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3,772,205

CLEANING AGENT FOR TEXTILES

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8 Claims

ABSTRACT OF THE DISCLOSURE

A cleaning formula is presented which is suitable as a pre-spotter, spray-spotter or a combined spotter and dry cleaning agent depending upon its concentration. The concentrated pre-spotter consists of 2 parts of a charged type dry cleaning detergent, 1 part of a paint remover mixture and 1 part water. As a spray spotter the formula is diluted up to 20:1 with water. It can also be mixed with other stain removers to increase their effectiveness.

BACKGROUND OF THE INVENTION

This invention relates to means for cleaning textiles and particularly to improved cleaning and spotting compositions for cleaning articles of clothing and the like.

A fairly detailed background of the prior art relating to spot removers, specialized cleaning formulation for special stains, and generalized dry cleaning compositions can be found with reference to U.S. Pat. Nos.: 2,904,514; 3,030,172; 3,091,508; 3,124,537; and 3,433,746.

U.S. Patent No. 2,904,514 teaches compositions for the removal of oil, paint or pigment stains. It teaches that the use of cleaning gasoline or chlorinated hydrocarbons is unsatisfactory by themselves but improved stain removal is achieved by the addition of about 2% of a tertiary orthophosphoric acid ester.

In U.S. Pat. 3,124,537 it is pointed out that about 90% of the stains which cleaning establishments are called upon to remove are of unknown origin and that certain spots are set by certain kinds of cleaning fluids. This points out the need for a cleaning composition which will remove or aid in the removal of a great variety of stains without causing any stains to be set thereby. The spot remover disclosed therein consists of a mixture of amyl acetate and a lacquer thinner consisting of 66% toluene, 14% ethyl acetate, 15% butyl acetate and 5% butyl alcohol (in weight percent) together with sulphonated castor oil and a penetrating agent such as pyridine.

The other patents mentioned above deal with dry cleaning compositions rather than spot removers. According to these patents, dry cleaning compositions comprise a mixture of a dry cleaning solvent such as volatile hydrocarbons, or chlorinated hydrocarbons such as gasoline, benzene, naphtha, Stoddard solvents, carbon tetrachloride, perchlorethylene and trichlorethylene; and a soap such as sodium salts of fatty acids, fatty acid esters or a detergent such as an allyl or aryl sulfonate. The soap is taught to be present in amounts from 1-10 weight percent of the solvent in a cleaning composition and up to equal weight parts in a spotting composition while the detergent is generally present in about half the concentration of the soap. These patents also teach the inclusion of a controlled amount of water or moisture in a range of from 1 to 5 weight percent and state that an excess of water is detrimental.

The cleaning composition of this invention is a multipurpose composition which in concentrated form is suitable as a pre-spotter or may be diluted up to 20:1 for use as a spray spotter or may be combined with other cleaning compositions to improve and enhance their action.

Another advantage of the cleaning composition of this invention is that while it is effective in removing or aiding in the removal of about 95% of the stains generally

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encountered by dry cleaners and aids in lightening some of the remaining stains from dry cleanable fabrics, yet it is suitable for use with any fabric, no matter how delicate, and will not fade or otherwise attack any color. Still another advantage is that it can be used in combination with a steam gun. Use of the novel composition results in decreased cleaning costs for both the chemical composition per se as well as a decrease in the cost due to a greater efficiency and speed in the dry cleaning process. For example, less detergent and less solvent is needed as compared with conventional formulations, less solvent distillation is required for reclaiming the solvents and the cleaning process is generally faster.

SUMMARY OF THE INVENTION

A concentrated cleaning composition which will not separate and is capable of being diluted up to 20:1 with water for use as a spray cleaner consists of 2 parts by volume of a dry cleaning detergent, 1 part by volume of an oily type paint remover and 1 part by volume of water.

DETAILED DESCRIPTION OF THE INVENTION

A typical concentrated solution which is suitable as a pre-spotting solution to remove or aid in the removal of paint, ink, dye, lipstick, road tar and road oil, grease, rouge, makeup, perspiration, salad oils, shoe polish, grass, tannin, mustard, catsup, coffee, tea, beer, liquor, dirt, blood and other stains consists of: 2 parts by volume of a dry cleaning detergent such as one composed of 45% by weight of amine sulfonate suspended in a solvent such as in 50% by weight Stoddard solvent and including 1% of an optical brightener, 1% of an anti-static agent and 3% water; 1 part by volume of a commercial paint, oil and grease remover such as perchlorethylene or a mixture of amyl acetate, toluene, butyl Cellosolve, 1,1,1-trichlorethylene, a fatty acid salt or ester (e.g. an oleate soap), a glyceride based oil and cyclohexane; and 1 part by volume of water. Butyl Cellosolve is the commercial name for the monobutyl ether of ethylene glycol.

