

The Cause of Unpleasant Odor During Use of Single-Component Hair Bleach Explained

To be Implemented in Hair Bleach Products for Men in Spring 2005

Mandom Corporation (Headquarters: Osaka; President Executive Officer: Motonobu Nishimura) has discovered, for the first time in this industry, that the odor-causing substance in single-component bleach is pyruvic acid and has developed a method to reduce this odor.

The company plans to announce the results of its research alongside its research partner, Takasago International Corporation, at the Seventh Asian Society of Cosmetic Scientists Conference held in Thailand (Bangkok) between March 7-9.

<What is Single-Component Hair Bleach?>

It would be no exaggeration to state that hair coloring has become part of our daily lives and the tools to do so have become essential style products. Hair bleach decolorizes hair by causing the oxidative degradation of melanin; it is a basic hair coloring product that lifts hair color. Hair bleach comes in various types—each of which has its own use.

The most common type of hair bleach is multi-component bleach, which requires that several compounds are mixed before use. This type of product can lift hair color in a short period of time.

In contrast, single-component hair bleach, which does not require mixing, lifts the hair in a gentler manner than multi-component bleach. As a result, it is easier the degree of decolorization; single-component bleach is a useful product for gradually lifting one's hair color. Thus, single-component hair bleach is a popular product among first-time users of hair bleach and individuals who do not wish to significantly decolorize their hair.

<Explanation of the Unpleasant Odor of Single-Component Bleach>

Despite its convenience, one drawback of single-component bleach is the unpleasant, sharp odor that is produced during its use. Because of this odor, many individuals choose not to use it.

We discovered that this odor is produced by the skin on users' hands (when they touch hair during application) and scalp coming into contact with the liquid product. The specific cause for this is a reaction between pyruvate—an important intermediary compound produced in biological metabolic pathways like the glycolysis system and the citric acid cycle—and hydrogen peroxide—the active ingredient in hair bleach products. This reaction produces acetic acid (vinegar) on the surface of the skin, which creates the sharp, unpleasant odor smelled by users.

<Fragrances Effective at Masking this Vinegar Odor>

After screening multiple fragrance compounds for their ability to mask this vinegar odor, we identified a few types of compounds as particularly effective.

The single-component hair bleach "Gatsby Honnori Bleach (Non-Medicinal Product)" that will go on sale February 8 2005, will contain a fragrance product composed of several of these compounds, including dihydromyrcenol, B-ionone, and α -methylbenzyl acetate. These compounds successfully control the unpleasant odor experienced during use of single-component bleaches. We have applied to patent this technology with our research partner, Takasago International Corporation.

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