FIBER CLASSIFICATION
FOCUS GROUPS
CARGILL DOW LLC

SUMMARY REPORT

Loeffler Ketchum Mountjoy

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TABLE OF CONTENTS

INTRODUCTION AND METHOD

The following report summarizes the results of qualitative research conducted on behalf of Cargill Dow LLC. The overall objective of the research was to determine whether it will be confusing to consumers if NatureWorks™ PLA fibers are classified as polyester. If found confusing, would consumers support having a new category of fibers for PLA.

In order to accomplish the research objectives, Loeffler Ketchum Mountjoy conducted two focus groups in Charlotte, N.C. The groups, which consisted of 15 people each, were held with general consumers who had purchased clothing (any type, including sports wear, casual clothes, formal attire, etc.) within the last six months. Participants represented a market mix of gender, marital status, age, ethnicity and annual household income.

The groups began with a general discussion about ground rules. A brief explanation was given regarding the FTC requirement to classify textile fibers for clothing and how that is done. Participants started by reacting to a list of different types of textile fibers, providing feedback on the attributes they associated with each. Participants then were asked to classify each listed textile fiber as "natural" or "synthetic" based on their opinions and perceptions, and then discussed differences they have experienced with "natural" versus "synthetic" fibers. Participants also discussed how important the distinction between "natural" and "synthetic" is when making purchasing decisions.

Participants then were introduced to the concept of NatureWorks™ fibers – fiber made from agricultural crops such as corn – and asked to comment and classify it as "natural" or "synthetic" based on their opinions and perceptions. Participants were taken through an exercise which listed various fiber attributes and asked them to identify fibers that exhibited the specific attributes.

Finally, NatureWorks™ fibers were explained to have all of the discussed attributes and participants were asked if any of the previously discussed textile fiber classifications accurately reflected the attributes of NatureWorks™. Participants were encouraged to explain their answers in depth to get an accurate understanding of how they perceived NatureWorks™ and how it fits in to the existing textile fiber classifications.

Copies of the recruitment screener and discussion guide may be found in the Appendix of this report.

This report is intended as a summary of focus group findings. It is not intended as a detailed reporting of session proceedings. The groups were videotaped. Readers interested in greater detail are encouraged to review the tapes.

GENERAL DISCUSSION

Both groups began with a general discussion about fibers used in clothing and household items. The discussion touched on preferences, perceptions and uses that came to mind most often. This addressed everything from personal apparel to furniture coverings to fabric used in automobile interiors. Words that were initially thought of in response to the subject of fibers included cotton, polyester, thread, weaving, texture, knitting, wool, softness and microfibers.

Overall, participants were fairly knowledgeable about various fibers, but had few concerns as far as the specific details of one fiber versus another when purchasing products. While many people had stronger preferences for one type of fiber over another, the primary fiber-related concerns dealt with ease of care (home wash or dry-clean) and possible allergies. Some expressed concern regarding flammability as it relates to children's clothing. Participants agreed that these same concerns are why the FTC requires labeling of garments and household items.

Participants generally felt cotton, silk and wool blends were most popular as far as clothing fibers, while cotton and linen were most popular for household items.

TEXTILE ATTRIBUTES

Participants were asked to discuss the qualities or attributes that they associated with different textile fibers that are commonly used in wearing apparel and household items. A list of several textile fibers was presented and participants discussed what crosses their mind when they see each of the listed textiles on a product label. The list of fibers included:

➤ Wool

➤ Nylon

➤ Cotton

➤ Polyester

➤ Silk

➤ Rayon

➤ Linen

➤ Spandex

➤ Acrylic

With regards to *wool*, participants associated attributes such as hot, scratchy, durable, varying in quality and dry-clean-only. There was a relatively positive reaction to wool and most thought of it as a "seasonal" fiber found in sweaters, uniforms and apparel used in colder climates and months. Wool was looked on as a fiber with a "long life."

Nylon was thought of as a fiber that is light, "airy," smooth and useful with items such as stockings and wind suits. There was inconsistency with regards to its strength, as some found it "durable," while others felt it was "flimsy." Many felt it was not easy to care for. One concern all agreed on was that of flammability, feeling that nylon was dangerous in that it could easily catch fire and melt quickly. This was especially a concern with regards to children's apparel.

