Vanadium-based drier for solvent-borne alkyds

Development status

Phase 2

Feasibility study. There is a realistic design of the technology and the initial tests in the laboratory are leading to the specification of the technology requirements and its capabilities.

IP protection status

N/A

Partnering strategy

Collaboration

Institution

University of Pardubice

Challenge

Alkyd-based paints use cobalt compounds (e.g. cobalt 2-ethylhexanoate and cobalt neodecanoate) to accelerate drying and hardening processes. However, these compounds are suspected carcinogens, which may lead to legislative restrictions on their use in the paint industry in the near future. This situation motivates manufacturers of alkyd coatings to look for alternative technologies that are based on complex compounds of nontoxic transition metals.

Description

The technology describes the preparation of a vanadium complex compound (vanadyl dibutyl phosphate) and its use in solvent-borne and high-solid formulations of alkyd resins. Its main advantages are lower dosage than in the case of cobalt driers and better through-drying of paint films. This technology can also be used to accelerate the curing of various types of unsaturated polyester resins, used for the production of laminates, including new types of styrene-free formulations.

Commercial opportunity

The technology is suitable for manufacturers of alkyd paints and for manufacturers of unsaturated polyester resins.