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[54] **COMPOSITION FOR IMPARTING SOFTNESS AND SOIL RELEASE PROPERTIES TO FABRICS**

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[51] **Int. Cl.²** **D06M 15/24**

[58] **Field of Search** ..... 252/8.8, 8.9, 542, 547, 252/545; 117/139 C, 139 F; 260/231 CM

[56] **References Cited**

UNITED STATES PATENTS

2,994,665	8/1961	Reich et al.	252/529
3,360,470	12/1967	Wixon	252/528
3,523,088	8/1970	Dean et al.	252/DIG. 15
3,784,475	1/1974	Diehl	252/545

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[57] **ABSTRACT**

Fabric treating compositions comprising a fabric softener and a highly substituted methyl cellulose derivative confer softness and soil release properties to fabrics.

10 Claims, No Drawings

COMPOSITION FOR IMPARTING SOFTNESS AND SOIL RELEASE PROPERTIES TO FABRICS

BACKGROUND OF THE INVENTION

This invention relates to fabric treating compositions and to a method for simultaneously softening and imparting soil release properties to textile materials. More specifically, the compositions herein comprise mixtures of a fabric softener such as the common cationic ammonium softeners, and specific, highly substituted methyl cellulose soil release agents.

It is common practice to soften fabrics during the rinse cycle of a laundering operation. Fabric "softness" is an expression well-defined in the art and is usually understood to be that quality of the treated fabric whereby its handle or texture is smooth, pliable and fluffy to the touch. Various chemical compounds have long been known to possess the ability to soften fabrics during a laundering operation. The use of various surface modifying or coating agents to improve the cleaning properties of fabrics is also a well known technique. Much effort has been expended in designing various compounds capable of conferring soil release properties to fabrics, especially those woven from polyester fibers. The hydrophobic character of polyester fabrics makes their laundering (particularly as regards oily soil and oily stains) difficult, principally due to the low wettability of the polyester fibers. Since the inherent character of the fiber itself is hydrophobic, or oleophilic, once an oily soil or oily stain is deposited on the fabric it tends to be "attached" to the surface of the fiber. As a result, the oily soil or stain is difficult to remove in an aqueous laundering process.

When hydrophilic fabrics such as cotton are soiled by oily stains or oily soil, it is well-recognized that the oil is much more easily removed than in the case of hydrophobic polyester fabrics. This difference in oil removal characteristics is apparently caused by the greater affinity of cotton fabrics for water. Differences in hydrophilic/hydrophobic characteristics of cotton and polyester are due in part to the basic building blocks of the fibers themselves. That is, since polyester fibers are usually polymers of terephthalic acid and ethylene glycol, they have less affinity for water because there are fewer free hydrophilic groups, e.g., hydroxyl or carboxyl groups, where hydrogen bonding can occur. With cotton, which is a cellulosic material, the large number of hydrophilic groups provides compatibility with, and affinity for, water.

From a detergency standpoint, the most important difference between hydrophobic fabrics and hydrophilic fabrics is the tendency for oily soil to form easily removable droplets when present on a hydrophilic fabric and in contact with water. The mechanical action of washing and the action of synthetic detergents and builders normally used in the washing step of the laundering process removes such oil droplets from the fabrics. The droplet formation is in contrast to the situation which exists with polyester (hydrophobic) fibers. Water does not "wick" through hydrophobic fabrics and the oily soil or stain tends to be retained throughout the fabric, both because of the inherent hydrophobic character of the fabric and the lack of affinity of oily soil for water. Since all fabrics, and especially polyester and polyester-blend fabrics (e.g., polyester-cotton blends) are susceptible to oily staining and, once stained, are difficult to clean in an aqueous laundry bath, manufacturers of such fibers and fabrics have sought to increase their hydrophilic character to provide ease of laundering.

A truly superior fabric treating agent should provide a soft, desirable hand to the fabric, as well as a soil release finish. Moreover, an optimal fabric treating agent should also provide anti-static benefits. To many users, "softness" connotes the absence of static cling in the fabrics. Indeed, with fabrics such as nylon and polyester, many users appreciate an anti-static benefit at least as much as a softening benefit.

