

Oil colors

As Artistic Medium

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OIL PAINT



OIL PAINT IS A TYPE OF SLOW-DRYING PAINT THAT CONSISTS OF PARTICLES OF PIGMENT SUSPENDED IN A DRYING OIL, COMMONLY LINSEED OIL. THE VISCOSITY OF THE PAINT MAY BE MODIFIED BY THE ADDITION OF A SOLVENT SUCH AS TURPENTINE OR WHITE SPIRIT, AND VARNISH MAY BE ADDED TO INCREASE THE GLOSSINESS OF THE DRIED OIL PAINT FILM. OIL PAINTS HAVE BEEN USED IN EUROPE SINCE THE 12TH CENTURY FOR SIMPLE DECORATION, BUT WERE NOT WIDELY ADOPTED AS AN ARTISTIC MEDIUM UNTIL THE EARLY 15TH CENTURY. COMMON MODERN APPLICATIONS OF OIL PAINT ARE IN FINISHING AND PROTECTION OF WOOD IN BUILDINGS AND EXPOSED METAL STRUCTURES SUCH AS SHIPS AND BRIDGES.

ITS HARD-WEARING PROPERTIES AND LUMINOUS COLORS MAKE IT DESIRABLE FOR BOTH INTERIOR AND EXTERIOR USE ON WOOD AND METAL. DUE TO ITS SLOW-DRYING PROPERTIES, IT HAS RECENTLY BEEN USED IN PAINT-ON-GLASS ANIMATION. THICKNESS OF COAT HAS CONSIDERABLE BEARING ON TIME REQUIRED FOR DRYING: THIN COATS OF OIL PAINT DRY RELATIVELY QUICKLY.

• IN SIMPLE WORD OIL PAINTS ARE THE MIXTURE OF 3 THINGS

PIGMENT+BINDER+THINNER=OIL PAINTS

PIGMENT

PIGMENT A SUBSTANCE USED FOR COLORING OR PAINTING, ESPECIALLY A DRY POWDER, WHICH WHEN MIXED WITH OIL, WATER, OR ANOTHER MEDIUM CONSTITUTES A PAINT OR INK. **PIGMENT**, ANY OF A GROUP OF COMPOUNDS THAT ARE INTENSELY COLORED AND ARE USED TO COLOR OTHER MATERIALS.



BINDER A BINDER OR BINDING AGENT IS ANY MATERIAL OR SUBSTANCE THAT HOLDS OR DRAWS OTHER MATERIALS TOGETHER TO FORM A COHESIVE WHOLE MECHANICALLY, CHEMICALLY, BY ADHESION OR COHESION.

IN A MORE NARROW SENSE, BINDERS ARE LIQUID OR DOUGH-LIKE SUBSTANCES THAT HARDEN BY A CHEMICAL OR PHYSICAL PROCESS AND BIND FIBERS, FILLER POWDER AND OTHER PARTICLES ADDED INTO IT. EXAMPLES INCLUDE GLUE, ADHESIVE AND THICKENING.

THINNER A PAINT THINNER IS A SOLVENT USED TO THIN OIL-BASED PAINTS OR CLEAN UP AFTER THEIR USE. COMMERCIALY, SOLVENTS LABELED "PAINT THINNER" ARE USUALLY MINERAL SPIRITS HAVING A FLASH POINT AT ABOUT 40 °C (104 °F), THE SAME AS SOME POPULAR BRANDS OF CHARCOAL STARTER.

PIGMENT IS A COLOR ELEMENT WHILE THE BINDER IS A LIQUID VEHICLE OR CARRIER WHICH HOLDS THE GROUND UP PIGMENT TO BE APPLIED TO THE CANVAS OR WHATEVER SUPPORT IS TO BE PAINTED. A THINNER IS USUALLY ADDED TO THE PAINT TO MAKE IT EASIER TO APPLY WITH BRUSH. THUS FOR EXAMPLE ONE OF THE SIMPLEST OIL PAINT MIGHT CONTAIN A MIXTURE OF PIGMENT, OIL BASED BINDER AND THINNER. OIL PAINTS ALSO CONTAINS A NUMBER OF OTHER ADDITIVES TO PROMOTE DRYING APPEARANCE AND OTHER ACTIONS.