As the views of *cotton* were discussed, most agreed that it was an extremely flexible fiber and allowed for a variety of applications. It was noted that there are different levels of quality with cotton, which depended on the processing involved. The various quality levels were discussed and concerns with poor quality cotton primarily focused on shrinkage. There were mixed views on the ease of care – some citing that it wrinkles easily, while others pointed out that it is easy to wash. Other descriptors included soft, comfortable and clean.

Polyester was viewed as a cheap, man-made fiber that was generally associated with the 1970s. While it was agreed that polyester was a "wrinkle-free" fiber that was easy to care for, it also was one that tended to be very warm and snag easily. There were a few concerns with its high flammability. Initially, reactions were not very positive, but as the discussion continued, many conceded that polyester has improved over time and today has become somewhat desirable, especially in blends.

When discussing the attributes of *silk*, participants used words such as soft, smooth, shiny and light-weight. Silk was looked at as a "high-maintenance" fiber that would be difficult to care for. It was also described as fancy and expensive.

With regards to *rayon*, all felt the fiber seemed very cheap. Many felt the fiber was sturdy or strong, but had concerns about its ability to avoid shrinkage or resist wrinkling. All in all, participants did not have much feedback or opinion on rayon.

The attributes participants associated with *linen* were cool, light and expensive. While most agreed that linen had a nice look, they also agreed that a concern is that it wrinkles easily and it is difficult to care for, requiring dry-cleaning only.

Participants felt *spandex* was a stretchy, shiny and form-fitting fiber typically used in sports and exercise attire. Opinions varied as far as whether or not the fiber had a favorable appearance. Many agreed that spandex was a comfortable fiber.

Acrylic was a fiber that participants felt was durable, stretchy and warm. Acrylic was primarily thought of as a "casual" fiber that was easy to care for.

"NATURAL" VS. "SYNTHETIC" FIBERS

Participants were asked a series of questions regarding their opinions and perceptions of "natural" and "synthetic" fibers.

Classification

Referring to the list of textile fibers used earlier, participants were asked to classify each fiber as a "natural" or "synthetic" material. Participants associated the idea of a "natural" fiber with cotton, wool, silk and linen – tying each to the fact they are derived from something natural that is grown. Participants discussed and debated the origins of each and agreed that natural fibers stood apart from synthetics based on look and feel.

With regards to "synthetic" fibers, participants identified nylon, polyester, rayon, spandex and acrylic. Some participants were aware of the petroleum-basis of many synthetic fibers and discussed it with the other participants, who were somewhat surprised. Many felt that the reason for "synthetic" fibers is to create fiber characteristics that are unavailable in existing fibers. Participants concluded that anything that was "man-made" was a synthetic fiber.

Personal Experiences

During this discussion, participants were asked to discuss the experiences they have had personally with "natural" or "synthetic" fibers. Participants felt that natural fibers typically provide better comfort than synthetic fibers. The majority felt that natural fibers were not the easiest to care for, but that this has improved considerably over the last few years. Participants agreed that natural fibers tended to be more expensive than synthetics.

As participants reflected on personal experiences with synthetic fibers, most agreed that they were relatively easy to care for. They felt that synthetics might be able to provide benefits that natural fibers are unable to. There was a concern about synthetic fibers snagging more often than naturals.

Effect on Purchasing Decisions

Finally, participants were asked to discuss how important the "natural" versus "synthetic" fiber distinction is to them when making purchasing decisions for wearing apparel or household items. In general, participants did not have strong preferences for natural versus synthetic fibers and indicated that any effect on a purchasing decision would relate to what a particular item's use might be.

As far as clothing, neither natural nor synthetic fibers were given a more positive or negative response than the other. It was agreed that the "natural" versus "synthetic" distinction was more important in the past and generally, the preferred fiber for specific clothing depended on the season, the age of the person wearing it, its specific use or possible allergies of the wearer.

Discounting the natural/synthetic factor, many felt that the biggest effect on a purchasing decision was the look of the fiber (does it look good? does it make me look good?) and how easy it is to care for. The same feelings were expressed related to fibers used with household furnishings. The primary issues were how the fiber looked, how it felt and how easy it was to care for. It was felt that different fiber types are used for different household applications and as a result, both natural and synthetic fibers were equally accepted and used.

