OQEMA labs

GUIDE FORMULATION – OQ-EH-0010 R - Issue 1 - October 2025

Wood oil (worktop oil)

Ideal for wooden worktops, countertops, and other interior wood surfaces.

- Contains more than 97 % **renewable raw materials**.
- **Solvent-free*** and **cobalt-free**.
- Provides durable **protection** against moisture, stains and daily wear.
- **Highlights** the natural grain and warmth of the wood.
- **Easy** to apply, recoat and maintain.

Formulation

Raw material	Function	Supplier	wt.%	Production
Refined linseed oil (# 850319)	Binder	OQEMA	60.0	*Prepare the oils first. Add the remaining ingredients step by step under stirring. Continue mixing for at least 5 minutes, until a homogeneous mixture is obtained. Avoid mixing in open air to minimize oxidation.*
Linseed stand oil 50-55 dPa·s (# 850310)	Binder	OQEMA	28.0	
Tung oil (# 850195)	Binder	OQEMA	8.50	
Biomer 129 O	Wax dispersion	DEUREX	1.40	
TINUVIN 292	HALS	BASF	0.50	
TINUVIN 1130	UV absorber	BASF	0.70	
VALIREX Mn 10% D60	Drier	Umicore	0.45	
VALIREX Zr 18% D60	Drier	Umicore	0.25	
VALIREX Ca 10% D60	Drier	Umicore	0.20	

Technical Data

Property	Test method	Result
Density	DIN EN ISO 2811-1	0.94 g/cm³
Flow time (4 mm flow cup)	DIN EN ISO 2431	50 s
Bio-based content	Calculated	> 97 %
Non-volatile content (residue at 105 °C by weight)	Calculated	> 99 %*
Recoating time (at 20 °C / 50 % r.h.)	Internal method	~ 15 hours

Full cure time (at 20 °C / 50 % RH)	Internal method	~ 7 days
Water resistance (48 h) (two coats, fully cured)	Internal method	No defects (subject to wood type and application)
Olive oil resistance (48 h) (two coats, fully cured)	Internal method	No defects (subject to wood type and application)
Coffee resistance (48 h) (two coats, fully cured)	Internal method	No defects (subject to wood type and application)
Ketchup resistance (48 h) (two coats, fully cured)	Internal method	No defects (subject to wood type and application)

Application instructions for end users

Surface preparation

- Ensure the wood surface is clean, dry, and free from dust or grease.
- Moisture content should be below 12 %.
- Sand the surface with grit 180 – 240 for a fine finish.

First coat

- Apply the oil evenly with a roller, brush, cloth or sponge.
- Note: materials such as cloths or pads soaked with oil may **self-ignite** (see "Safety instructions").
- Approximate consumption: **~ 30 mL/m²**; actual consumption may vary significantly depending on wood type and application method.
- Allow it to penetrate for about 20 - 30 minutes.
- Distribute or remove any **excess** from still absorbent areas.

Second coat (if required)

- Lightly sand and clean the surface before applying the next coat.
- After at least 15 hours, apply a thin second coat and process in the same way.
- Depending on the absorbency of the wood, a third coat may be necessary.

Drying time

- At 20 °C and 50 % relative humidity: dry and recoatable after approx. 15 hours.
- Full curing takes **~ 7 days**. Ensure good air circulation during drying.

Cleaning of tools

- Clean application tools immediately after use with a suitable brush cleaner or thinner.

Care and maintenance

- Clean treated surfaces with a mild, pH-neutral cleaner in lukewarm water.
- For refreshing, re-oil the surface as described once it has dried completely. Sand slightly with fine paper (240 grit) if the surface shows wear or greying. For heavily used surfaces, regular re-oiling is recommended.

***Note on non-volatile content:**

- The non-volatile content could not be determined experimentally, as the weight of the worktop oil increases slightly during oxidative curing due to the chemical incorporation of oxygen into the polymer structure. For the calculated value, the contents of all

components with a boiling point above 105 °C were added together. The resulting non-volatile content is above 99 %. This is generally considered solvent-free.

Optional modifications for development

- The addition of DEUREX 129 O, TINUVIN 292 and TINUVIN 1130 is **optional** and may be used to further optimize surface properties.
- These additives can enhance scratch resistance and UV stability if required by specific performance targets or application environments.

Safety instructions

- Cloths, pads, and other materials soaked with oil can **spontaneously ignite**. Always store them in airtight metal containers or immerse completely in water immediately after use until disposal.
- All drying oils in this product (linseed oil, stand oil, and tung oil) are self-heating substances that may ignite when absorbed into porous materials such as cloth or paper
- Avoid contact with skin and eyes.
- Ensure good ventilation during application and drying.
- Do not smoke or use near open flames.
- Keep out of reach of children.
- Wash hands thoroughly after use.

Storage instructions

- Store in tightly closed containers, in a cool, dry, and well-ventilated place.
- Keep containers tightly sealed when not in use.
- Prevent any risk of spontaneous combustion. Do not store oily materials or waste near heat sources.
- Protect from frost and direct sunlight.
- Recommended storage temperature: **5 – 30 °C**.
- Skin formation may occur; remove before use if present.
- Filter the oil if necessary before re-use.
- Shelf life: **12 months** when stored in tightly closed containers under recommended conditions.

Disclaimer: