Construction at 37). According to Defendants, “These parameters can significantly impact on [sic] whether or not the amount of retained phosphorous for a given sample falls within or outside the requirements of the claim.” (*Id.*)

Plaintiffs assert that this portion of the claim does not require construction. Plaintiffs argue that “[t]here is nothing special about washing and drying clothes or boiling them in water to even a lay person. So, it is even more basic for one of ordinary skill in the art to understand.” (Pls.’ Rebuttal at 29). Plaintiffs also point to the fact that in the Morrison Declaration, which Westex submitted to the PTO during the second reexamination of the ‘545 Patent, Mr. Morrison admitted that “he completed the wash and boil procedure ‘as described in the patent.’” (Pls.’ Rebuttal at 27 (quoting Morrison Declaration)). Moreover, “Defendants’ expert (Dr. Johnson) could not provide any test results, documentation, or other reports to substantiate that the level of

phosphorous would fall outside the claimed phosphorous range if any wash and boil factors were varied.” (Pls.’ Rebuttal at 33).

According to Plaintiffs:

To the extent the Court deems appropriate to further elaborate on this claim phrase through claim construction, the following should be adopted because it is consistent with how one of ordinary skill in the art would understand the intentions of the inventors from the specification for this basic task:

- home launderings at 140°F with detergent alternated with drying in a drier after each wash;
- followed by twenty-four hours in boiling water containing a small amount of detergent as a wetting agent; and
- fabrics are then rinsed by using one home laundry cycle at 140°F without detergent and dried in a dryer.

(Pls.’ Rebuttal at 37). Plaintiffs went on to add:

To the extent that there are any gaps in the basic understanding of washing and drying clothes using a home washing machine and dryer, as well as the ability to boil water, one of ordinary skill in the art of flame retardant fabrics would know the following:

- home laundering, drying, and boiling should use common home washing, drying, and boiling equipment (i.e., a washer and dryer and pot to boil water);
- equipment, garment, and detergent labels are consulted for washing and drying requirements;
- common household detergent is used, such as Tide or equivalent;
- published standards appropriate to washing and drying, such as AATCC 135 or equivalent, could be consulted, as needed

(*Id.*).

### *C. Court’s Construction*

We conclude that the phrase “five washes and twenty-four hours emersion in boiling water” requires additional explanation in order to be properly understood. However, we disagree with Defendants’ assertion that this phrase is incapable of being construed. Looking to the specification, we find the details for a process involving 5 launderings and 24 hours of boiling in connection with the Edge Burn test. The specification explains that process as follows:

Fabrics are tested for Edge Burn after 5 home launderings at 140 deg F. with detergent alternated with drying in a drier after each wash, followed by 24 hrs in boiling water containing a small amount of detergent as a wetting agent. Fabrics are then rinsed by using one home laundry cycle at 140 deg. F. without detergent and dried in a dryer.

(‘545 Patent, col. 4, lns. 56-61). It is clear that this is the process that the inventors were describing with the phrase “five washes and twenty-four hours emersion in boiling water.”

## **V. Part i) – “the cotton fabrics burn...”**

### *A. Relevant Claim Language*

This portion of Claim 1 states, “the cotton fabrics burn less than 15 cm (6”) at cut edges and.” (‘545 Patent, col. 8, lns. 40-41).

### *B. Parties’ Positions*

The parties’ dispute three specific phrases in this section – “cotton fabrics,” “burn,” and “cut edges” – and also make general arguments about the section overall.

#### *1. “Cotton Fabrics”*

First, we look to the phrase “cotton fabrics.” Defendants claim it is not possible to determine what the so-called “cotton fabrics” are. “The language of the preceding portion of the claim identifies several types of fabrics or fibers.” (Defs.’ Construction at 39 (quoting ‘545 Patent, col. 8, lns. 29-44)). Furthermore, it is clear from the specification that “cotton fabrics” and “blended fabrics” are different. (Defs.’ Construction at 39).

In their opening construction brief, Plaintiffs argue,

[T]he claim language and the specification plainly confirm and support that the proper construction of the term “cotton fabric” is synonymous with the term “woven fabrics,” which include 50 to 95% cotton fibers and 5 to 30% non-flame-retardant thermoplastic fibers.

(Pls.’ Construction at 12). However, in their rebuttal brief, Plaintiffs assert that “cotton fabrics” was “an obvious typographical error” which “clearly should have been ‘woven fabrics.’” (Pls.’ Rebuttal at 40).

