

All Finishes Have a Shelf Life



How to make them last longer and how to tell when they've gone bad

TIP

ALWAYS DATE YOUR FINISH

On the container, write the date that you dissolved the shellac, or mixed your own wiping varnish. After six months, test the finish before use, even if it looks fine. Also, label brand-new finish with the purchase date, or the date provided by the manufacturer.



BY JEFF JEWITT

Few things are more annoying than opening a \$30 quart of varnish you bought last year, only to find the remaining two-thirds has solidified into a gel. It's an expensive reminder that tools may last a lifetime, but finishes don't.

All finishes have a shelf life, which is the amount of time that a product remains usable. I'll show you how to maximize the shelf life of finishing materials, and more importantly,

how to tell when they've gone to the dark side.

Buy it fresh and date it

I'm as cheap as anybody, but when it comes to finishes, "buy more, save more" isn't a good strategy. Try to anticipate how much finish you'll use over the next year and don't buy more than that. Some manufacturers publish shelf-life figures and date products clearly, but many don't.

Never buy cans with rusty lids, the ones you often see "on

Keeping oxygen out

Oil-based finishes start to harden when exposed to oxygen, so keep them in an airtight container. To maintain a good seal, remove any dried finish from the lid and rim, and wipe down the rim after each use.

CLEAN THE RIM

Dig it out. To create a good seal with the lid, dig out any dried finish that has collected in the rim.



sale”—the condition of the can indicates poor storage or old age. Try to buy finishes like you buy milk: Look for a manufacturing date. If you don't understand the dating code, ask a clerk for help. If there is no date, write the date of purchase on the can. Label all your finishes, including those you've mixed yourself.

Store finish in a cool place, between 55°F and 70°F. Chemical reactions accelerate as the temperature rises, and almost all processes that cause finish to go bad involve chemical reactions. A cool basement is better than a hot garage. Most finishes are OK if stored below 55°, with the exception of waterborne. If you work in a cold shop, store your waterborne finishes in the house, and never let them freeze. Bring all finishes up to 55° to 70° before you use them. Also, keep the lid tight. If necessary,

transfer the product to a container with a tighter lid.

Keep oxygen out of oil-based finishes

Any finish based on a drying oil will harden when exposed to oxygen. These include tung and linseed oils, so-called Danish oils, and oil-based varnishes and polyurethanes. If you're not careful when storing these products, oxygen will cause them to harden prematurely.

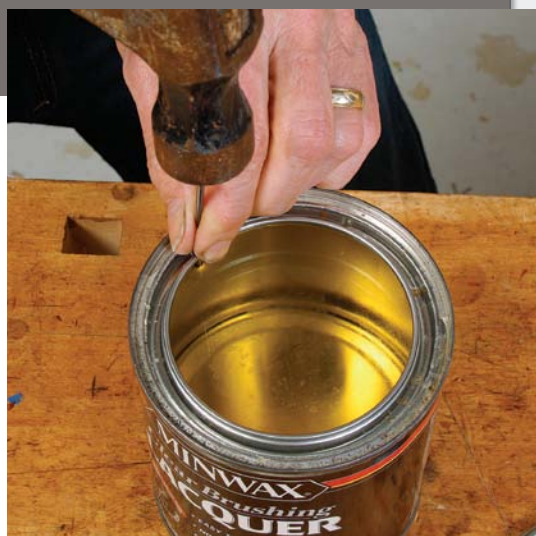
When a can is full, there's no room for oxygen. But as you use the finish, you create “head space” as the can fills with air. Exposed to oxygen, the finish will gradually skin over, or the whole liquid may start to gel.

Kept in tightly sealed containers with minimal head space, raw or boiled linseed oil and tung oil can last five or more years. It might thicken with age, but if it isn't cloudy and gummy, it should be usable. Danish



KEEP THE LID TIGHT

Clean it. If the inside of a lid has become encrusted with finish and won't fully screw on, soak it in lacquer thinner and then scrub it with steel wool.



