



CREDIT: GSC GROUP

VOC-free finishing

Volatile organic compounds and their emission are responsible for odour, such as the scent in perfumes or an air freshener. They are also responsible for attracting bees to plants or for playing a role in communication amongst animals. Of concern, however, are that they also influence air quality, not just environmentally but also within car interiors. Legislation, banning unhealthy VOCs, is driving down their usage in an effort to reduce CO₂. Over the years GSC Group has been driven by the goal of obtaining a zero VOC environment for both its portfolio and manufacturing methods. With their latest automotive range, the company, based in Arzignano, claims they are in touching distance of that goal.

We are constantly surrounded by emissions. Amongst them, VOCs are organic carbon compounds that will evaporate at room temperatures, or above and are therefore classified as volatile. These have a high vapour pressure, low boiling points and low water solubility. Many VOCs are manmade compounds that are consumed in chemical products such as solvents and have a wide and varied use in the production of many articles, including leather manufacturing. Due to local legislation, the regulation and definitions of VOCs can be very different. Overall, it is a subject of constant interest, periodically rising to the forefront of focus in individual countries. Often, they are also blamed for causing nauseous reactions in certain susceptible people or can affect their respiratory system. However, so far there is no proven link between VOC and odour, with some VOCs having no odour at all. It is an area that is and, we suspect, always will be under constant investigation. What exactly, with particular emphasis and interest for leather manufacture, the aldehydes are contributing to the unpleasant odour is unclear.

In finishing, particularly, one of the major issues has always been the flow out of the topcoat especially with polymeric dulling agents, where solvents had to assist the flow of the chemicals on the leather. If the chemicals do not flow into themselves before drying and film forming, it can result in the film being left with a haze or cloudiness that can be seen when looking across a dark coloured hide. With this in mind, GSC Group has made its automotive topcoats flow out uniformly, whilst eliminating most of the solvents. Automotive finishes that meet all global OEM specifications with less than 1% VOC and with any desired gloss level give a technical leather that appeals in terms of both aesthetics and performance.

One of the keys to this success is CRX A 100, a 100% solid Isocyanate dull crosslinker. This can be used in hotpot crosslinking, i.e., mixed prior to application, or with in-line systems, being mixed at the point of application and thereby eliminating pot life issues. It is designed to replace the current isocyanate crosslinkers in all automotive leather finishing formulations.

Syntal 3214	30% solid. High Wear
Syntal 45 Conc	55% solid. High Wear
Syntal 5336	55% solid. Stick Slip

To aid the achievement, GSC's development team has produced a range of BTX (benzene, toluene, and xylene) free silicones. Being VOC free, these water-based silicone emulsions are suited to the global market with a range that has various wear and haptic properties.

Combined with a range of easy to use polyurethane and acrylic resins, meeting the rigorous requirements of any OEM, from extreme high wear and flexing to severe solvent resistance, can be expected. At the same time, they are designed to maintain the natural aspect of the leather.

GSC Group has expanded its technical and commercial capabilities to cope with the future demands of the automotive leather sector. It is well placed to become an important automotive chemical supplier as well as achieving its goal of zero VOCs. 🌱