As might be expected, a wide variety of materials have been suggested for use as fabric and textile conditioning agents to provide one or more of the foregoing benefits. In many instances, such compositions are designed for use in processes carried out by the fiber or textile manufacturer; see Netherlands Application 65/09456; see also Garrett and Hartley, *J. Soc. Dyers and Colourists*, 82, 7, 252–7 (1967) and *Chem. Eng. News*, 44, 42–43 (Oct. 17, 1966). These references, as well as British Pat. Nos. 1,088,984 and 1,092,453, teach various ester-based soil release agents.

U.S. Pat. Nos. 3,668,000; 3,435,027; 2,663,989; 2,994,665; 3,523,088; South African Pat. No. 71/5149; British Pat. Nos. 1,171,877 and 1,045,197; the "CELLULOSE GUM CATALOG", Hercules Powder Company; and the "METHOCEL PRODUCT INFORMATION" data sheets, Dow Chemical Company, 1966, disclose the use of a wide variety of cellulose derivatives as fabric finishes.

U.S. Pat. No. 3,712,873 discloses textile treating compositions comprising a quaternary ammonium softening compound and various cellulose and/or modified starch derivatives in combination with a variety of adjunct materials.

The co-pending application of DesMarais, entitled "DETERGENT COMPOSITIONS HAVING IMPROVED SOIL RELEASE PROPERTIES", Ser. No. 462,700, filed Apr. 22, 1974, the disclosures of which are incorporated herein by reference, relates to detergent compositions containing highly substituted methyl cellulose derivatives of the type employed herein.

It is an object of the present invention to provide combined softening/soil release compositions which impart superior soil release benefits, especially to polyester fabrics.

It is another object herein to provide compositions for simultaneously imparting softness, anti-static benefits and soil release properties to fabrics in one-step, home laundry rinse bath.

The foregoing objects are obtained by combining a fabric softening/anti-static agent and a methyl cellulose soil release agent having a high degree of substitution (DS) in compositions of the type disclosed hereinafter.

SUMMARY OF THE INVENTION

The present invention encompasses fabric treating compositions comprising from about 1 to about 50% by weight of a combined fabric softening and anti-sattic agent, from about 0.05 to about 10% by weight of a methyl cellulose ether having a DS methyl of at least about 2.1 and a gel point less than about 50°C, the balance of the composition comprising a water dispersible carrier, especially liquid carriers such as water or water-alcohol mixtures.

DETAILED DESCRIPTION OF THE INVENTION

Fabric Softener

The fabric softener employed in the present invention comprises any of the cationic (including imidazolinium) compounds listed in U.S. Pat. No. 3,686,025, incorporated herein by reference. Such materials are well-known in the art and include, for example, the quaternary ammonium salts having at least one, preferably two, C_{10}–C_{20} fatty alkyl substituent groups; alkyl imidazolinium salts wherein at least one alkyl group contains a C_8–C_{25} carbon "chain"; the C_{12}–C_{20} alkyl pyridinium salts, and the like.

Preferred softeners herein include the cationic quaternary ammonium salts of the general formula $R^1R^2R^3R^4N^+$, X^-, wherein groups R^1, R^2, R^3 and R^4 are, for example, alkyl and X^- is an anion, e.g., halide, methylsulfate, and the like. Especially preferred softeners herein are those wherein R^1 and R^2 are each C_{12}–C_{20} fatty alkyl and R^3 and R^4 are each C_1–C_3 alkyl (or mixtures). The fatty alkyl groups can be mixed, i.e., the mixed C_{14}–C_{18} coconutalkyl and mixed C_{16}–C_{18} tallowalkyl quaternary compounds. Alkyl groups R^3 and R^4 are preferably methyl. Useful quaternary ammonium compounds herein are set forth in detail in U.S. Pat. No. 3,686,025.

Particularly useful quaternary ammonium softeners herein include ditallowalkyldimethylammonium chloride and dicoconutalkyldimethylammonium chloride.