REVIEW OF NATUREWORKS™

Participants went through an exercise that introduced the concept of NatureWorks™ fibers and had participants determine its proper classification among textile fibers.

"Natural" vs. "Synthetic"

Participants were presented with the concept of NatureWorks™ fiber – fiber made from agricultural crops such as corn – and asked to comment and classify it as "natural" or "synthetic" based on their opinions and perceptions. This discussion created considerable confusion as participants wrestled with the idea that NatureWorks™ starts as corn, which comes from a plant as cotton does. In contrast, NatureWorks™ goes through several processing and altering steps, as synthetics do, to arrive in its finished fiber form. The confusion came from understanding what actually makes a fiber natural or synthetic. The question that was debated was if a natural fiber has to be altered to get to its final state, is it still a natural fiber? On the other hand, is it synthetic because it has been altered by man through the refinement process? In the end, the majority of people felt that NatureWorks™ was a synthetic fiber.

In the discussion, participants made reference to polyester being derived from petroleum – starting as a natural element and going through a process that resulted in a fiber. The comparison between NatureWorks™ and polyester left participants feeling that the two development processes were similar enough to classify NatureWorks™ as a synthetic. Some participants initially felt that NatureWorks™ might be a natural or "natural synthetic" fiber, due to its origin from agricultural crops. At the conclusion of this discussion, however, all participants concluded that NatureWorks™ starts natural, but ends as a synthetic fiber.

Fiber-Benefit Association

A list of fiber attributes was provided to participants, who were asked to identify the types of fibers they generally associated with each attribute. The listed attributes included:

- Easy Care
- Quick Drying
- Comfortable
- Resilient
- Better for the Environment
- Good Moisture Absorption
- Wicks Away Moisture
- Resistant to Ultra-Violet Light
- Flame Resistant

With regards to *easy care*, participants associated nylon, polyester and some cotton blends.

Quick drying was associated with nylon, polyester and silk.

Participants felt that cotton, silk and linen were fibers that best represented *comfort*.

When discussing fibers that were *resilient*, participants agreed rayon, acrylic, wool and polyester were the best match.

Reviewing fibers that were *better for the environment*, the majority identified wool and cotton – specifically when using limited or environmentally friendly dies.

All participants identified cotton as the fiber with *good moisture absorption*.

Wool, silk, cotton, polyester and spandex were identified as fibers that *wick away moisture*. There was debate with regards to cotton, with some indicating it was effective at absorbing moisture, not necessarily wicking away moisture.

Participants felt that nylon, polyester and most synthetics were *resistant to ultra-violet light*. Some, however, felt that any fiber – regardless of origin – would experience fading in color after excessive exposure to sunlight.

With regard to *flame resistance*, no particular fiber was singled out, although most agreed that all synthetics are dangerous and more prone to flammability than naturals.

Classification of NatureWorks™

Finally, participants were proposed with the idea that NatureWorks™ fibers had all of the previously listed attributes. Participants were asked if any of the existing fiber classifications conveyed what NatureWorks™ is and the scope of its attributes, and if so, what were they. Response to this question was different with each group. With the first group, the immediate answer was that NatureWorks™ did not fit into any existing fiber categories based on its attributes. Participants unanimously agreed that it warranted a category of its own in order to accurately reflect what it was. Sample responses:

➤ "No. there is no way you could fit it all in one (existing fiber category)."

➤ "If you go through the trouble, why not give it a new (category) name. You can't really change the definition of something."

➤ "...you'll miss some of the actual qualities, so you may be safer just to come up with another category."

➤ "No. It deserves it's own category."

➤ "If it does all of that (referring to full list of attributes), I would think it was a lie if it was called one of those (referring to list of existing fiber categories)."

