

Technology Request

Title:

Reduce or Eliminate the Need for Ironing (Ref: 09 US 87GA 3FO6)

Abstract:

A large US company is looking for liquid formulations that reduce or eliminate wrinkles from fabrics during laundering and dramatically reduce the need to iron. They are interested in licensing, product acquisition, contract research, proof of concept leading to scale up to manufacturing, joint development and supplier agreement.

Description:

Consumers perceive ironing of garments and bedding to remove wrinkles as time consuming, tedious, and labor intensive. While they desire wrinkle-free garment appearance, they would prefer to achieve this result in less time, with greater ease, and with less energy use.

Existing fabric conditioners provide limited benefit to easier ironing and wrinkle reduction. Further, their performance varies with fabric type.

Possible approaches might include, but are not limited to:

- Electrical resistance.
- Differential adsorption.
- Differential reflectivity of catalyst surface.
- Direct ozone sensing devices.
- Differential ozone sensing devices.
- Sensing unique ozone odor.
- Other novel approaches.

Various anti-wrinkle ingredients include cationic and non-ionic silicones, starches, carboxylated polyethylene, glycols, and poly-saccharides. Issues relating to implementation of these ingredients include concentration, delivery, compatibility with other active ingredients, and cost.

The company seeks novel anti-wrinkle formulations that overcome formulation issues and improve consumer satisfaction.

Possible approaches might include, but are not limited to:

- Additive that prevents wrinkles in fabric.
- Surface coatings.
- Ingredients that prevent breakage of inter-fiber bonds.
- Ingredients or methods that aid aqueous delivery of actives.

The following approaches are not of interest:

- Formulations that use fluorocarbons.
- Ingredients with significant environmental / regulatory hurdles.
- Approaches that are not part of the normal laundry cycle.

Technical Specifications / Specific technical requirements of the request

The successful technology will:

- Reduce wrinkling by at least 50% with minimal increase in substrate stiffness.
- Ideal result is significantly fewer items to iron.
- Become active during conventional laundering steps.
- Wash by hand or in automatic washer.
- Rinse.
- Dry on clothes line or in heated drier.

- Ideally prevent formation of wrinkles during garment storage.
- Adhere to and be effective on fabrics including, but not limited to: cotton, polyester, nylon, denim, and blends thereof.
- Deliver active ingredients to fabric at = 0.5% of fabric mass treated.
- Use active ingredients that are compatible with these product formulation conditions:
 - Aqueous solutions comprising cationic quaternary surfactants at 4-18 wt%
 - pH range 2.5 to 3
- Use ingredients with acceptable toxicity profile:
 - Safe for use and handling by consumer.
 - Non-allergenic, non-toxic.
 - Preferably be listed on Europe's EINECS1 and U.S.EPA's TSCA2 lists.

List of Keywords

Technology

- Coatings
- Drying
- Advanced Textile Materials
- Cleaning Technology
- Special chemicals, intermediates

Market

Further Information (Technical Details Concerning the Profile)

The respondent should start by submitting a written response briefly describing the technical approach and providing information on technology performance, background, and description of the responding team and its related experience. The response will be evaluated according to the following criteria: - Overall scientific and technical merit of the proposed approach. - Approach to proof of concept and performance. - Potential for proprietary position (i.e. novel or protectable technology). - Economic potential of the concept. - The respondent's capabilities and related experience. - Realism of the proposed plan and cost estimates. • High-level description of proposed approach including: - Clear objectives and activity. - Method for assessing wrinkle reduction. - Applicable fabric types. - Technology maturity (concept, preliminary data, trials in progress, ready to commercialize, commercialized). - Pathway and estimate timeline to commercial scale. • Availability of technical data, safety, and regulatory status. • Intellectual property status—is technology patented? (provide patent reference if available). • Estimated ingredient cost. • Overview of respondent organization.

Collaboration Type

- License Agreement
- Joint further development
- Testing of new applications
- Adaptation to specific needs
- Absolutely novel process

Comments

Responses from small to large companies, academic researchers, other research institutes, consultants, entrepreneurs or inventors are welcome. The technology sought may either be ready for testing and transfer to commercial use or require further development.

Phase 1 – Proof of concept

- Company evaluation of wrinkle elimination at laboratory scale or under controlled laundering

conditions with typical household equipment
Phase 2 – Feasibility, safety, and regulatory assessment
Phase 3 – Scale up, commercialization.

CRITERIA FOR MOVING FROM PHASE 1 TO PHASE 2

Sponsor will consider for advancement technology that minimizes or eliminates wrinkles in fabrics with acceptable cost, ease of use, and consumer safety.

***Contact Details**

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