Soil Release Agent

The soil release fabric finishing agents employed in the instant compositions are the methyl ethers of cellulose having a high degree of methyl substitution (DS). More specifically, the high DS methyl cellulose ethers herein can be characterized as cellulose having at least 2.1, preferably from about 2.1 to about 2.8, methyl groups , R′, on the hydroxyls of the anhydroglucose units of cellulose, i.e., a DS of from 2.1 to 2.8. It has now been discovered that these high DS methyl cellulose derivatives exhibit heretofore unrecognized advantages as oily soil release fabric finishes and are far superior to the lower DS methyl and the various hydroxyalkyl cellulosics known in the art.

The basic structure of the cellulose methyl ethers herein is as follows, wherein group R′ is methyl. In the formula the integer, *n*, typically averages from about 100 to about 10,000.

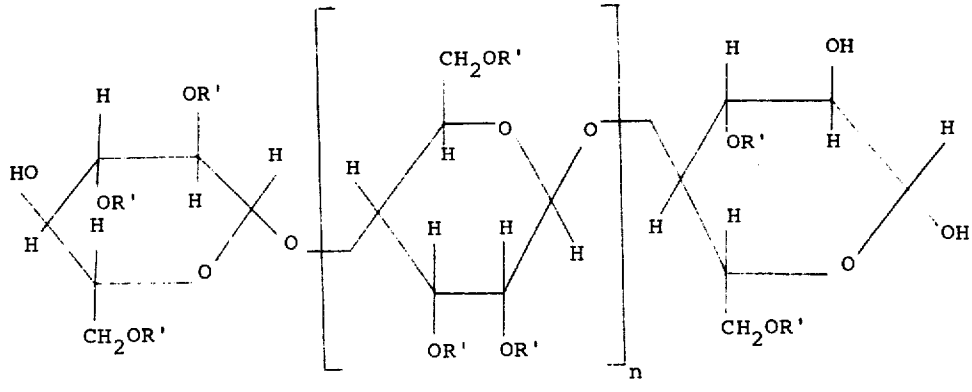
When preparing the methyl cellulose ether soil release agents employed in the present compositions the hydroxyl groups of the anhydroglucose units of cellulose are reacted with a methylating agent, thereby replacing the hydrogen of the hydroxyls with methyl. The number of substituent methyl groups can be designated by weight percent, or by the average number of methyl (i.e., as methoxyl) groups on the anhydroglucose units, i.e., the DS. If all three available positions on each anhydroglucose unit are substituted, the DS is designated three (3); if an average of two —OH's are substituted, the DS is designated two (2), etc.

Commercial processes for preparing methyl cellulose ethers involve, for example, simply combining methyl chloride with a cellulose feed stock of the type disclosed hereinafter under alkaline conditions. (It is to be understood that the methyl halides used to prepare the high DS methyl celluloses herein can contain minor amounts of other alkyl halides. The resulting cellulose ethers may, of course, contain very minor proportions of the corresponding alkyl groups. This is not important to the invention herein.) Such a process results in a DS below, 2, and most generally a DS of about 1.5. The prior art materials taught for use as fabric finishes are those having a low DS, i.e., a DS below 2, and usually below about 1.5. These lower DS materials are apparently specified for use as fabric finishes inasmuch as they are commercially available and have what was heretofore thought to be the requisite high water solubility necessary for sorption on fabric surfaces.

In contrast with the prior art teachings regarding the cellulosic fabric finishes, the soil release agents for use herein have a degree of methyl substitution in the range of from about 2.1 to about 2.8, preferably from about 2.2 to about 2.7, most preferably from about 2.3 to about 2.6.

Of course, the theoretical DS limit is 3.0, inasmuch as there are a maximum of 3 hydroxyl groups on each anhydroglucose unit in cellulose. Surprisingly, the high DS methyl cellulose ethers herein are sufficiently water soluble to provide good soil release fabric finishes when applied from an aqueous bath. Moreover, the high DS, methyl cellulose ethers exhibit their superior oily soil release properties when applied to fabrics from an aqueous rinse bath containing the above-disclosed softening agents.

