

The amber-colored liquid: a review on the color standards, methods of detection, issues and recommendations

ABSTRACT

For most natural or naturally derived liquid products, their colour reflects on their quality and occasionally affects customer preferences. To date, there are a few subjective and objective methods for colour measurement which are currently utilized by various industries. Researchers are also improving these methods and inventing new methods, as colour is proven to have the ability to provide various information on the condition and quality of the liquid. However, a review on the methods, especially for amber-coloured liquid, has not been conducted yet. This paper presents a comprehensive review on the subjective and objective methods for colour measurement of amber-coloured liquids. The pros and cons of the measurement methods, the effects of the colour on customer preferences, and the international industry standards on colour measurements are reviewed and discussed. In addition, this study elaborates on the issues and challenges related to the colour measurement techniques as well as recommendations for future research. This review demonstrates that the existing colour measurement technique can determine the colour according to the standards and colour scales. However, the efforts toward minimizing the complexity of the hardware while maximizing the signal processing through advanced computation are still lacking. Therefore, through this critical review, this review can hopefully intensify the efforts toward finding an optimized method or technique for colour measurement of liquids and thus expedite the development of a portable device that can measure colour accurately.

Keyword: Amber; Colour; Detection; Liquid; Colour measurement