

PRODUCT INFORMATION

WARADUR® OP

Product Description

WARADUR® OP is an ester wax consisting of esters of montanic acids with multihydroxyl alcohols. Montanic acids are straight-chained monocarboxylic acids with a chain length in the range of C28 – C32. The corresponding esters exhibit chain length in the range of C58 – C66 and provide this wax with a low volatility, good thermostability and low migration rates. WARADUR® OP contains calcium montanate in addition to the montanic acid esters.

General Advantages

High effectiveness at low concentrations: WARADUR® OP is extremely versatile and suitable for a wide range of plastics applications as a multi-purpose additive, e.g. release agent, flow improver, dispersing agent, nucleation agent, gloss booster, surface improver. WARADUR® OP is suitable for engineering plastics, thermosets, PVC, etc.

Examples of Use

- Thermoplastics: PA, PBT, TPE, PC, PVC, styrenics
- Thermosets: epoxy resins, phenolic resins, polyurethane
- Dispersing agents for colour masterbatches and filled plastics (talc, glass fibre)

Delivery Specifications *

Characteristics	Unit	Target value	Method
Acid value *	mg KOH/g	7 – 14	ISO 2114
Saponification value *	mg KOH/g	110 – 130	ISO 3681
Drop point *	°C	99 – 105	ASTM 3954
Colour	–	light yellowish	AA 3.2.1.505
Viscosity @ 120 °C	mPas	150 – 300	AA 3.2.1.520
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Flakes or powder
Packaging	Paper bag or Big Bag
Storage	Store at ambient temperature on a dry place. Protect from heat/overheating and direct sunlight. The minimum remaining period is 1.5 years and is defined as the minimum shelf life at the customer. Thereafter, tests of the chemical characteristics are recommended. The maximum shelf life of 5 years is indicated.

Safety

WARADUR® OP

- is made from a fossil biological source
- in a test for ready biodegradability showed 22 % biodegradability, which can be considered as indication for inherent primary biodegradability, according to OECD (2006)
- is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings

Delivery Time and Availability

Standard delivery time: 2 – 3 weeks. Preconditions can be met for achieving shorter delivery times on standard products when demanded by the market.

Legislation

Food contact legislation:

- FDA 175.105 Adhesives
- FDA 177.2600 Rubber articles intended for repeated use
- FDA 178.3770 For use in lubricants in the fabrication of vinyl chloride plastic food contact articles
- Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food

Other legislation:

- REACH, RoHS and CONEG compliant
- Listed in all relevant National Inventories

For further information, please contact application@voelpker.com.