

PROPERTIES OF COMMON FINISHING MATERIALS

| Type of Finish | Examples | Chemistry | Protecting Properties | Enhancing Properties | Application | Toxicity | Comments |
|----------------------|---|--------------------------|---|---|------------------------|---------------|--|
| Drying Oils | Boiled linseed oil, pure tung oil, walnut oil | Reactive | Very soft and permeable; ineffective barrier to water; chemical- and heat-sensitive; not durable | Penetrating; flat and will not take a gloss; amber tint; fairly transparent. | Wipe on -or- brush on | Low, nontoxic | Slow to dry, has little value as finish except where non-toxicity is needed |
| Shellacs | Orange shellac, white shellac | Evaporative | Medium hard, non-permeable; not a great water barrier; chemical- and heat-sensitive; fairly durable. | Building; can be rubbed to a high gloss; clear to deep amber tint; transparent. | Brush on -or- spray on | Nontoxic | Fast-drying, easy to apply and repair. Traditional finish for classic furniture. |
| Lacquers | Spray lacquer, brush lacquer, lacquer paint | Evaporative | Medium hard, semi-permeable; acceptable water barrier; somewhat sensitive to heat, chemicals; fairly durable. | Building; can be rubbed to a high gloss; clear to slight amber tint; very transparent. | Brush on -or- spray on | Low | Fast-drying, easy to repair. Fumes highly dangerous and unhealthy. Spray-on sensitive to humidity. |
| Varnishes | Tung oil varnish, spar varnish, varnish stains | Reactive | Hard, almost non-permeable; good water barrier; chemical- and heat-resistant; durable. | Building; can be rubbed to a low gloss; amber tint; very transparent. | Brush on -or- spray on | Low | Fairly slow to dry, difficult to repair. Fumes unhealthy. |
| Polyurethanes | Polyurethane varnish, polyurethane stain | Reactive | Very hard, non-permeable; excellent water barrier; chemical- and heat resistant; very durable. | Building; can be rubbed to a low gloss; slight amber tint; transparent | Brush on -or- spray on | Low | Can be slow to dry, difficult to repair. Fumes unhealthy |
| Wiping Oils | Most "tung oil" finishes, antique oil, Danish oil | Reactive | Medium-hard, semi-permeable; acceptable water barrier; chemical- and heat-resistant; fairly durable. | Penetrating; can be rubbed to a satin look (after many coats); amber tint; transparent. | Wipe on -or- brush on | Low, nontoxic | Easy to apply, easy to repair. Film very thin, requires multiple coats. |
| Water-Based Finishes | Water-based varnish, water-based lacquer | Coalescing | Very hard, semi-permeable; good water barrier; somewhat sensitive to heat, chemicals; durable. | Building; can be rubbed to a low gloss; clear (some are tinted); transparent. | Brush on -or- spray on | Low | Fast-drying, fairly easy to apply and repair. Sensitive to silicone, oil, and wax. |
| Conversion Finishes | Bar-top finish, epoxy resin, catalyzed lacquer | Catalyzing | Very hard, non-permeable; excellent water barrier; chemical- and heat-resistant; very durable. | Building; can be rubbed to a gloss; clear to slight amber tint; very transparent. | Brush on -or- spray on | Medium | Must apply quickly, very difficult to repair. Skin contact may be unhealthy. |
| Oil Paints | Spray paint, house paint, artist's oils | Reactive | Hard, almost non-permeable; good water barrier; chemical- and heat-resistant; durable. | Building; can be rubbed to a gloss; may be any color (pigmented); opaque. | Brush on -or- spray on | Low, medium | Fairly slow to dry, difficult to repair. Fumes unhealthy. |
| Latex Paints | Inerior latex, exterior latex, artist's acrylics | Coalescing | Hard, semi-permeable; good water barrier; chemical- and heat-resistant; durable. | Building; can be rubbed to a low gloss; may be any color (pigmented); opaque. | Brush on -or- spray on | Low, nontoxic | Fairly quick to dry, easy to repair. Sensitive to oil and wax. |
| Wood Stains | Oil stain, gel stain, water-based stain | Reactive -or- Coalescing | Provides no protection by itself; meant to be applied under a clear finish. | Penetrating; may be any color (pigmented, may have dyes added); semi-opaque. | Wipe on -or- brush on | Low | Can be slow to dry, color "bleeds" into some transparent finishes. |
| Wood Dyes | Aniline dye, spirit stain | Evaporative | Provides no protection by itself; meant to be applied under a clear finish. | Penetrating; may be any color; transparent. | Wipe on -or- brush on | Low, nontoxic | Fast-drying, color vivid and permanent, slow to fade. |
| Waxes | Paste wax, furniture wax | Evaporative | Provides no protection by itself; meant to be applied over a finish. | May be tinted; semi-opaque (transparent after buffing). | Wipe on, Buff off | Nontoxic | Gives finish an oily sheen, pleasant feel and smell. |