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Influence of Vibration on Automotive Interior Decorations Volatile Formaldehyde

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Introduction

In recent years, with the human to live and life environment air pollution effects health awareness deep gradually and car widely available, people pay more and more attention to environment inside. Because people stranded in the car more and more time, the car air pollution problem increasingly prominent. Now automotive indoor pollution is mainly the car accessories of generation. The material for decorations research is generally the stationary state and not under the dynamic and car is generally operation when people is in it.

Car interior trim materials mainly include the following data: leather, synthetic leather, plastic foam, textiles, plastic products, etc [1]. Because the space is lesser, car general only has 2 ~ 3 m^3 space. Act the role of material even with a few volatile organic compounds, will release in the vehicle formed higher concentration, It have a serious effect on the human body. Therefore, narrow car space extremely easy by act the role of material the effect of contaminants. H.D. Zeng and Y. Xu from Tsinghua University, systematic and detailed detected the volatile organic compounds of the building materials, but their detection is carried out in the static [2-3]. This paper studies the influence of vibration on the decoration material volatile formaldehyde.

Test Theory

The indoor air quality detector respectively tests the car accessories volatile formaldehyde concentration under static and dynamic. The JX-3B vibration sensor calibration set sine signal generator, power amplifiers, standard sensor and vibration dynamic at a suit. It produces the standard vibration, acceleration speed or displacement signal through the sine excitation method. Combined with the air quality detector and the JX-3B vibration sensor calibration we measured car accessories volatile formaldehyde concentration under dynamic. Detection of formaldehyde is testing sample solution, absorption solution and the mixture of formaldehyde standard solution and absorption solution. According to the Eq.1 we get the results of formaldehyde.

Where calibration measured data is the mixture determination value which is formaldehyde standard solution and absorption solution; Blank measured data is the absorption of simple solution of measurements; Standard data is a national standard values in formaldehyde testing; Measured data is sampling solution of the assessment.