The aforementioned formula may be used together with a steam gun and in some cases it may be used in combination with other chemicals to remove or break up stains. For example, for heavy, large paint stains, first the area is saturated with pure paint remover, the fabric is allowed to set for a few minutes and then the novel cleaning formula is applied to the stain. The novel formula adds more penetrating and lubricating power thereby breaking up the stain more quickly. The same procedure may be used to remove an ink stain. For heavy glue stains it is preferred to first saturate the stained area with a glue remover such as amyl acetate or glutonin, followed by the application of the novel concentrated formulation and finally dry cleaning. Large blood stains may be removed by first applying a protein removing formulation or ammonia water followed by application of the novel concentrated formula from a squeeze bottle and brushing or tapping the stained area.

The concentrated formula can also be mixed 1:1 with any commercial volatile dry spotter such as amyl acetate, glutonin, Picrin, Puro, or Eccoform to give them more penetrating and lubricating power and to double their life and efficiency. A 1:1 mixture with commercial paint removers will also increase their efficiency.

The concentrated formula can be diluted from 10:1 to 20:1 by volume with water to make an inexpensive spray spotter. The spray spotter can be used on any dry cleanable fabric that can withstand moisture, such as, wools, cottons, corduroy, imitation velvets, imitation furs, piles, and many others. The spray spotter is particularly useful to clean dirty hemlines, soil, vomit, beer, tea, coffee, liquor and soda stains. It is preferably used by spraying the spray spotter on the fabric, applying steam and hang-

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ing the fabric to dry, further dry cleaning is generally not necessary.

It should be noted that the novel concentrated cleaning formula is a clear fluid which will not separate and which is effective in the removal of both acid and alkali type strains.

The novel concentrated cleaning formula is also useable as an emulsifier for dry cleaning plants that do batch cleaning. For this purpose, 1 part by volume of the concentrated formula is mixed with from 15-20 parts charged solvent and 15-20 parts water. One ounce of 26% ammonia is added per gallon of solution. Use of the concentrated formula as part of the dry cleaning composition enables the composition to clean more clothes per drum of solvent. Also, a cheaper quality detergent could be used to achieve the same degree of cleaning when the novel cleaning formula was included in the cleaning composition.

It should be pointed out that while the individual ingredients of the novel cleaning formulations are old, they have never been combined in the proportions as taught herein. For example, the novel concentrated cleaning formulation contains at least twice more detergent and more water than found in prior art cleaning formulas. The novel formulation has the added advantages of providing a single solution which cleans or aids in cleaning types of stains than prior art cleaning solution and cleans stains as well as or better than prior art cleaning solutions. In addition, because of the high water content of the novel solution, his solution is significantly less expensive than prior art solutions and because of its cleaning efficiency, its use as taught herein ultimately saves operating time during the cleaning operation as compared with prior art dry cleaning compositions.

What I claim is:

1. A concentrated textile dry cleaning composition useful as a pre-spotter consists essentially of two parts by volume of a dry cleaning detergent wherein said detergent comprises about 45 weight percent of an amine sulfonate suspended in a dry cleaning solvent, one part by volume of paint, oil and grease remover selected from perchloroethylene and a mixture of amyl acetate, toluene, monobutyl ether of ethylene glycol, trichloroethylene, a soap, a glyceride based oil and cyclohexane and one part by volume of water, said solution being stable in that it does not separate.

2. The cleaning composition of claim 1 additionally

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containing 1% of an antistatic agent and 1% of an optical brightener and wherein said paint remover is perchloroethylene.

3. A cleaning agent useful as a spray spotter consists of the concentrated dry cleaning composition recited in claim 1 diluted from 10:1 to 20:1 with water.

4. The concentrated dry cleaning composition recited in claim 1 mixed in a 1:1 volume ratio with a volatile dry spotter agent.

5. The concentrated dry cleaning composition recited in claim 1 mixed in a 1:1 volume ratio with a paint remover composition.

6. The concentrated dry cleaning composition recited in claim 1 used as an emulsifier in a mixture consisting of 1 part by volume of said concentrated composition with from 15-20 parts by volume of a charged dry cleaning solvent, 15-20 parts by volume water and 1 ounce per gallon of said mixture of 26% ammonia.

7. A method for removing heavy paint stains and ink stains from fabrics consisting of the steps of first saturating the stained area with a paint remover composition, allowing said paint remover composition to set for several minutes and then applying a concentrated pre-spotter consisting of 2 volume parts dry cleaning detergent, 1 volume part paint remover and 1 volume part water to said stained area.

8. A method of spray cleaning a fabric comprising the steps of spraying a spray spotter as recited in claim 5 on the fabric applying steam to the sprayed fabric and hanging the fabric to dry.

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