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Research On The Application Of Organosilicon In Leather Chemical Materials

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Abstract: In recent years, China's leather industry has been developing rapidly, and leather chemical materials have also been widely used. To this end, effective analysis of leather chemical materials should be carried out to ensure that relevant personnel have a grasp of the molecular structure and practical use of leather chemical materials. As an important part of leather chemical materials, silicone plays an important role in leather chemical materials. This should strengthen the research of silicone and gradually improve its effect in leather chemical materials, so as to provide a positive message for the development of China's leather chemical industry.

Keyword: Organosilicon; Leather chemical materials; Apply

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Introduction: As a new type of industrial material, silicone has gained broad development space in China's chemical industry. It can not only meet the development needs of various industries in China, but also play an irreplaceable role in improving the level of leather processing and the quality of finished products. From a number of experimental studies, it is understood that the silicone used in leather chemical materials is mostly polysiloxane. Therefore, the application of silicone in leather chemical materials should be analyzed from the point of view of polysiloxane. While improving the production level of leather chemical materials, the advantages of polysiloxane are fully brought into play.

1. SILICONE LEATHER GREASE MATERIAL

As a key process in the leather production process, fatting can achieve the goal of increasing the oil content in leather, so that an oil film is formed on the leather surface. When improving the water resistance of the leather, the excellent performance of the

leather material is strengthened. The fatting materials used in leather processing include animal and vegetable oils and mineral oils. Due to the essential differences in the chemical molecular structure and actual effects of the two oils, it is necessary for relevant personnel to effectively analyze the two oil materials before leather fatening, and select appropriate high-quality materials according to the production of oil chemical materials and the effect of polysiloxane in leather processing. In order to ensure that leather chemical materials can reach the state of mutual attachment with specific grease materials.

In addition, in the process of leather fat will also be applied in the binding fat agent, this fat agent contains a certain organic silicon component, can avoid the phenomenon of fat migration in the leather processing process, greatly reduce the phenomenon of excessive aging in the later use of leather materials, thus giving leather a series of special properties.

At present, various leather processing industries in China will apply a series of organosilicon compounds as modified natural oils, and at the same time apply appropriate technical means to convert organosilicon into fatting materials. Under the influence of leather composition, the conversion mode of silicone grease material selected by the research and development department of new materials in the leather industry is very different.

Under such conditions, a comprehensive analysis should be carried out on the conversion process of organic grease materials formulated by relevant departments to clarify the change forms of polysiloxane under different grease conditions, so as to ensure that the softness and surface smoothness of semi-finished leather products can meet the corresponding standards after leather grease processing.

Although there are more research projects on silicon-containing grease in China, it is undeniable that there are not many large-scale varieties of silicon-containing grease agents, and multi-functional silicon-containing grease agents are difficult to meet the development needs of China's leather processing industry, which restricts the existing development situation of China's leather processing industry.

2. SILICONE MODIFIED LEATHER FINISHING MATERIAL

For leather processing, after the completion of the basic processing, it is also necessary to carry out the leather material coating work under the condition of ensuring the solid performance of the leather, and give the leather material better performance while improving the beauty of the leather material.

However, traditional finishing materials can not meet the requirements of leather processing and manufacturing, and even affect the inherent properties of leather materials. Therefore, we should do a good job in modifying leather finishing materials and transforming the inherent properties of leather finishing materials, so as to avoid the impact of finishing materials on leather decoration.

At present, when various leather processing industries in China modify finishing materials, silicone will be applied in it to improve the proportion of silicone in leather finishing materials, so that the effect of silicone in leather decoration will be fully brought into play. At present, there are mainly three kinds of silicone modified materials used in the leather coating process, namely, silicone modified acrylic resin leather coating materials, silicone modified polyurethane leather coating materials and silicone modified nitrocellulosic leather coating materials (see Table 1).