The self-draining trick. Use a nail to punch four or five holes in the rim of a standard container. When finish gets into the rim, it will drip back into the can.



Non-stick finish. Wrap a screw top with Teflon plumber's tape. Finish won't stick to it, you'll get a much better seal, and the lid will screw on and off more easily.

Oil-based basics

Oil-based finishes can last indefinitely, but only if you keep oxygen away.

TEST

Good under the skin. If the finish only has a thin skin on it, the liquid underneath should still be usable. Pour it through a strainer into a new container.



Too far gone. If the finish has started to gel, or if you create lots of small flakes trying to break through the skin, it is probably not worth using.

PRODUCT

Linseed oil
(boiled and raw)

Tung oil

Danish oil, oil
and varnish
blends

Tung-oil-based
varnish

Alkyd varnishes

Oil-based
polyurethane

PREVENT

Fill to the brim. Fill a smaller jar with finish from a partially used can. This will prolong the life of the left-over finish by minimizing its contact with oxygen.



Or replace the air. After using some of the contents, spray inert gas into the container to replace the air and prevent the remaining finish from hardening.

MYTH

STORING UPSIDE DOWN PROLONGS SHELF LIFE



Storing a half-empty can upside down does nothing to displace the air and will not prolong the life of the contents.

oil-type products are mostly oil and solvent. They may thicken, but are usable as long as they are clear and liquid.

On the other hand, when air gets into cans of oil-based varnish and polyurethane, one of two things will happen. In some products, a skin will form. If you can break the skin and get at the liquid, it's generally usable. But, in tung-oil-based varnishes like Waterlox, air can gel the entire contents, rendering them unusable.

To minimize exposure to oxygen, transfer finish to smaller containers as you use it (I use glass Mason and baby food jars). Or, use a product like Bloxygen, which replaces the air with a heavier gas. To test the finish, pour it through a medium mesh strainer (the cone-shaped type available at hardware and paint stores). If it strains, it's good.

Even flakes have a shelf life

When you dissolve dry shellac flakes in alcohol, the shelf-life

SHELF LIFE BEFORE OPENING	SHELF LIFE AFTER OPENING	BRAND NAMES	COMMENTS	UNUSABLE WHEN
Indefinite	Indefinite	Kleen Strip, Crown, Sunnyside	Can be thinned with mineral spirits if necessary.	Will not strain, is thick and jelly-like
Indefinite	Indefinite	Hopes, Master Blend, Rockler, Woodcraft	Can be thinned with mineral spirits if necessary.	Will not strain, is thick and jelly-like
Indefinite	Indefinite if properly stored	Watco, Deft, General Finishes	Pour into smaller containers or use Bloxygen.	Hardened or jelly-like
Indefinite	Indefinite in ideal conditions; typically 3–4 years	Waterlox and some spar varnishes	Shortest shelf life once opened. Pour into smaller containers or use Bloxygen.	Jelly-like consistency
Indefinite	Indefinite if properly stored	Pratt & Lambert, 38 Clear Varnish, Old Masters Super Varnish	Forms skin after prolonged oxygen exposure, but liquid underneath is generally usable.	Hardened or jelly-like
Indefinite	Indefinite if properly stored	Minwax, Deft, Varathane, Cabot, Behlen	Forms skin after prolonged oxygen exposure, but liquid underneath is generally usable.	Hardened or jelly-like

clock starts ticking faster. This is due to esterification, a gradual chemical reaction between alcohols and organic acids (shellac is made up of organic acids). The reaction produces chemicals called esters, which are softer and tackier than the normally hard shellac resin. They are also more prone to water-spotting.

Less-refined shellac grades like button, seedlac, and waxy grades will esterify at a much slower rate and may last over a year once dissolved. Dewaxed, bleached grades such as super blond should be used within six months to a year, depending on the “cut,” or the ratio of flakes to alcohol. That goes for all mixed shellac: the more alcohol, the shorter the shelf life.

To test whether dissolved shellac is still viable, pour a drop onto an impermeable surface such as glass or laminate. If it’s good, it will dry enough to be tack-free (your finger won’t stick to it) within an hour.