HISTORY

THE TECHNICAL HISTORY OF THE INTRODUCTION AND DEVELOPMENT OF OIL PAINT, AND THE DATE OF INTRODUCTION OF VARIOUS ADDITIVES (DRIERS, THINNERS) IS STILL—DESPITE INTENSE RESEARCH SINCE THE MID 19TH CENTURY—NOT WELL UNDERSTOOD. THE LITERATURE ABOUNDS WITH INCORRECT THEORIES AND INFORMATION: IN GENERAL, ANYTHING PUBLISHED BEFORE 1952 IS SUSPECT. UNTIL 1991 NOTHING WAS KNOWN ABOUT THE ORGANIC ASPECT OF CAVE PAINTINGS FROM THE PALEOLITHIC ERA. MANY ASSUMPTIONS WERE MADE ABOUT THE *CHEMISTRY* OF THE BINDERS.

FIRST RECORDED USE

THE OLDEST KNOWN OIL PAINTINGS DATE FROM 650 AD, FOUND IN 2008 IN CAVES IN AFGHANISTAN'S BAMIYAN VALLEY, "USING WALNUT AND POPPY SEED OILS.

CLASSICAL AND MEDIEVAL PERIOD

THOUGH THE ANCIENT MEDITERRANEAN CIVILIZATIONS OF GREECE, ROME, AND EGYPT USED VEGETABLE OILS, THERE IS LITTLE EVIDENCE TO INDICATE THEIR USE AS MEDIA IN PAINTING. INDEED, LINSEED OIL WAS NOT USED AS A MEDIUM BECAUSE OF ITS TENDENCY TO DRY VERY SLOWLY, DARKEN, AND CRACK, UNLIKE MASTIC AND WAX (THE LATTER OF WHICH WAS USED IN ENCAUSTIC PAINTING).

GREEK WRITERS SUCH AS AETIUS AMIDENUS RECORDED RECIPES INVOLVING THE USE OF OILS FOR DRYING, SUCH AS WALNUT, POPPY, HEMPSEED, PINE NUT, CASTOR, AND LINSEED. WHEN THICKENED, THE OILS BECAME RESINOUS AND COULD BE USED AS VARNISH TO SEAL AND PROTECT PAINTINGS FROM WATER. ADDITIONALLY, WHEN YELLOW PIGMENT WAS ADDED TO OIL, IT COULD BE SPREAD OVER TIN FOIL AS A LESS EXPENSIVE ALTERNATIVE TO GOLD LEAF.

EARLY CHRISTIAN MONKS MAINTAINED THESE RECORDS AND USED THE TECHNIQUES IN THEIR OWN ARTWORKS. THEOPHILUS PRESBYTER, A 12TH-CENTURY GERMAN MONK, RECOMMENDED LINSEED OIL BUT ADVOCATED AGAINST THE USE OF OLIVE OIL DUE TO ITS LONG DRYING TIME. OIL PAINT WAS MAINLY USED AS IT IS TODAY IN HOUSE DECORATION, AS A TOUGH WATERPROOF COVER FOR EXPOSED WOODWORK, ESPECIALLY OUTDOORS. IN THE 13TH CENTURY, OIL WAS USED TO DETAIL TEMPERA PAINTINGS. IN THE 14TH CENTURY, CENNINO CENNINI DESCRIBED A PAINTING TECHNIQUE UTILIZING TEMPERA PAINTING COVERED BY LIGHT LAYERS OF OIL. THE SLOW-DRYING PROPERTIES OF ORGANIC OILS WERE COMMONLY KNOWN TO EARLY PAINTERS. HOWEVER, THE DIFFICULTY IN ACQUIRING AND WORKING THE MATERIALS MEANT THAT THEY WERE RARELY USED (AND INDEED THE SLOW DRYING WAS SEEN AS A DISADVANTAGE).