Comparison of common silicone modified leather finishing materials	Advantage	Disadvantage

Silicone modified acrylic resin leather finishing material	The adhesive force is strong, the film is transparent, soft and elastic, the coating is light resistant, dry and wet rub resistant, and aging resistant	Sticky in heat and brittle in cold, the coating cannot withstand climate changes in winter and summer
Silicone modified polyurethane leather finishing material	The film is smooth, friction-resistant and weather-resistant. The film is soft and elastic, and adheres firmly to the leather surface	Poor water resistance of the film; Soluble polyurethane film has poor permeability
Silicone modified nitrocellulose leather finishing material	The film is bright, resistant to friction, water and oil	Aging resistance, cold resistance and poor permeability of thin film

For silicone modified acrylic resin leather finishing materials, it can use organic silicon compounds cold resistance and heat resistance properties to improve the potential defects in acrylic resin materials, effectively control environmental factors on the internal molecular results of leather materials and other aspects of the impact.

In addition, there are more modification methods for silicone modified acrylic resin coating materials, mainly double-ended active siloxane copolymerization and single-ended active siloxane copolymerization, which requires the combination of leather processing process and other factors to select the appropriate acrylic resin coating material modification program, fully demonstrating the advantages of silicone acrylic resin leather coating materials.

For organic silicon modified polyurethane leather finishing materials, it mainly refers to the general term of binary or multiple isocyanate and binary or multiple hydroxyl compounds,

which contains the advantages of two compounds, and can effectively resist the impact of external factors on the comprehensive properties of polyurethane leather finishing materials.

However, the adhesion between silicone modified compounds and leather materials is relatively low, which should be combined with silicone and polyurethane to gradually strengthen the effect of leather coating materials.

For organosilicon modified nitrocellulose leather finishing materials, the main use of nitrocellulose, butyl acetate, acrylate and other chemical materials as the basic initiator, so that organosilicon and nitrocellulose fiber can achieve mutual fusion state. Improve the effect of coating materials in leather processing, improve the inherent defects of coating materials in leather processing, and strengthen the quality effect of leather materials while improving the aesthetics of leather materials.

There are some differences in the silicone modification level and finishing effect of these three materials. Therefore, before leather coating work, it is not only necessary to analyze the composition of the corresponding coating material, but also to perform a valid analysis of the modification effect of silicone in various coating materials. In addition, the synthesis methods of the above three finishing materials are very different, which requires effective analysis of leather finishing materials from the perspective of silicone modification, so that leather processing personnel have a good grasp of the processing process and other aspects of various silicone modified leather finishing materials.

If necessary, it can also improve the production and processing channels of silicone modified finishing materials under the conditions permitted by the leather industry management department. Gradually strengthen the processing and production efficiency of finishing materials to provide high-quality finishing materials for the post-processing decoration of leather materials, and give full play to the application value of organic silicon in the processing and production of leather finishing materials.

3. FUNCTIONAL SILICONE LEATHER ADDITIVES

Because the leather processing production process is more complex, there are likely to be some problems in the production of leather materials, which has a very serious impact on the production quality of leather chemical materials and the current development situation of China's leather industry. In order to improve this situation, it is necessary to apply a

series of functional silicone leather additives in the leather production process, optimize the leather processing process, and control the possibility of quality problems during leather processing.

From the perspective of leather production, the functional silicone leather additives used in leather production mainly include softener, feel agent and slip agent. These three leather auxiliaries can achieve the goal of leather semi-quality excellence, so that the leather produced by the relevant industry can meet the development needs of other related industries, in addition, most of the leather auxiliaries contain a large number of organic silicon components, which requires relevant personnel to analyze the processing mode and real effects of leather auxiliaries from the perspective of organic silicon.

Proportion of reinforced silicone in leather auxiliaries. This initiative can not only ensure the integration of various additives and leather processing raw materials, but also avoid the impact of external factors on leather processing production. Comprehensively improve the quality of leather processing production, highlight the development advantages of the leather processing industry, and meet the requirements of the steady development of China's leather chemical industry from a fundamental point of view.

EPILOGUE

In summary, it is understood that China's leather chemical enterprises have achieved high-speed development in today's society. In order to improve the inherent defects of leather chemical materials, polysiloxane can be applied in leather chemical materials to improve the molecular structure of leather chemical materials and reduce the output of harmful substances and other pollutants during leather processing.

In addition, the application of polysiloxane in the processing of leather chemical materials is also described from multiple perspectives. Strengthen the relevant personnel's awareness of silicone and leather chemical materials, gradually improve the production process of leather chemical materials, and give China's leather chemical industry the power of steady development.

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