

1

3,647,700

 K_2ZrF_6

Walt Phillips, Newark, N.J., assignor to Commodity Improvements Inc., New York, N.Y.

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,894

Int. Cl. C11d 9/10

U.S. Cl. 252—89

2 Claims

ABSTRACT OF THE DISCLOSURE

Compositions containing and method of using K_2ZrF_6 . The compositions described herein include detergents, toothpastes, deodorants, facial creams, hair products and storage battery fluids.

FIELD OF INVENTION

This invention relates to additives for use in steam irons and ironing in place of water in saturated solution. Further use for this additive includes use in toothpaste, mouthwashes, deodorants, shaving creams, skin creams, hair lotions and shampoos.

This additive is also used in soaps, detergents and their compositions, e.g. sodium sulfate, phosphates, other chemicals, bleaches, paper and paper products, industrial deodorants, polishes, batteries, oven and other cleaners, carpet shampoos, and especially improving properties of above products and their utilization in respect to one or more of the advantages of cleaning performance, anti-static properties, soil resistancy and reduction of deposits.

Specifically, the invention concerns new cleaning agents, thereby improving performance of the aforementioned products and chemicals.

It increases electrical resistance by 50%, thus improving input, output and spark. It has corrosion and sulfation resistance, and the life of the battery is increased.

DESCRIPTION OF PRIOR ART

A considerable variety of substances have been used in detergents, including sodium sulfate, phosphates, optical brightness and many others having certain limitations. Whereas certain of above materials and mixtures of them have been found highly effective in respect to cleansing properties, the disadvantage as regards to residual deposits have remained.

A need has arisen to prevent static and odor in nylon, wool and blends. An inexpensive addition of a metallo-organic compound has been found advantageous in this connection.

SUMMARY OF INVENTION

To the foregoing, and other ends, it has been discovered that a certain metallo organic compound may be used to improve laundry additives and other chemicals as aforementioned. Cleansing properties are desirable, such as achieving the desired advantages of cleaning, brightness, softness and ease of operation. Reduction of unwanted dirt at low cost is obtained.

In a more specific sense, it has been found that potassium hexafluorozirconate provides a remarkable effective additive for detergents and other aforementioned products. This additive exhibits improvements with respect to all additives discussed. In detergency, deflocculations, and in dispersions, dye and bleach assistants, K_2ZrF_6 is indispensable.

Relative small amounts of the chemical are used. The recommended amount varies. The effect is noteworthy. As for example, 0.1% is used for the finished detergent, soap, or creams, or as a 1 to 2% saturated solution with or without water in place of water. for use in steam irons.

2

As a hairdressing, the 1% saturated solution is effective. The same applies when used in 1% saturated solution in place of furniture polish. While in special aspects the invention is directed to use in detergents and soaps, as well as other aforementioned uses, the additive is also conceived as an advantage and utility in many other household and industrial products. The latter has reference to elimination of odor caused by waste, water and vapor. A presently preferred example of an additive is a composition for use in commercial and consumer detergents, soaps, cleaners, shampoos, dishwashing compounds, toothpastes, polishes, mouthwashes, shaving creams, hair products, detergent composition, e.g., sodium sulfate and others; batteries and the like, all consisting essentially of potassium hexafluorozirconate (K_2ZrF_6) and above mentioned products.

K_2ZrF_6 has tanning action and, therefore, it is a desirable anti-perspirant.

The recommended quantity of K_2ZrF_6 in detergents is 0.1%. If compounds are used, such as sodium sulfate and others, the percentage added depends entirely upon the percentage of sodium sulfate present in detergents. The same applies to soaps and other products. A saturated solution of 1% made with hot water, is used in place of water in the steam iron for solubility.

K_2ZrF_6 may be used in all products in saturated solutions, an example being detergents, soaps, creams or others, containing the additive which has been incorporated in the above specific compositions, in amounts from 0.05% to 0.3% by weight. Coincidence shows that excellent results are obtained with quantities of 0.1% and by the use of the 1% saturated solution. 25% for the purpose of optimum solubility is recommended. Smaller quantities, even as low as 5%, may be used with significant effects, while larger quantities up to 50% may be appropriate under desired circumstances.

RESULTS

The use of the additive in detergents, soaps, and other aforementioned products, have demonstrated anti-static properties, soil resistance, and increased "hand" to fabrics. In the saturated solution of 1%, hair has more body and manageability. In each instance performance was good and desirable. It was observed in a number of laundering and ironing tests that the fabric was cleaner and easier to iron.

With the use of standard oven cleaners, pre-heating of ovens is requisite. Addition of K_2ZrF_6 in varying quantities from 0.1% and more eliminates pre-heating procedure. Following the addition of additive, ovens proved cleaner and odor-free.

Examination of the ovens showed that redeposition of deposits was considerably less as compared with standard type oven cleaners.

The relative proportion of K_2ZrF_6 in the complete additive composition may vary, e.g. such that K_2ZrF_6 constitutes from 0.05% to 3%, although preferably no more than 0.1% of the total additive.

The tanning action of K_2ZrF_6 presents an effective addition to deodorants with or without presently used formulation (prior aqueous solution is recommended).

It is understood that the stated carrier, namely water or any other suitable media, cooperates effectively in achieving the desired results, not only in promoting solution and distribution but in effect the metal compound can be incorporated in the aforementioned products and scouring pads and media.

It has been added to paper and paper products, namely, toilet tissue, paper towels, etc., to eliminate odor of surrounding area. It is noteworthy that use brings cosmetic benefit.

3

In newsprint, kraft and other paper, where odor may be inherent or caused by printing ink, the additive, K_2ZrF_6 is desirable. This chemical may be used in paper production to eliminate odor from waste, water and vapor.

If one gram of said additive is added to each battery cell or two fluid ounces of a 1% saturated solution, corrosion and sulfation is substantially reduced, thus extending the life of the battery.

A closer shave and smoother skin results by adding K_2ZrF_6 to shaving products at the ratio of approximately 0.1%.

I claim:

1. A composition consisting essentially of a detergent selected from the group consisting of soap and sodium sulfate and from about 0.05 to 0.3 percent by weight of K_2ZrF_6 .

4

2. The composition of claim 1 wherein said detergent is a sodium sulfate composition.

References Cited

UNITED STATES PATENTS

2,413,365	12/1946	McCoy	252—142
3,025,189	3/1962	Arden	252—142
2,867,514	1/1959	Newhard, Jr., et al.	252—79.3
2,946,683	7/1960	Mellan et al.	252—143
3,248,332	4/1966	O'Connor	252—143

LEON D. ROSDOL, Primary Examiner

W. E. SCHULZ, Assistant Examiner

U.S. Cl. X.R.

8—94.25, 141, 142; 252—8.6, 8.57, 133