RENAISSANCE ONWARDS

AS PUBLIC PREFERENCE FOR NATURALISM INCREASED, THE QUICK-DRYING TEMPERA PAINTS BECAME INSUFFICIENT TO ACHIEVE THE VERY DETAILED AND PRECISE EFFECTS THAT OIL COULD ACHIEVE. THE EARLY NETHERLANDISH PAINTING OF THE 15TH CENTURY SAW THE RISE OF THE PANEL PAINTING PURELY IN OILS, OR OIL PAINTING, OR WORKS COMBINING TEMPERA AND OIL PAINTING, AND BY THE 16TH CENTURY EASEL PAINTING IN PURE OILS HAD BECOME THE NORM, USING MUCH THE SAME TECHNIQUES AND MATERIALS FOUND TODAY. THE CLAIM BY VASARI THAT JAN VAN EYCK "INVENTED" OIL PAINTING, WHILE IT HAS CAST A LONG SHADOW, IS NOT CORRECT, BUT VAN EYCK'S *USE* OF OIL PAINT ACHIEVED NOVEL RESULTS IN TERMS OF PRECISE DETAIL AND MIXING COLOURS WET-ON-WET WITH A SKILL HARDLY EQUALLED SINCE. VAN EYCK'S MIXTURE MAY HAVE CONSISTED OF PILED GLASS, CALCINED BONES, AND MINERAL PIGMENTS BOILED IN LINSEED OIL UNTIL THEY REACHED A VISCOUS STATE—OR HE MAY HAVE SIMPLY USED SUN-THICKENED OILS (SLIGHTLY OXIDIZED BY SUN EXPOSURE). HE LEFT NO WRITTEN DOCUMENTATION.

THE FLEMISH-TRAINED OR INFLUENCED ANTONELLO DA MESSINA, WHO VASARI WRONGLY CREDITED WITH THE INTRODUCTION OF OIL PAINT TO ITALY, DOES SEEM TO HAVE IMPROVED THE FORMULA BY ADDING LITHARGE, OR LEAD (II) OXIDE. THE NEW MIXTURE HAD A HONEY-LIKE CONSISTENCY AND BETTER DRYING PROPERTIES (DRYING EVENLY WITHOUT CRACKING). THIS MIXTURE WAS KNOWN AS *OGLIO COTTO*—"COOKED OIL." LEONARDO DA VINCI LATER IMPROVED THESE TECHNIQUES BY COOKING THE MIXTURE AT A VERY LOW TEMPERATURE AND ADDING 5 TO 10% BEESWAX, WHICH PREVENTED DARKENING OF THE PAINT. GIORGIONE, TITIAN, AND TINTORETTO EACH MAY HAVE ALTERED THIS RECIPE FOR THEIR OWN PURPOSES.

THE USE OF ANY COOKED OILS OR LITHARGE DARKENS AN OIL PAINTING RAPIDLY. NONE OF THE OLD MASTERS WHOSE WORK SURVIVES USED THESE IN THEIR PAINTINGS. BOTH INGREDIENTS BECAME POPULAR IN THE 19TH CENTURY. SINCE THAT TIME, EXPERIMENTS TO IMPROVE PAINT AND COATINGS HAVE BEEN CONDUCTED WITH OTHER OILS. MODERN OIL PAINTS ARE CREATED FROM BLADDERPOD, IRONWEED, CALENDULA AND SANDMAT, PLANTS USED TO INCREASE THE RESISTANCE OR TO REDUCE THE DRYING TIME.

