SILICONE SURFACTANTS FOR LOW CONTENT ALDEHYDE AND AROMATIC EMISSIONS PU FOAM

Introduction

Automotive market leading OEMs are pursuing a **reduction in emissio**n from their plastic components following the trend of customers worldwide looking for less emission-intensive environmental conditions.

Currently, it is a **requirement of the automotive industry** to reduce volatile organic compounds (VOCs).

VOC emissions - Study background

The range of **CONCENTROL STB PU-12XX** additives PF was released more than ten years ago to introduce phthalate free versions of the well stabilized **CONCENTROL STB PU-12XX** range of surfactants, maintaining their performance and recognized technical capabilities.
More recently and considering the needs found in the **Asia-Pacific economic** zone regarding emissions and odor, a new family of additives has been developed under the tradename **CONCENTROL STB PU-12XX PFJ.**

VOC analysis of the silicone surfactant

The new PFJ family offers **very low emissions for all substances** tested. **Especially with regard to aldehydes**, the values obtained are clearly better compared to comparative silicone surfactants.

In all cases, **propionaldehyde is the main source of aldehyde-type emissions**.

VOC and odor analysis of polyurethane foams

The results show that increasing the dose of surfactant also increases VOC emissions, **although the increase is not very high.**

In the particular case of foams obtained using the new STB PU-1259 PFJ stabiliser, **this can be explained by its low VOC contribution**.

Therefore even if this reference is used in higher dosages, **the final contribution to total VOC emissions is low**.

Conclusions

New stabilizers had been designed and they had been tested in commercial PU foams in order to fulfill the requirements found in some countries from the **Asia-Pacific** area, regarding **aldehyde, aromatics and odor components.**

Some of the new references of **CONCENTROL STB PU-12xx PFJ** offer an excellent overall performance and very low emission profile.

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