Dry flakes also have a shelf life. Bleached and dewaxed flakes are the most prone to going bad, while unrefined

Waterborne

Use waterborne finishes within a year or two of purchase and store them at between 55° and 70°F. If they freeze, throw them out.

PRODUCT	SHELF LIFE BEFORE OPENING	SHELF LIFE AFTER OPENING	BRAND NAMES	COMMENTS	UNUSABLE WHEN
Waterborne finishes	1–2 years	1–2 years if properly stored	General Finishes, Varathane, Behlen, Target, Minwax, Deft	Don’t use waterborne finishes older than 2 years.	Discolored, lumpy, or rubbery when strained; test with strainer



Waterborne gone bad. When a waterborne finish gets too old, it can curdle and get lumpy, like sour milk.

Shellac

Shellac has a shelf life both as flakes and when dissolved. Old shellac will take longer to dry and won't create a durable finish.



TEST

Flakes won't dissolve. If flakes don't dissolve, they're no good.



Liquid won't harden. To test the viability of old shellac, pour a small puddle onto an impermeable surface. If it's tacky after an hour, dispose of it.

PREVENT

Keep it cool. Refrigerating shellac flakes slows their deterioration.



waxy grades can last for years. In general, try to use flakes within a year after purchase.

There are a couple of myths about prolonging the shelf life of shellac. Some folks say that old shellac can be forced to dissolve by grinding it. Not true. Bad shellac is bad regardless of the size of the flakes.

The second myth is that vacuum-sealing shellac flakes

makes them last longer. In fact, dry shellac reacts with itself over time, slowly becoming insoluble in alcohol. Heat accelerates the reaction, but oxygen has no effect. Probably, this myth persists because most folks vacuum-seal flakes and then refrigerate them, which *will* prolong their shelf life.

Waterborne finishes have different problems

It's hard to generalize shelf life and storage needs for waterborne finishes because there are so many types. In general, I try to use them within a year, two at the most. Keep cans tightly sealed in a cool, dry place, and don't let them freeze. Bad waterborne finish has a cheesy, curdled consistency, or it separates like oil and water, even

MYTH

VACUUM PACKING OR GRINDING EXTENDS SHELF LIFE

Vacuum sealing a bag of flakes doesn't extend its shelf life. The chemical breakdown isn't affected by oxygen.



Turning old shellac flakes into powder may make them dissolve in alcohol, but it will still produce an inferior finish.

PRODUCT	SHELF LIFE BEFORE OPENING	SHELF LIFE AFTER OPENING	BRAND NAMES	COMMENTS	UNUSABLE WHEN
Shellac flakes, waxy Includes seedlac and buttonlac, waxy orange and lemon	5 or more years in cool, dry conditions	(After mixing) 1–2 years in cool, dry conditions	Woodcraft and various online retailers	When mixed, thinner cuts have shorter shelf life. Refrigerate unused flakes.	Mixed with alcohol, a jelly forms
Shellac flakes, dewaxed Includes super blond, blond, pale, etc.	1–2 years in cool, dry conditions	(After mixing) 6–12 months in cool, dry conditions	Woodcraft and various online retailers	When mixed, thinner cuts have shorter shelf life. Refrigerate unused flakes.	Mixed with alcohol, a jelly forms
Shellac, premixed	3 years	3 years if properly stored	Zinsser Bulls-eye, Sealcoat	Zinsser dates all its products. Buy the freshest date.	Won't dry quickly or stays tacky

Lacquer

Furniture lacquer is among the longest-lasting clear finishes. It can stay usable for many years when stored correctly.

PRODUCT	SHELF LIFE BEFORE OPENING	SHELF LIFE AFTER OPENING	BRAND NAMES	COMMENTS	UNUSABLE WHEN
Nitrocellulose lacquer	Indefinite	Indefinite	Deft Clear Wood Finish, Minwax, Deft	Store in original container with tight seal.	Severely discolored, cloudy, or rubbery sediment

after shaking. The additives in waterborne finishes can deactivate over time, causing them to “fisheye” or become foamy after they’re applied. If a product is more than a year old, run it through a mesh filter and test it on a sample board before you use it. (If in doubt, throw it out.)