CHARACTERISTICS

TRADITIONAL OIL PAINTS REQUIRE AN OIL THAT ALWAYS HARDENS, FORMING A STABLE, IMPERMEABLE FILM. SUCH OILS ARE CALLED SICCATIVE, OR DRYING, OILS, AND ARE CHARACTERIZED BY HIGH LEVELS OF POLYUNSATURATED FATTY ACIDS. ONE COMMON MEASURE OF THE SICCATIVE PROPERTY OF OILS IS IODINE NUMBER, THE NUMBER OF GRAMS OF IODINE ONE HUNDRED GRAMS OF OIL CAN ABSORB. OILS WITH AN IODINE NUMBER GREATER THAN 130 ARE CONSIDERED DRYING, THOSE WITH AN IODINE NUMBER OF 115-130 ARE SEMI-DRYING, AND THOSE WITH AN IODINE NUMBER OF LESS THAN 115 ARE NON-DRYING. LINSEED OIL, THE MOST PREVALENT VEHICLE FOR ARTISTS' OIL PAINTS, IS A DRYING OIL. WHEN EXPOSED TO AIR, OILS DO NOT UNDERGO THE SAME EVAPORATIVE PROCESS THAT WATER DOES. INSTEAD, THEY POLYMERIZE INTO A DRY SEMISOLID. THIS RATE OF PROCESS CAN BE VERY SLOW, DEPENDING ON THE OIL. THE ADVANTAGE OF THE SLOW-DRYING QUALITY OF OIL PAINT IS THAT AN ARTIST CAN DEVELOP A PAINTING GRADUALLY. EARLIER MEDIA SUCH AS EGG TEMPERA DRIED QUICKLY, WHICH PREVENTED THE ARTIST FROM MAKING CHANGES OR CORRECTIONS. WITH OIL-BASED PAINTS, REVISING WAS COMPARATIVELY EASY. THE DISADVANTAGE IS THAT A PAINTING MIGHT TAKE MONTHS OR YEARS TO FINISH, WHICH MIGHT DISAPPOINT AN ANXIOUS PATRON. OIL PAINTS BLEND WELL WITH EACH OTHER, MAKING SUBTLE VARIATIONS OF COLOR POSSIBLE AS WELL AS CREATING MANY DETAILS OF LIGHT AND SHADOW. OIL PAINTS CAN BE DILUTED WITH TURPENTINE OR OTHER THINNING AGENTS, WHICH ARTISTS TAKE ADVANTAGE TO PAINT IN LAYERS.

SOURCES

THE EARLIEST AND STILL MOST COMMONLY USED VEHICLE IS LINSEED OIL, PRESSED FROM THE SEED OF THE FLAX PLANT. MODERN PROCESSES USE HEAT OR STEAM TO PRODUCE REFINED VARIETIES OF OIL WITH FEWER IMPURITIES, BUT MANY ARTISTS PREFER COLD-PRESSED OILS. OTHER VEGETABLE OILS SUCH AS HEMP, POPPY SEED, WALNUT, SUNFLOWER, SAFFLOWER, AND SOYBEAN OILS MAY BE USED AS ALTERNATIVES TO LINSEED OIL FOR A VARIETY OF REASONS. FOR EXAMPLE, SAFFLOWER AND POPPY OILS ARE PALER THAN LINSEED OIL AND ALLOW FOR MORE VIBRANT WHITES STRAIGHT FROM THE TUBE.

PAINT TUBE

THE PAINT TUBE WAS INVENTED IN 1841 BY PORTRAIT PAINTER JOHN GOFFE RAND, SUPERSEDING PIG BLADDERS AND GLASS SYRINGES AS THE PRIMARY TOOL OF PAINT TRANSPORT. ARTISTS, OR THEIR ASSISTANTS, PREVIOUSLY GROUND EACH PIGMENT BY HAND, CAREFULLY MIXING THE BINDING OIL IN THE PROPER PROPORTIONS. PAINTS COULD NOW BE PRODUCED IN BULK AND SOLD IN TIN TUBES WITH A CAP. THE CAP COULD BE SCREWED BACK ON AND THE PAINTS PRESERVED FOR FUTURE USE, PROVIDING FLEXIBILITY AND EFFICIENCY TO PAINTING OUTDOORS. THE MANUFACTURED PAINTS HAD A BALANCED CONSISTENCY THAT THE ARTIST COULD THIN WITH OIL, TURPENTINE, OR OTHER MEDIUMS.