## 2. “Burn”

Second, we turn to the word “burn.” Defendants argue that “burn” can have several different meanings. They include three different definitions from Webster’s Dictionary, including “to undergo combustion,” “to contain a fire,” and “to . . . damage by exposure to heat or fire.” (Defs.’ Construction at 41). According to Plaintiffs, even though the word “burn” may have multiple meanings when read out of context from the claims, the specification provides a clear description of what the inventors intended “burn” to mean. (Pls.’ Rebuttal at 40). The specification states that “burn” is “evidenced by observing the height to which the flame rises” and “the height to which the flame rises is measured by determining the maximum length of fabric blackened to at least a 6 cm width.” (‘545 Patent, col. 5, lns. 20-21, 14-16).

## 3. “Cut Edges”

Third, we examine the phrase “cut edges.” Defendants argue,

One may interpret the term “the cut edges” to mean any edge that has been cut, but even that definition leaves open critical questions regarding whether or not a sample is cut from the treated fabric (and how it is cut) and thereby has “edges,” what the size and shape of the sample is, whether the edges are cut in the direction of the warp or the fill of the fabric, each of which can potentially lead to different results.

(Defs.’ Construction at 41 (quoting Johnson at ¶¶ 41-44)). Plaintiffs contend that “cut edges” should be construed to mean “an exposed vertical and warp-cut edge of a sample as tested in the Edge Burn Test, although the testing flame is applied to an exposed lower horizontal edge.” (Pls.’ Construction at 13; Pls.’ Rebuttal at 41).

## 4. General Arguments

Lastly, looking to this section as a whole, Defendants assert that even if one argues that this entire phrase refers to the Edge Burn Test, that would be inaccurate and inconsistent with the language of each section. (Defs.’ Construction at 42). Defendants point to the fact that the Edge

Burn Test involves a flame placed a certain distance from an edge of the fabric, while the claim language involves a flame “at” cut edges. Plaintiffs assert that it is clear that this portion of the claim refers to the Edge Burn Test, as the “specification describes only a single Edge Burning Test and describes it as a modification of Federal Test Method 5903.1.” (Pls.’ Rebuttal at 39). Furthermore, Plaintiffs assert that Westex admitted that this claim language is definite due to the fact that Mr. Morrison submitted a declaration to the PTO during the second reexamination of the ‘545 Patent, in which Mr. Morrison stated that he completed the Edge Burn Test as described in the ‘545 Patent, and made no indication that he could not perform the test or that he did not know what to measure. (Pls.’ Rebuttal at 38).

*C. Court’s Construction*

The court concludes that it is clear that the phrase “cotton fabrics” must mean “woven fabrics.” This is not because “cotton fabrics” and “woven fabrics” are synonymous, as Plaintiffs claimed in their opening construction brief. It is obvious from the language in the ‘545 Patent, as well as the parties’ briefs, that “cotton fabrics” are different from “woven fabrics” that contain both cotton *and* thermoplastic fibers. “If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.” *Energizer Holdings, Inc. v. ITC*, 435 F.3d 1366, 1370-71 (Fed. Cir. 2006). It is abundantly clear that the term “cotton fabrics” is meant to have consistent meaning with the term “woven fabrics” used at the beginning of Claim 1.

Furthermore, it is clear that part (c)(i) of the claim refers to the Edge Burn Test described in the specification. The section explaining the Edge Burn Test specifically states that it is “a modified version of the Vertical Flammability Test.” (‘545 Patent, col. 5, Ins. 4-5). Plaintiffs assert that the two tests measure different characteristics of the fabric – the Vertical Flammability

Test reveals whether the fabric is flame retardant, whereas the Edge Burn Test measures uniformity of distribution of flame retardant materials throughout the fabric – but the manner of *conducting* the tests is quite similar. The Vertical Flammability Test is explained in the earlier section of the specification. (‘545 Patent, col. 4, lns. 34-52). Any perceived holes in the description of the Edge Burn Test should be filled by looking to the standard elements of the well-established Vertical Flammability Test. For example, the size and shape of the samples in the Edge Burn Test are not defined, so the reader would know to look to the size and shape utilized in the Vertical Flammability Test – a rectangle measuring 76x305mm. (‘545 Patent, col. 4, lns. 36-37). The explanation of the Vertical Flammability Test refers to “edges” as the long, cut sides of the fabric sample, and refers to “end” as the non-cut, shorter side. (‘545 Patent, col. 4, lns. 36-42) (“A rectangular cloth test specimen . . . is placed in a holder and suspended vertically in a cabinet with the *lower end* ¾ inch (19 mm) above the top of a gas burner. The flame is held in the center of the fabric and *no edges are exposed* to the flame because they are enclosed in the holder.”) (emphasis added). Similarly, the Edge Burn Test starts with the same size rectangular fabric sample mounted vertically over a flame. However, the Edge Burn Test differs from the Vertical Flammability Test in the following ways:

