



VLEI GENTHART
SINCE 1839

VLEI GENTHART® - drier 410

Cobalt alternative

The VLEI GENTHART®-drier 410 is a highly efficient COBALT alternative drier for urethane modified oils/alkyds and can also be effectively used with (sunflower) based long and medium alkyd lacquers.

PROPERTIES: VLEI GENTHART®-drier 410 can be efficiently applied in clear and brightly pigmented polyurethane-modified alkyds and in conventional long and medium oil alkyds, with tend to discolour. As compared to cobalt salts VLEI GENTHART®-drier 410 can offer superior properties such as:

- The minimization of discoloration of clear urethane-modified alkyds in can;
- The improvement of alkali resistance;
- The increase of yellowing resistance of (air drying) alkyd finishes especially those which undergo prolonged heat or alkaline fumes;
- The prevention of loss of dry on aging;
- The relative lower level of toxicity compared to cobalt.

APPLICATIONS: VLEI GENTHART®-drier 410 can provide complete drying of the system, but optimum results will be obtained when used in combination with auxiliary driers. This is to ensure rapid and complete trough drying.

USE LEVEL: The normal use of level range is:
0.3 - 0.5% VLEI GENTHART®-drier 410 as form of supply on resin solids. Increasing lever up to **1%** will increase the film hardness
0.05 - 0.3% VLEI GENTHART®-drier Calcium as metal on resin solid.
0.1 - 0.4% VLEI GENTHART®-drier Zirconium as metal on resin solid.
This dosage should only be considered as a guideline.
The optimum combination and concentrations will depend on the total formulation characteristics.

HANDLING: VLEI GENTHART®-drier 410 should be handled in accordance with good industrial practice. Consult Material Safety Data Sheet for specific safety and handling information.

STORAGE: VLEI GENTHART®-drier 410 should be stored between -10°C and 35°C. Shelf-life if stored in original unopened packaging under the mentioned conditions:
- VLEI GENTHART®-drier 410 2 years

PACKAGING: Non-returnable 200L steel drums and 1000L IBC



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Green by nature

DRYING VEGETABLE OILS
PAINT REMOVERS
COOKED BINDING MEDIA
CLEAR VARNISHES
PAINT DRIERS AND ADDITIVES

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<i>Typical Properties</i>	410
Metal content, %	-
Viscosity @ 25°C, mPa.s approx.	-
Non volatile, %	-
Specific gravity (25°C) in g/cm ³	0.87 – 0.91
Color	brownish
Volatile Organic Content, g/L	552
Solvent(s)	Low flash, low aromatic mineral spirits

All above mentioned figures are indicative values only.

VLEIENGHART®-drier 410 was tested in 2 different urethane –modified alkyds (see table below) in comparison to Cobalt octoate, considered to be the benchmark.

	Formulation 1	Formulation 2	Formulation 3	Formulation 4
Uralac AR 202 W50 (DSM)	80.00	80.00		
U-alkyd (60%)	--	--	80.00	80.00
White Spirit	18.96	18.96	18.46	18.46
VLEIENGHART®-drier 410	0.24	--	0.30	--
VLEIENGHART®-drier Cobalt 10%	--	0.24	--	0.30
VLEIENGHART®-drier Calcium 10%	0.48	0.48	0.48	0.48
VLEIENGHART®-drier Zirconium 18%	0.80	0.80	0.80	0.80
Color/Gardner	4 – 5	13 – 14	4 – 5	14
Drying time @ 25°C (in min)	140	130	150	145

The technical information and specifications contained in this data sheet are based on careful investigations and given to the best of our knowledge. Nevertheless circumstances under which the product is used in practice are subject to many variations. VLEIENGHART BV cannot be held responsible for possible deviations.



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