The high DS methyl cellulose ethers herein can be prepared by the exhaustive methylation of cellulose using a methyl halide, preferably methyl chloride, and



caustic, preferably sodium hydroxide, in a pressure vessel in the manner well-known in the art for preparing the lower DS methyl cellulosics. However, the methylation procedure can be simply repeated and continued until the high DS materials are secured. The progress of the methylation reaction can be monitored by periodically sampling the reaction product and determining the degree of methoxylation in the manner more fully disclosed hereinafter.

It is to be understood that fabric treating compositions containing any of the high DS methyl cellulose materials disclosed herein provide excellent oily soil removal finishes compared with most low DS (i.e., DS below about 2) alkyl and hydroxyalkyl cellulosics known in the art. For truly superior performance in this regard, the most highly preferred high DS methyl cellulose ethers are those which are characterized by a gel point in an aqueous solution below about 50°C, preferably in a range of from 25° to about 48°C. While not intending to be limited by theory, it appears that the high DS methyl cellulosics having gel points below about 50°C, and preferably in the recited range, interact with, and deposit on, fabrics from an aqueous rinse bath in optimal fashion under household conditions. The gel point of the cellulose soil release ethers herein can be determined in the manner disclosed more fully hereinafter.

The highly preferred methyl cellulosics for use herein are characterized by their high DS and gel point as specified hereinabove, and can be further characterized by a solution viscosity above about 20 centipoise, more preferably above about 40 centipoise (cps). It is to be recognized that the solution viscosities of the cellulose ethers herein can vary over an extremely wide range, and are often as high as 70,000 (measured as a 2% wt. solution in water). Typical solution viscosities of the high DS methyl cellulose ethers range from about 90 to about 69,000, but cellulosics having viscosities falling outside this range are useful herein, provided they have the high DS methyl substitution and the specified gel points. The viscosity of the preferred cellulosic derivatives herein can be determined in the manner set forth in ASTM Standard D-2363, more fully described hereinafter.

While any of the high DS cellulose ethers herein are useful in granular compositions which can be prepared using solid, water-soluble carriers such as sodium sulfate, sodium carbonate, and the like, most fabric treating compositions are marketed as liquids. When such liquid compositions are being prepared, it is preferred to select ethers having viscosities in the lower end of the range in order to maintain optimal flow and pouring properties. Accordingly, when formulating liquid fabric treating compositions with the cellulosic soil release agents in the manner of the present invention, it is preferred to select cellulosics having a solution viscosity (as a 2% wt. aqueous solution) from about 20 cps to about 250 cps.

In addition to the foregoing parameters, the most highly preferred high DS methyl cellulosics can be further characterized as having a weight average degree of polymerization of greater than about 100, more preferably from about 100 to about 1000, most preferably from about 400 to about 800. The term "weight average degree of polymerization" used herein to define the most highly preferred high DS methyl cellulosics relates to the average number of anhydroglucose units in the cellulose polymer. The weight average degree of polymerization (DP_W) is related to such physical parameters of the cellulose polymer as solubility, gel point and viscosity. The DP_W of the high DS methyl cellulosics herein can be determined by measuring their solubility in cadoxen in the manner fully described in the copending application of DesMarais, cited hereinabove.

High DS methyl cellulose soil release agents of the type employed herein having the most preferred DP_W range can be prepared using cotton linters or wood-derived cellulose feedstock. It is well known that cotton-based cellulose material has a DP_W greatly in excess of 1000. However, the caustic treatment during methylation reduces the DP_W due to the action of the caustic on the cellulose polymers. Accordingly, cotton is a perfectly acceptable source of cellulose when preparing the high DS materials falling within the preferred DP_W ranges cited herein. Wood-derived cellulose is known to be comprised of cellulose polymers having a DP_W of about 2000, and below. Accordingly, wood-based cellulose can easily be converted to the high DS methyl materials having the preferred DP_W range recited hereinabove without the need for any additional degradation, since sufficient degraduation will naturally occur on contact with the caustic used in the methylation step.

The high DS methyl cellulose ethers employed in the instant compositions are characterized by various parameters in the manner described immediately below. Specific examples of optimal high DS methyl cellulose soil release agents employed herein are set forth in Table 1.

The DS (methyl) of the various cellulosic soil release agents employed herein can be determined in the manner set forth in "Methods in Carbohydrate Chemistry", III, Cellulose, R. L. Whistler, Ed., Academic Press, New York, 1963, Section 49, by I. Croon, at p. 277, et seq.

