

Premium tanning agents for premium leather

The roots of **Voelpker Spezialprodukte** as a wax producer go back to 1900, but it was only in the 1970s that the company discovered more efficient technology and started using sodium dichromate as an oxidiser for the production of high-performance wax additives that are today mainly used as additives in engineering plastic production. With chrome sulphate as a by-product resulting from this production, Voelpker entered the leather market.

It is well known that animal skins have been used by humans for more than 400,000 years for clothing, footwear and furniture, and leather is arguably one of the first examples of recycling, where a secondary product from meat consumption was put to good use.

The vegetable tanning process started around 4000BCE, which extended the life of the skins, but in the mid 1800s CE chrome tanning was discovered. This reduced the time needed for tanning but also allowed softer and thinner articles to be produced.

Chrome quickly became the most widely used form of tanning and today accounts for more than 90% of all leather produced.

Various industries such as vitamin K, pharmaceuticals, pigments and waxes use sodium dichromate as an oxidising agent, producing products used in many other essential industries. A reacted chrome (III) liquor is obtained from these manufacturing processes as a by-product, which is then fully reduced with molasses or other organic reductants in further steps to form basic chrome sulphate.

It is sold mainly to the leather industry in liquid form or spray-dried to a powder, for tanning purposes. Approximately 40% of all chrome sulphate used in leather tanning comes via the organic reduction process, making it a significant raw material for the leather industry and part of the manufacturing process for other important industries too.

Chrome sulphate manufacture

Organic basic chrome sulphate is produced by final reduction of sodium dichromate from the hexavalent to trivalent state using reductants such as molasses. Reputable and quality certified chrome sulphate producers normally use more reductant



Liquid chrome sulphate offers economic advantages.

than required to ensure that no hexavalent chrome molecules remain, and that no theoretical risk of transfer exists in the event of accidental bad practices being followed in the tannery.

Voelpker chrome sulphate is analysed continuously each month through external laboratories such as FILK Germany to ensure that the high quality is maintained and the product complies with all international requirements.

As energy costs increase worldwide, the option to use basic chrome sulphate in liquid form also becomes increasingly attractive to many tanneries as gas or energy consumption for spray drying, and later dissolving, is reduced.

Using chrome in liquid form also reduces the amount of paper packaging, plastic shrink-wrapping and pallets, which has an environmental impact for those concerned with their carbon footprint.

Producers save energy by not having to spray-dry the material and the tannery saves energy in not having to redissolve the product.

Supply and demand

Liquid chrome sulphate is typically supplied in bulk road tankers but can also be supplied in smaller IBC tank containers, which are then pumped either into storage tanks for dosing or directly into the tanning drums. Liquid dosing also reduces physical effort and ensures accurate metering, and has a positive impact for health and safety on workers as dust generation is reduced.

As many tanneries and downstream consumers alike become more conscious of their carbon footprint and the CO₂ emissions in the total supply chain, the use of organic liquid chrome starts to become more important for reasons explained above and tanneries explore ways to handle chrome in this delivery form. ●

Voelpker Spezialprodukte, Germany, is a member of LWG and currently holds an Ecovadis Silver certification. Voelpker's chrome sulphate under the trademark Basochrom is certified by the PFI Institute Germany for the production of low pollutant leather (SG Sign).

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