In the second group, the classification question created a great deal of confusion. At first, participants tried to link NatureWorks™ with several options, including polyester, acrylic, cotton and linen. As they struggled to identify a category to assign, the group again reviewed what NatureWorks™ was and tried to get a stronger understanding of various elements, such as how it felt, what type of end applications there would be, if it would be used in blends and the development process. This led the group to revisit the previous "natural" versus "synthetic" debate and they tried to place NatureWorks™ into one of the existing synthetic fiber categories, since they had already concluded it was a synthetic fiber. As they continued to look at the existing synthetic categories, they were unable to confidently determine which one encompassed

all of the attributes of NatureWorks™. As a result, the group came to the conclusion that NatureWorks™ would be better off in its own, distinct category. Sample responses:

➤ "It is different."

➤ "Maybe needs to be its own category."

➤ "Why are you trying to put it into one of these categories?"

➤ "Be a pioneer. Strike out, be your own thing."

➤ "I'd create a new one (fiber category)."

➤ "Not much resemblance (to any existing fiber category)."

➤ "We want it to be its own person."

FINAL DISPOSITION

Overall, participants left the groups interested in NatureWorks™ and curious about its future uses, as they were particularly impressed that it contained all of the various attributes listed. Some expressed a special interest in the fact that NatureWorks™ fiber is flame resistant and felt that attribute was a definite marketing advantage – specifically with children's wear. Many found the most interesting aspect was the unique balance of NatureWorks™ – with its natural origin from corn and its outstanding list of attributes that are typically associated with synthetics.

In conclusion, both groups decided that due to the unique spectrum of attributes, it would be most appropriate to place NatureWorks™ in a fiber classification of it own, as none of the existing options would accurately reflect its complete scope.

APPENDIX

LKM/Cargill Dow
Fiber Classification Focus Groups:

Monday, January 22   6:00pm
Monday, January 22   8:00pm
Charlotte, N.C.

ASK TO SPEAK TO MALE/FEMALE HEAD-OF-HOUSEHOLD

RECRUIT 20 PER GROUP FOR 15 TO SHOW

Hello, I'm _____ with _____, an independent consumer research firm. We are not selling or promoting any product or service. We are conducting a research study regarding consumer products and would like to include your views. My questions will only take a couple of minutes.

1.   First, do you, or does any member of your household or immediate family, work for:

A market research company _____

An advertising agency or public relations firm _____

The media (TV/radio/newspapers/magazines) _____

A manufacturer, distributor, or retailer of textile fibers _____

[IF YES TO ANY >> TERMINATE]

2.   Who in your household does most of your clothes shopping? (By clothes shopping we mean all types; examples are – sports wear, casual clothes, formal attire)

Self _____

Shared/joint _____

Spouse or someone else _____

3.   Have you bought any of the following in the past 6 months? Sports Wear, casual clothes, intimate apparel, formal attire?

[IF NO TO ALL TERMINATE, IF YES TO ANY THEN CONTINUE]

4.   Into which of the following categories does your age fall?
[NEED GOOD MIX]

TERMINATE >> Under 21_____

21-29 _____

30-44 _____

45-60 _____

MAX. 1 OR 2 PER GROUP >> 61 and older _____

5.   What is the highest level of education you have completed?
[NEED GOOD MIX]

TERMINATE >> Less than high school graduate _____

High school graduate _____

Some college _____

College graduate _____

Post graduate studies or degree _____

6.   Do you have any children under the age of 17 living at home with you?
[NEED GOOD MIX]

Yes _____

No _____

7.   What is your current marital status? Are you ..... ?
[ATTEMPT MIX OF MARRIED AND S/D/W]

Married _____

Single _____

Divorced _____

Widowed _____

8.   Which of the following categories best describes your total, annual, household income?

[NEED GOOD MIX]

                                          TERMINATE >> Under $25,000 _____

                                                        $25,000 - $34,999 _____

                                                        $35,000 - $49,999 _____

                                                        $50,000 - $74,999 _____

                                                        $75,000 - $100,000 _____

                                                        Over $100,000 _____

➤   So that we can be sure that all backgrounds are represented in our study, please tell me your race or ethnic background. Are you ... ?

