

# DRYING SYSTEM BASED ON VANADIUM COMPLEX WITH COMPENSATING ANION OF P-TOLUENESULFONIC ACID



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## TECHNOLOGY

The technology created uses complex vanadium compounds, which serve as a new and environmentally acceptable drying agent for alkyd-based coatings. This drying agent is able to accelerate radical reactions responsible for cross-linking of the resin through a one-electron redox processes and thereby accelerate the drying of paint films.

## WHAT TECHNOLOGY SOLVES

Cobalt(II) salts of carboxylic acids are currently the most commercially successful driers. However, these substances have recently been classified by the European Chemicals Agency (EPA) in the group "CMR2-toxic for reproduction" and are currently being assessed for their toxic effects by the "Cobalt REACH" consortium. It may lead to a reclassification to "carcinogenic 1B" in the near future and to significant restriction of their use in industry. This situation leads manufacturers of coating materials to search for new non-toxic drying agents.

## ADVANTAGES OVER COMMERCIALY USED SICCATIVES

- Unlike cobalt compounds: non-toxic, higher activity (at roughly the same production costs, may be cheaper in the final comparison).
- Unlike iron-based driers: cheaper raw materials, easier synthesis.

## DEVELOPMENT PHASE

- Optimization of complex preparation, verification of identity and purity using standard analytical and spectroscopic methods, study of drying activity
- Determination of mechanical properties of coating films (drying time, relative hardness, appearance, chemical resistance, and adhesion).

## POTENCIAL CUSTOMERS

- Specialized manufacturers and sellers of driers,
- Companies engaged in global chemical distribution,
- Manufacturers of coating materials.

## COMMERCIALIZATION

- Sales of technology for complex synthesis and its use.
- Sale of the drier itself.

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Patent situation:

CZE patent application  
PCT patent application

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