PAINT IN TUBES ALSO CHANGED THE WAY SOME ARTISTS APPROACHED PAINTING. THE ARTIST PIERRE-AUGUSTE RENOIR SAID, "WITHOUT TUBES OF PAINT, THERE WOULD HAVE BEEN NO IMPRESSIONISM." FOR THE IMPRESSIONISTS, TUBED PAINTS OFFERED AN EASILY ACCESSIBLE VARIETY OF COLORS FOR THEIR PLEIN AIR PALETTES, MOTIVATING THEM TO MAKE SPONTANEOUS COLOR CHOICES. WITH GREATER QUANTITIES OF PRESERVED PAINT, THEY WERE ABLE TO APPLY PAINT MORE THICKLY.

TECHNIQUES TRADITIONAL OIL PAINTING TECHNIQUES OFTEN BEGIN WITH THE ARTIST SKETCHING THE SUBJECT ONTO THE CANVAS WITH CHARCOAL OR THINNED PAINT. OIL PAINT IS USUALLY MIXED WITH LINSEED OIL, ARTIST GRADE MINERAL SPIRITS, OR OTHER SOLVENTS TO MAKE THE PAINT THINNER, FASTER OR SLOWER-DRYING. (BECAUSE THESE SOLVENTS THIN THE OIL IN THE PAINT, THEY CAN ALSO BE USED TO CLEAN PAINT BRUSHES.) A BASIC RULE OF OIL PAINT APPLICATION IS 'FAT OVER LEAN', MEANING THAT EACH ADDITIONAL LAYER OF PAINT SHOULD CONTAIN MORE OIL THAN THE LAYER BELOW TO ALLOW PROPER DRYING. IF EACH ADDITIONAL LAYER CONTAINS LESS OIL, THE FINAL PAINTING WILL CRACK AND PEEL. THIS RULE DOES NOT ENSURE PERMANENCE; IT IS THE QUALITY AND TYPE OF OIL THAT LEADS TO A STRONG AND STABLE PAINT FILM..

THERE ARE MANY OTHER MEDIA THAT MAY BE USED WITH THE OIL, INCLUDING COLD WAX, RESINS, AND VARNISHES. THESE ADDITIONAL MEDIA CAN AID THE PAINTER IN ADJUSTING THE TRANSLUCENCY OF THE PAINT, THE SHEEN OF THE PAINT, THE DENSITY OR 'BODY' OF THE PAINT, AND THE ABILITY OF THE PAINT TO HOLD OR CONCEAL THE BRUSHSTROKE. THESE ASPECTS OF THE PAINT ARE CLOSELY RELATED TO THE EXPRESSIVE CAPACITY OF OIL PAINT.

TRADITIONALLY, PAINT WAS TRANSFERRED TO THE PAINTING SURFACE USING PAINTBRUSHES, BUT THERE ARE OTHER METHODS, INCLUDING USING PALETTE KNIVES AND RAGS. OIL PAINT REMAINS WET LONGER THAN MANY OTHER TYPES OF ARTISTS' MATERIALS, ENABLING THE ARTIST TO CHANGE THE COLOR, TEXTURE OR FORM OF THE FIGURE. AT TIMES, THE PAINTER MIGHT EVEN REMOVE AN ENTIRE LAYER OF PAINT AND BEGIN ANEW. THIS CAN BE DONE WITH A RAG AND SOME TURPENTINE FOR A TIME WHILE THE PAINT IS WET, BUT AFTER A WHILE THE HARDENED LAYER MUST BE SCRAPED. OIL PAINT DRIES BY OXIDATION, NOT EVAPORATION, AND IS USUALLY DRY TO THE TOUCH WITHIN A SPAN OF TWO WEEKS (SOME COLORS DRY WITHIN DAYS). IT IS GENERALLY DRY ENOUGH TO BE VARNISHED IN SIX MONTHS TO A YEAR.

