LETTERS TO THE EDITOR

Shark fish oil stearin-based fatliquor

Shark liver oil is mainly used as nutritional oil for human consumption after cooling to separate mostly saturated glycerides which are called stearin. The stearin thus obtained can be used in stuffing of heavy leathers. With the present trend of utilising even heavy hides in making light leathers this mode of outlet for stearin is getting decreased; the stress on the production of light leathers resulted in increased demand for fatliquors. As the conventional fatliquors, namely, sulphated castor, neatsfoot, cod or sperm oils and sulphited cod or sperm oil are either not available in sufficient quantity or costly, alternate sources of oils for making fatliquors have been tried[1,2,3]. The possibility of making sulphated fatliquor from tallow, a solid fat, after modifying the same to make it polaric was reported;[3] shark fish oil stearin being mostly saturated fat, it was thought that a good sulphated fatliquor can likewise be prepared for use in lubrication of leathers.

Experimental

The shark fish oil stearin was made polaric by transesterification with a suitable polyol and then sulphated in the usual manner. The sulphated product was used in fatliquoring of chrome tanned goat skin. A pack of chrome tanned skins (10 Nos.—2.5% Cr_2O_3) neutralised to pH 5.5 was fatliquored with 4% of the product.

Results

The leathers fatliquored with the product were compared with the leathers fatliquored with sulphated sardine fish oil fatliquor. It was observed that the leathers fatliquored with the product has smooth, dry feel; the product can be used in fatliquoring of glace-kid type of leathers.

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Ready-to-use liquid glue

The suggestion to market liquid glue with the addition of suitable preservatives for ready use has been well received by the industry. Drying of glue, manufactured from hide fleshings and trimmings, has been a major problem of small scale glue manufacturers. To enhance the process of drying and to reduce putrefactive spoilage, it has been the practice of the trade to add large amounts of formaldehyde to the glue. Addition of formaldehyde denatures the glue and the end-product in most of the cases is of very poor jelly strength and very low viscosity. The conventional process of drying the liquid glue is also costly, laborious and time-consuming. Further, dissolution of this dried glue in water becomes a problem and very often results in the insolubility of glue. It was in this context that a suggestion was given to the small scale and cottage level manufacturers to manufacture ready-to-use liquid glue which may as such be marketed without resorting to drying.

In the method suggested, the glue extracted from hide fleshings and trimmings is brought to the desired consistency. After this, addition of certain preservatives has been suggested which will preserve the glue for a period of approximately three to four weeks.

This suggestion has been taken well by the glue manufacturers. The product has also been found to be acceptable to the match industries who are the main consumers of this product. It has also been found acceptable for use as an adhesive. Besides saving time for the soaking of the dry glue and fuel to dissolve the glue, an undenatured product of desired jelly strength and viscosity ready for use is made available to the consumer.

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Polymers & Their Role in Leather Science

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POLYMER science is one of the most active and promising fields in science, covering a multitude of topics from natural polymers that are of utmost importance for living systems to inorganic macromolecules. Recent years have seen a series of astonishing advances in the field of polymer science. The intensive activity in the field of polymer research, of course, has been a reflection of their widespread application in industry and domestic life. Synthetic polymers have assumed a significant role in man's economy in numerous forms, such as plastics, resins, rubbers, films, fibres, impregnants, surface coating materials, and finishing agents. The progress of an applied science, such as leather chemistry is, as a matter of course, dependent upon general advances of the fundamental sciences. The leather industry has been profoundly influenced by major discoveries in the field of polymers. Today it is very clear that many of the basic materials used by the leather industry are the result of research by polymer chemists. Collagen is also basically a high polymer composed of amino acids linked together by peptide bonds.

The literature on the role of polymers in leather science is obviously too vast to be covered in its entirety in this review. We shall draw attention here to specific areas in which substantial advances have been made. To keep the size of this article within reasonable bounds, we shall not go into the details of the preparation and physicc-chemical properties of the polymers and their constituents. Comprehensive coverage of these aspects has been made in a number of recent books[1-40], reviews[41-48] and symposia proceedings[49-51]. Our deliberate bias, throughout this review, will be towards the application of polymers in leather manufacture rather than towards the fundamental chemistry. Although a few surveys of a limited scope have appeared[52-62] in recent years, no comprehensive survey of the role of polymers in leather science has appeared. The primary purpose of summarizing many of the applications of polymers in leather manufacture is to demonstrate that polymers have

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