The gel point, or "cloud point", of the high DS methyl cellulose ether soil release agents employed herein is determined in the following manner. A 2% wt. aqueous solution of the cellulose ether being tested is used to determine the gel point. Ten cc. of the 2% solution are placed in a test tube and a thermometer is inserted into the solution. The test tube containing the solution and thermometer is immersed in a beaker of water on a hot plate. The water is heated at a rate of approximately 1°C/minute. During this heating, the solution of cellulose ether is stirred with the thermometer. The temperature is raised, slowly, until the solution just becomes cloudy (the cellulose ethers exhibit a negative temperature coefficient of solubility). The temperature at which the solution clouds is the gel point of the cellulose ether being tested.

The viscosity of the high DS methyl cellulose ethers is determined on the basis of a 2% wt. aqueous solution in the manner disclosed in ASTM Standard D-2363 for the determination of the apparent viscosity of hydroxypropyl methyl cellulose. Following the ASTM procedure, a 2% aqueous solution of the high DS methyl cellulose ether is determined in an Ubbelohde tube viscometer. The 2% solution is based on a dry mass of the product, i.e., the corrected mass for moisture found in the sample.

The DP_W of the high DS methyl cellulose ethers can be experimentally determined in cadoxen, which is a standard solvent for both substituted and unsubstituted cellulosics. In general terms, the efflux time of a solu-

tion of a cellulosic derivative in 1:1 cadoxen: water is measured in a Cannon-Ubbelohde dilution viscometer. The solution is diluted with additional solvent and the efflux time is again measured. The dilution step is repeated twice more, and the efflux times are again measured. The efflux time of the solvent is also determined in the same viscometer. From these data, the relative efflux time (or relative viscosity), the specific viscosity, and then the reduced viscosity are calculated. The reduced viscosity is plotted on linear graph paper vs. concentration of cellulose derivative in g/dl. A line is drawn through the points and extrapolated to zero concentration. The zero concentration intercept is defined as the intrinsic viscosity. The weight-average degree of polymerization, DP_W, can then be calculated by the Henley relationship as reported by W. J. Brown, *TAPPI*, 49, 367 (1966). Complete details of the procedure are set forth in the referenced application of DesMarais, above.

Typical examples of high DS methyl cellulose soil release agents of the type employed herein are set forth in Table 1. It is to be understood that these cellulosics are prepared by exhaustively methylating cellulose in caustic in the manner well-known in the art, and that this methylation procedure forms no part of the present invention. The cellulosics having relatively low viscosities (examples D and H) can be prepared by simply steeping the cellulose in the caustic bath to degrade the anhydroglucose "backbone" of the cellulose, in well-known fashion.

TABLE 1

Cellulose Ether	DS (Methyl)	DP_W	Viscosity (cp)	Gel Pt. (°C)
A	2.31	418	4,515	40
B	2.29	419	1,185	39
C	2.22	1,113	1,399	48
D	2.14	386	94	38
E	2.28	1,005	26,000	39
F	2.40	813	27,000	39
G	2.62	517	5,619	37
H	2.45	167	93	30

The following examples illustrate the fabric treating compositions of the present invention, but are not intended to be limiting thereof. As will be seen from the examples, the preferred compositions herein comprise from about 3% to about 15% by weight of a fabric softener/anti-static agent of the type disclosed hereinabove and at least about 0.05%, preferably from about 0.05 to about 10%, more preferably from about 0.25 to about 2.0%, by weight of the methyl cellulose ether. Higher concentrations of the components can be used, according to the desires of the formulator.

The compositions herein can be formulated as solids or liquids. When solid compositions are desired, a water-soluble, solid carrier material is conveniently used in combination with the active ingredients. Such carriers can be, for example, any of the water-soluble organic or inorganic salts commonly used as detergency builders, e.g., sodium citrate, sodium phosphate, sodium carbonate, and the like. Exhaustive listings of such materials are found in standard textbooks and in the patent literature; see, for example, U.S. Pat. No. 3,526,592, the disclosures of which are incorporated herein by reference. All such materials are compatible in the present compositions and are safe for use in contact with fabrics. Solid compositions are easily prepared by simply dry-blending the active ingredients with the solid carrier.