APPLICATION OF OIL PAINTS

OIL PAINT IS MADE BY MIXING PIGMENTS OF COLORS WITH AN OIL MEDIUM. DIFFERENT COLORS ARE MADE, OR PURCHASED PREMIXED, BEFORE PAINTING BEGINS, BUT FURTHER SHADES OF COLOR ARE USUALLY OBTAINED BY MIXING SMALL QUANTITIES TOGETHER AS THE PAINTING PROCESS IS UNDERWAY. AN ARTIST'S PALETTE, TRADITIONALLY A THIN WOOD BOARD HELD IN THE HAND, IS USED FOR HOLDING AND MIXING PAINTS OF DIFFERENT COLORS. PIGMENTS MAY BE ANY NUMBER OF NATURAL OR SYNTHETIC SUBSTANCES WITH COLOR, SUCH AS SULPHIDES FOR YELLOW OR COBALT SALTS FOR BLUE. TRADITIONAL PIGMENTS WERE BASED ON MINERALS OR PLANTS, BUT MANY HAVE PROVEN UNSTABLE OVER LONG PERIODS OF TIME; THE APPEARANCE OF MANY OLD PAINTINGS TODAY IS VERY DIFFERENT FROM THE ORIGINAL. MODERN PIGMENTS OFTEN USE SYNTHETIC CHEMICALS. THE PIGMENT IS MIXED WITH OIL, USUALLY LINSEED, BUT OTHER OILS MAY BE USED. THE VARIOUS OILS DRY DIFFERENTLY, WHICH CREATES ASSORTED EFFECTS.

TRADITIONALLY, ARTISTS MIXED THEIR OWN PAINTS FROM RAW PIGMENTS THAT THEY OFTEN GROUND THEMSELVES AND MEDIUM. THIS MADE PORTABILITY DIFFICULT AND KEPT MOST PAINTING ACTIVITIES CONFINED TO THE STUDIO. THIS CHANGED IN THE 1800S, WHEN TUBES OF OIL PAINT BECAME WIDELY AVAILABLE FOLLOWING THE AMERICAN PORTRAIT PAINTER JOHN GOFFE RAND'S INVENTION OF THE SQUEEZABLE OR COLLAPSIBLE METAL TUBE IN 1841 (THE YEAR OF CLAUDE MONET'S BIRTH). ARTISTS COULD MIX COLORS QUICKLY AND EASILY, WHICH ENABLED, FOR THE FIRST TIME, RELATIVELY CONVENIENT PLEIN AIR PAINTING (A COMMON APPROACH IN FRENCH IMPRESSIONISM).

A BRUSH IS MOST COMMONLY EMPLOYED BY THE ARTIST TO APPLY THE PAINT, OFTEN OVER A SKETCHED OUTLINE OF THEIR SUBJECT (WHICH COULD BE IN ANOTHER MEDIUM). BRUSHES ARE MADE FROM A VARIETY OF FIBERS TO CREATE DIFFERENT EFFECTS. FOR EXAMPLE, BRUSHES MADE WITH HOG BRISTLE MIGHT BE USED FOR BOLDER STROKES AND IMPASTO TEXTURES. FITCH HAIR AND MONGOOSE HAIR BRUSHES ARE FINE AND SMOOTH, AND THUS ANSWER WELL FOR PORTRAITS AND DETAIL WORK. EVEN MORE EXPENSIVE ARE RED SABLE BRUSHES (WEASEL HAIR). THE FINEST QUALITY BRUSHES ARE CALLED "KOLINSKY SABLE"; THESE BRUSH FIBERS ARE TAKEN FROM THE TAIL OF THE SIBERIAN WEASEL. THIS HAIR KEEPS A SUPERFINE POINT, HAS SMOOTH HANDLING, AND GOOD MEMORY (IT RETURNS TO ITS ORIGINAL POINT WHEN LIFTED OFF THE CANVAS), KNOWN TO ARTISTS AS A BRUSH'S "SNAP." FLOPPY FIBERS WITH NO SNAP, SUCH AS SQUIRREL HAIR, ARE GENERALLY NOT USED BY OIL PAINTERS.

