A process for the preparation of pre-moistened antimicrobial towels is disclosed.

6 Claims, 2 Drawing Figures
PROCESS FOR PREPARING PRE-MOISTENED ANTIMICROBIAL TOWELS

BACKGROUND OF THE INVENTION

This invention relates to a novel process for preparing pre-moistened antimicrobial towels useful for sanitary purposes, e.g., in hemorrhoidal conditions, feminine hygiene, first aid, diaper change cleanups and similar uses.

Previously, packages of premoistened towels were prepared by placing a stack of towels into a container, saturating the towels with a solution containing an antimicrobial agent, placing a cover on the container and heat sealing a top on the container to completely seal the package. However, this method is subject to chromatographic effects whereby the antimicrobial agent may tend to concentrate in portions of the stack without being uniformly dispersed through the stack and the individual towels.

SUMMARY OF THE INVENTION

It has now been found that premoistened antimicrobial towels can be made by a process which comprises the steps of coating paper or fabric sheet in strip form with a solution of antimicrobial agent in a volatile vehicle; permitting said vehicle to evaporate; transversely perforating said coated sheet into separable towel segments; longitudinally and transversely folding said perforated sheet; arranging said folded and perforated sheet in stack form in a moisture-impervious container; moistening said stack with aqueous liquid; and enclosing said moistened stack with a moisture-impervious cover seal on said container.

Such a process produces a moistened towel in which the antimicrobial agent is uniformly dispersed on each towel, thereby protecting the product from spoilage and providing a uniform concentration of antimicrobial agent for the intended use.

BRIEF DESCRIPTION OF THE DRAWING

The invention will be better understood by reference to the appended drawings, wherein

FIG. 1 is a schematic view in section of an apparatus for carrying out the coating step of the invention, and
FIG. 2 is a side elevation in partial section of a portion of the apparatus of FIG. 1.

DETAILED DESCRIPTION OF THE INVENTION

As shown in FIG. 1, a strip of paper or fabric 2 is drawn past pressure roll 4 in rolling contact with cylinder 6. Cylinder 6 is preferably a precision engraved applicator suitable for gravure printing. Roll 4 and cylinder 6 are rotated in the directions indicated by the arrows by a drive source not shown. Cylinder 6 is partially immersed in antimicrobial solution 8 contained in reservoir 10, and excess solution is removed by doctor blade 12. The etched or incised surface of cylinder 6 is thereby moistened or saturated with the antimicrobial solution, and brought into contact with the material to be coated as it travels through the nip created by roll 4 and cylinder 6. The speed at which the material passes through the rollers is not critical and may be set at any predetermined speed desired.

Roll 4 suitably has a resilient surface, e.g., of rubber, whereby strip 2 of paper or other sheet material is pressed into intimate contact with the antimicrobial solution carried by the surface of cylinder 6.
1. A process for preparing pre-moistened antimicrobial towels which comprises the steps of coating paper or fabric sheet in strip form with a solution of antimicrobial agent in a volatile vehicle; permitting said vehicle to evaporate; transversely perforating said coated sheet into separable towel segments; longitudinally and transversely folding said perforated sheet; arranging said folded and perforated sheet in stack form in a moisture-impervious container; moistening said stack with aqueous liquid; and enclosing said moistened stack with a moisture-impervious cover seal on said container.

2. The process of claim 1 wherein said coating is effected by gravure printing.

3. The process of claim 1 wherein said antimicrobial agent is a quaternary ammonium compound.

4. The process of claim 3 wherein said quaternary ammonium compound is benzalkonium chloride.

5. The process of claim 1 wherein said sheet is paper.

6. The process of claim 1 wherein said sheet is non-woven hemp.