Liquid compositions can be prepared by mixing the softener and soil release cellulosic in a liquid carrier, e.g., water, mixtures of lower alcohols such as ethanol or isopropanol and water, and the like. When preparing liquid compositions, it is convenient to use the lower viscosity methyl cellulosics to maintain pourability.

The compositions herein can contain minor amounts (e.g., 0.1 to 5% by wt.) of additives such as perfumes, dyes, optical bleaches, and the like to provide the corresponding aesthetic and performance benefits.

EXAMPLE I

A liquid composition which softens and imparts a soil release finish to fabrics is as follows:

Ingredient	Weight %
Ditallowalkyldimethyl-ammonium chloride	7.5
Cellulose ether D*	1.5
Isopropyl alcohol	3.5
Perfume, dye and minors	1.0
Water	Balance

*Cellulose ether D from Table 1.

The composition of Example I is prepared by simply admixing the ingredients in the proportions shown until a homogeneous mixture is secured. The resulting composition has a viscosity ca. 150 cps, and is easily poured.

A 5 lb. load of mixed polyester and polyester/cotton blend fabrics is laundered with a commercial anionic detergent composition and spray-rinsed. The fabrics are thereafter immersed in ca. 8 gallons of fresh, 90°F water in the deep rinse cycle of a standard automatic washing machine. 2.0 Ounces of the composition of Example I are poured into the water, which is agitated to evenly distribute the composition. The fabrics are agitated gently for ca. 2 minutes, after which the water is drained from the washer drum. The fabrics are thereafter spun dry, and dried in a standard automatic clothes dryer.

Fabrics treated in the foregoing manner are soft to the touch and are substantially free from static cling.

Fabrics treated in the foregoing manner are spotted with dirty motor oil, which is allowed to "set" under ambient conditions. The fabrics are thereafter laundered in a commercial, fully built, anionic detergent composition under standard household laundering conditions, rinsed and dried. As a control, untreated fabrics and fabrics treated with a low (ca 1.5–1.7 avg.) degree of methyl substitution are similarly treated and laundered. The compositions herein provide substantially superior release of the dirty motor oil over untreated fabrics and fabrics treated using the low DS methyl substituted soil release agents.

In the foregoing composition soil release ether D from Table 1 is replaced by an equivalent amount of soil release ether H from Table 1 and equivalent results are secured.

In the foregoing composition, the ditallowalkyldimethylammonium chloride is replaced by an equivalent amount of ditallowalkyldimethylammonium bromide, ditallowalkyldimethylammonium iodide, ditallowalkyldimethylammonium fluoride, ditallowalkyldimethylammonium hydroxide, and ditallowalkyldime-

thylammonium methylsulfate, respectively, and equivalent results are secured.

In the foregoing composition the isopropyl alcohol is replaced by an equivalent amount of methyl alcohol, ethyl alcohol, n-propyl alcohol and n-butyl alcohol, respectively, and equivalent results are secured.

EXAMPLE II

A solid composition which softens and provides a soil release finish to fabrics is as follows:

Ingredient	Weight %
Ditallowalkyldimethyl-ammonium chloride	7.5
Cellulose ether A*	1.5
Perfume, dye and minors	1.0
Sodium carbonate	Balance

*Cellulose ether A from Table 1.

The composition of Example II is prepared by simply blending the ingredients in the proportions shown until a homogeneous mixture is secured. The resulting composition is in powder form, and is easily pourable.

Following the procedure set forth hereinabove for Example I, a 5 lb. load of mixed polyester and polyester/cotton blend fabrics are laundered and spray-rinsed. The fabrics are thereafter immersed in ca. 8 gallons of fresh, 90°F water in the deep rinse cycle of a standard automatic washing machine having 100 grams of the composition of Example II dissolved therein. The fabrics are agitated gently for ca. 5 minutes, after which the water is drained from the washer drum. The fabrics are thereafter spun dry and dried in a standard automatic clothes dryer.