Head space doesn’t cause problems with most waterborne finishes, but dried finish around the lid seal does.

Again, transfer unused finish to a smaller container (glass or plastic) with a tight-fitting lid.

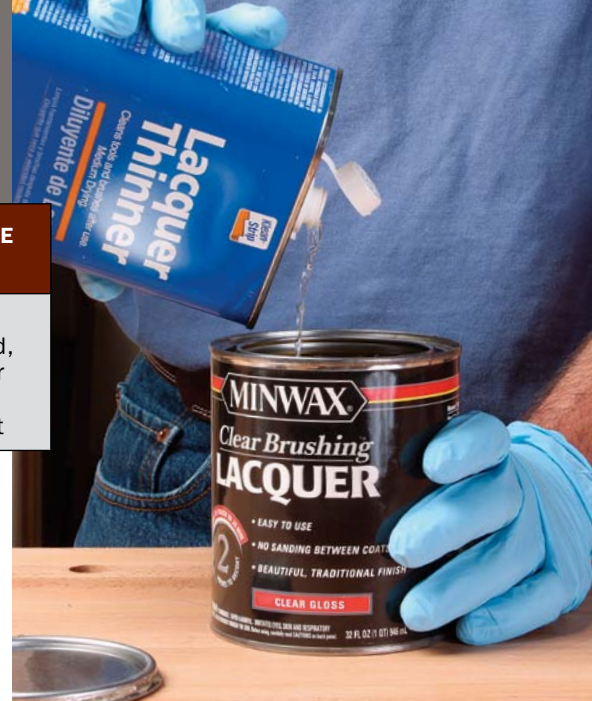
Long live lacquer

One of the few products with a long shelf life is plain old solvent-based furniture lacquer, also known as nitrocellulose lacquer. Because there are no reactive components in the resin, it should store for many years if you keep it close to the 55° to 70°F range.

Oxygen has no effect on lacquer. It may thicken if the solvent evaporates, but just add lacquer thinner and keep the lid tight. I’ve seen lacquers yellow in the can over time, but this generally doesn’t affect appearance.

Stains and dyes last long

Pigment stains are forgiving when it comes to shelf life and storage. They should store just fine for years. (Oil-based gel stains are an exception; treat them like other oil-based finishes.) One caution: Don’t let waterborne stains freeze, or they’ll become “cheesy” or curdled.



Old lacquer can be thinned. Solvent-based lacquer may thicken with age, but a dash of thinner can bring it back to life.

Concentrated liquid or powdered dyes have a virtually infinite shelf life. Try to use mixed dyes within a year, but as long as you store them in a metal-free container to avoid rust, they can last much longer. Always test older pigments and dyes on a scrap, to confirm the color hasn’t changed. □

Jeff Jewitt writes frequently about finishing for FWW.

Dyes and stains

Concentrated dyes, whether liquid or powder, and pigment stains can last for decades in their pre-mixed form.



Dye another day. Water-based dyes, once dissolved, will last a year or more if kept in a non-metallic container.

PRODUCT	SHELF LIFE BEFORE OPENING	SHELF LIFE AFTER OPENING	BRAND NAMES	COMMENTS	UNUSABLE WHEN
Oil-based pigment wiping stains	Indefinite	Indefinite if stored in an airtight container	Minwax, General Finishes	If skin develops, product underneath should be usable	Hardened
Dye powders and concentrates unmixed	Indefinite	Indefinite	JE Moser, Lockwood, Homestead, Arti	Can last 20 years or more	Doesn’t dissolve in solvent
Dyes, premixed with water or solvents	Indefinite	Indefinite	Behlen Solar-Lux, General Finishes	Never store dyes in metal containers. Use plastic or glass.	Severe color change from original; doesn’t dissolve in solvent