[NEED GOOD MARKET MIX >> RECRUIT 3-4 MINORITY PER GROUP]

                                                        Caucasian/white _____

                                                        African-American/black _____

                Hispanic _____

                                                        Asian _____

                (Specify) _____ Other _____

10.   [Record gender]   **[NEED GOOD MIX]**

                                                        Male _____

                                                        Female _____

11. Have you ever attended a focus group discussion? By that we mean an informal, round-table discussion, lead by a professional moderator in which you were asked your opinions regarding a product, a service or advertising?

MAX. 4 PER GROUP >> ASK A-C >> Yes _____

INVITE TO GROUP >> No _____

A. How many of these groups have you attended?

_____ **[MAX. 2 EVER]**

B. What was/were the topics discussed?

_____

[IF "PLASTICS" OR "TEXTILE FIBERS", TERMINATE]

C. How long ago was the last one of these groups you attended?

_____

[MUST BE AT LEAST 6 MONTHS AGO]

[INVITE TO GROUP]

Thank you for answering all of my questions. As I mentioned earlier, we are conducting a research study regarding consumer products and would like to hear your views. In order to hear them first-hand, we are conducting an informal, round-table discussion to be held on **[DATE]** at **[TIME]**. The discussion will last about 1-1.5 hours and will be both fun and informative. No one will attempt to sell you anything and no one will call on you as a result of your participation. As a token of our appreciation for your help in our research effort, you will receive a **[$50]** cash honorarium at the time of

the session. This is an important research effort and we hope that you will be part of it. We can only invite about 15 people to take part. Can we schedule your attendance?

[If yes, read .....]   If you need glasses for reading or for watching TV, please be sure to bring them with you to the group.

[Record Group]

Group I   6:00 p.m.   _____

Group II   8:00 p.m.   _____

[Get]

NAME: _____

ADDRESS: _____

CITY: _____

ZIP CODE: _____

PHONE: (DAY)   _____

             (EVE)   _____

             (FAX)   _____

             (EMAIL)   _____

Interviewer: _____

FOCUS GROUP DISCUSSION GUIDE

I.   **Introduction**

➤   Purpose: to discuss your feelings about fiber classifications with clothing and get your input as far as classifying a new fiber.

➤   Disclosure

-       Mirror

-       Audio and Videotaping

➤   Ground rules

-       Talk one at a time.

-       Everyone participate, no right or wrong answers.

-       Moderator has no vested interest.

➤   Participants

-       Name

-       Occupation, family

II. General Discussion: Classification of Textile Fibers

A. Warm-up question: When you think of "clothing fiber," what comes to mind? What types of fibers are there? How are they used? Which do you prefer?

B. Federal law requires that textile fibers that are used in wearing apparel and household items be identified on a label.

➤ Do you look at those labels before purchasing such an item?

➤ How do these labels impact your purchasing decisions?

C. Moderator will explore the attributes that participants associate with different textile fibers that are commonly used in wearing apparel and household items. Participants will be presented with a list of fiber types and asked to discuss what their perceptions are. List includes:

➤ Wool

➤ Nylon

➤ Cotton

➤ Polyester

➤ Silk

➤ Rayon

➤ Linen

➤ Spandex

➤ Acrylic

D. Of the fibers that we just discussed, which do you associate with being "natural" and which do you associate with being "synthetic?" If you don't know or have no opinion, just tell us that – probe why:

➤ What are some of the differences you've experienced with "natural" versus "synthetic" fibers?

➤ How important is the "natural" versus "synthetic" fiber distinction to you when you are making a purchase decision for an apparel or household item? Probe answers:

III. NatureWorks™ Classification

A. Moderator will explain the concept behind NatureWorks™ fiber – fiber made from agricultural crop such as corn – and ask participants to classify it as "natural," "synthetic" or other. Probe.

B. Moderator will present a list of various fiber benefits to the group. Participants will be asked to identify which types of fiber they associate with each benefit. Listed benefits include:

- Easy Care

- Quick Drying

- Comfortable

- Resilient

- Better For The Environment

- Good Moisture Absorption

- Wicks Away Moisture

- Resistant To Ultra-Violet Light

- Flame Resistant

C. Moderator will explain to participants that NatureWorks™ fiber has all of the attributes contained in the provided list. Participants will be asked if any of the existing fiber classifications discussed convey what NatureWorks™ is. Probe.

Wrap up. Any additional comments or reactions?
Thank you for coming.