The fabrics treated in the foregoing manner have a soft, desirable, anti-static hand. The fabrics treated in a manner of Example II and thereafter stained with hydrocarbon and vegetable oils exhibit a substantial soil release effect when subsequently laundered with a commercial, anionic detergent composition.

The composition of Example II is modified by replacing the ditallowalkyldimethylammonium chloride with an equivalent amount of dicoconutalkyldimethylammonium chloride, dicoconutalkyldimethylammonium methylsulfate, stearyldimethylammonium chloride, distearyldiethylammonium chloride, ditallowalkyldipropylammonium bromide, and cetyl pyridinium chloride, respectively, and equivalent results are secured.

The composition of Example II is modified by replacing cellulose ether A, from Table 1, with an equivalent amount of ethers B, C, D, E, F, G and H, from Table 1, respectively, and equivalent results are secured.

The foregoing compositions give good softening and superior soil release performance on fabrics treated therewith. It will be recognized that the compositions can readily be formulated to contain various adjunct materials, in addition to the active and the carrier. More particularly, various surfactants, used in non-deterging amounts (i.e., 0.05 –1.0% wt.), can be employed in the compositions to help disperse them throughout the rinse bath. Nonionic surfactants, especially the ethoxylated alcohols and ethoxylated phenols characterized by a hydrophilic lipophilic balance (HLB) in the range from about 7 to about 15, and mixtures of such materials, are preferred for this use. Exemplary nonionic surfactants for this purpose include the tri-, penta-, hepta- and nona-ethoxylated primary and secondary alcohols marketed under various tradenames, e.g., Tergitol 15-S-7, Tergitol 15-S-3, Tergitol 15-S-9, and the Dobanols.

What is claimed is:

1. A fabric treating composition comprising:

a. from about 1 to about 50% by weight of a combined fabric softening and anti-static agent;

b. from about 0.05 to about 10% by weight of a methyl cellulose ether having a DS methyl of at least about 2.1, a weight average degree of polymerization of greater than about 100, a solution viscosity above about 20 centipoise and a gel point less than about 50°C; and

c. the balance of the composition comprising a water-dispersible carrier.

2. A composition according to claim **1** wherein the fabric softening and anti-static agent is selected from the group consisting of quaternary ammonium salts containing at least one C_{10}–C_{20} fatty alkyl substituent group; alkyl imidazolinium salts wherein at least one alkyl group contains a C_8–C_{25} carbon chain; and C_{12}–C_{20} alkyl pyridinium salts.

3. A composition according to claim **2** wherein the quaternary ammonium salt is of the formula $R^1R^2R^3R^4N^+$, X^-, wherein R^1 and R^2 are each C_{12}–C_{20} fatty alkyl groups, or mixtures thereof, and R^3 and R^4 are each C_1–C_3 alkyl groups, or mixtures thereof, and wherein X is an anion.

4. A composition according to claim **3** wherein the quaternary ammonium salt is selected from ditallowalkyldimethylammonium chloride and dicoconutalkyldimethylammonium chloride.

5. A composition according to claim **1** wherein the methyl cellulose ether has a DS methyl of from about 2.1 to about 2.8.

6. A composition according to claim **5** wherein the DS methyl is 2.2 to 2.7.

7. A composition according to claim **1** comprising a quaternary ammonium salt selected from ditallowalkyldimethylammonium chloride and dicoconutalkylammonium chloride and a methyl cellulose ether characterized by a DS methyl from about 2.3 to about 2.6.

8. A composition according to claim **7** comprising from about 3 to about 15% by weight of the quaternary ammonium salt, from about 0.25 to about 2.0% by weight of the methyl cellulose ether, characterized by a viscosity in the range from about 20 cps to about 250 cps, the balance of the composition comprising a liquid carrier selected from water and mixtures of water and lower alcohols.

9. A composition according to claim **8** comprising, as an additional component, a non-deterging amount of a nonionic surfactant, or mixtures thereof.

10. A composition according to claim **9** wherein the surfactant is selected from ethoxylated alcohols and ethoxylated phenols characterized by a hydrophilic-lipophilic balance in the range of about 7 to about 15 or mixtures thereof.

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