	<b>Edge Burn Test</b>	<b>Vertical Flammability Test</b>
<i>Cut Direction</i>	the cut of the sample must be in the “warp or wale direction only” (‘545 Patent, col. 5, ln. 6)	the long edge of the sample to be “parallel to the warp or fill direction” (‘545 Patent, col. 4, lns. 37-38)
<i>Exposed Edges</i>	only one “edge” (meaning “cut edge”) is placed in a holder, with the other “edge” being exposed (‘545 Patent, col. 5, lns. 8-11)	“no edges are exposed” (‘545 Patent, col. 4, ln. 41)
<i>Flame Placement</i>	the flame is placed 10 mm and then 20 mm from the exposed vertical edge (‘545 Patent, col. 5, lns. 10-12)	“the flame is held in the center of the fabric” (‘545 Patent, col. 4, lns. 40-41)

The specification makes clear that the phrase “the cotton fabrics burn less than 15 cm (6”) at cut edges” refers to the Edge Burn Test, and the details in the specification sufficiently describe how that test is to be performed.

Furthermore, while “burn” may have multiple meanings in every day use, the specification makes clear exactly what “burn” means in the context of this patent. The specification states that “burn” is “evidenced by observing the height to which the flame rises” and “the height to which the flame rises is measured by determining the maximum length of fabric blackened to at least a 6 mm width.” (‘545 Patent, col. 5, Ins. 20-21, 14-16)

## **VI. Part ii) – “retain at least 2.0% and no more than 3.0%...”**

### *A. Relevant Claim Language*

The final portion of Claim 1 consists of the following language: “retain at least 2.0% and no more than 3.0% phosphorous by weight of fabric.” (‘545 Patent, col. 8, Ins. 42-44).

### *B. Parties’ Positions*

Defendants argue that element (c)(ii) means: “after uniform treatment, the fabrics have at least 2.0% and no more than 3.0% phosphorous by weight of fabric and continue to have at least 2.0% and no more than 3.0% phosphorous by weight of fabric after exposure to the 5 Wash/24 Hour Boil.” (Defs.’ Construction at 27). Defendants support this argument by explaining that the ordinary meaning of “retain” is to “keep” or “hold,” which therefore must mean that the fabric “keeps” or “holds” the relevant level of phosphorous “both before and after the 5 Wash/24 Hour Boil procedure.” (Defs.’ Construction at 28-29). Notably, in order to explain their construction, Defendants needed to use the phrase “both before and after,” whereas the language in the claim only uses the word “after.” Defendants go on to argue that the specification emphasizes the need for the fabric to be comfortable and flexible, and that a user’s concern



would be how the garment feels throughout its useful life, not just at the end of its useful life. (Defs.' Construction at 29-30). However, broader ideas such as a customer's primary concerns need not be considered when the claim language is clear. In the claim language itself as well as in the specification, the 2.0% to 3.0% quantity of phosphorous is always described as existing "*after*" the wash and boil process.

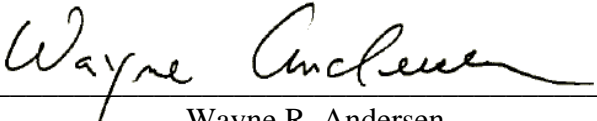
Plaintiffs object to Defendants' insertion of the word "before" when the inventors "specifically elected to use only the term 'after' in the claim." (Pls.' Rebuttal at 19). According to Plaintiffs, this portion of the claim means: "whatever the level of phosphorous is before the wash and boil procedure, at least 2.0% and no more than 3.0% phosphorous by weight must be in the fabric after the wash and boil procedure." (Pls.' Rebuttal at 24).

*C. Court's Construction*

Plaintiffs concluded in their rebuttal, "The claim language cannot be any clearer that the only relevant phosphorous level is that after the wash and boil procedure." (Pl.'s Rebuttal at 20). We agree. The requirement that the fabric retain a certain amount of phosphorous refers solely to the state of the fabric *after* the wash and boil procedure, without any reference to the level of phosphorous existing *before* the procedure.

**CONCLUSION**

The disputed claim terms are construed in accordance with the conclusions set forth in this Memorandum Opinion and Order.

  
\_\_\_\_\_  
Wayne R. Andersen  
United States District Judge

Dated: July 20, 2010