IN THE PAST FEW DECADES, MANY SYNTHETIC BRUSHES HAVE BEEN MARKETED. THESE ARE VERY DURABLE AND CAN BE QUITE GOOD, AS WELL AS COST EFFICIENT. BRUSHES COME IN MANY SIZES AND ARE USED FOR DIFFERENT PURPOSES. THE *TYPE* OF BRUSH ALSO MAKES A DIFFERENCE. FOR EXAMPLE, A "ROUND" IS A POINTED BRUSH USED FOR DETAIL WORK. "FLAT" BRUSHES ARE USED TO APPLY BROAD SWATHS OF COLOR. "BRIGHT" IS A FLAT BRUSH WITH SHORTER BRUSH HAIRS. "FILBERT" IS A FLAT BRUSH WITH ROUNDED CORNERS. "EGBERT" IS A VERY LONG, AND RARE, FILBERT BRUSH. THE ARTIST MIGHT ALSO APPLY PAINT WITH A PALETTE KNIFE, WHICH IS A FLAT METAL BLADE. A PALETTE KNIFE MAY ALSO BE USED TO REMOVE PAINT FROM THE CANVAS WHEN NECESSARY. A VARIETY OF UNCONVENTIONAL TOOLS, SUCH AS RAGS, SPONGES, AND COTTON SWABS, MAY BE USED TO APPLY OR REMOVE PAINT. SOME ARTISTS EVEN PAINT WITH THEIR FINGERS.

DRIERS OR SICCATIVES

DRYING OIL

A DRYING OIL IS AN OIL THAT HARDENS TO A TOUGH, SOLID FILM AFTER A PERIOD OF EXPOSURE TO AIR. THE OIL HARDENS THROUGH A CHEMICAL REACTION IN WHICH THE COMPONENTS CROSSLINK (AND HENCE, POLYMERIZE) BY THE ACTION OF OXYGEN (NOT THROUGH THE EVAPORATION OF WATER OR OTHER SOLVENTS). DRYING OILS ARE A KEY COMPONENT OF OIL PAINT AND SOME VARNISHES. SOME COMMONLY USED DRYING OILS INCLUDE LINSEED OIL, TUNG OIL, POPPY SEED OIL, PERILLA OIL, AND WALNUT OIL.

THEIR USE HAS DECLINED OVER THE PAST SEVERAL DECADES, AS THEY HAVE BEEN REPLACED BY ALKYD RESINS AND OTHER BINDERS. SINCE OXIDATION IS THE KEY TO CURING IN THESE OILS, THOSE THAT ARE SUSCEPTIBLE TO CHEMICAL DRYING ARE OFTEN UNSUITABLE FOR COOKING, AND ARE ALSO HIGHLY SUSCEPTIBLE TO BECOMING RANCID THROUGH AUTOXIDATION, THE PROCESS BY WHICH FATTY FOODS DEVELOP OFF-FLAVORS. RAGS, CLOTH, AND PAPER SATURATED WITH DRYING OILS MAY COMBUST SPONTANEOUSLY (IGNITE) AFTER A FEW HOURS AS HEAT IS RELEASED DURING THE OXIDATION PROCESS.

SICCATIVES

AN OIL DRYING AGENT, ALSO KNOWN AS SICCATIVE, IS A COORDINATION COMPOUND THAT ACCELERATES (CATALYZES) THE HARDENING OF DRYING OILS, OFTEN AS THEY ARE USED IN OIL-BASED PAINTS. THIS SO-CALLED "DRYING" (ACTUALLY A CHEMICAL REACTION THAT PRODUCES AN ORGANIC PLASTIC) OCCURS THROUGH FREE-RADICAL CHEMICAL CROSSLINKING OF THE OILS. THE CATALYSTS PROMOTE THIS FREE-RADICAL AUTOXIDATION OF TYPICAL OIL DRYING AGENTS ARE DERIVED FROM IONS OF COBALT, MANGANESE, AND IRON, PREPARED AS "SALTS" OF LIPOPHILIC CARBOXYLIC ACIDS SUCH AS NAPHTHENIC ACIDS, IN ORDER TO GIVE THEM A SOAP-LIKE CHEMICAL FORMULA AND MAKE THEM OIL-SOLUBLE.

DRIERS, OR SICCATIVES, ARE USUALLY METALLIC SALTS THAT ARE COMBINED WITH OILS OR RESINS AND THEN MIXED INTO THE PAINT AND/OR MEDIUM AND/OR VARNISH TO ACCELERATE THE DRYING TIME BY SPEEDING THE RATE OF OXIDATION AND POLYMERIZATION. BUT IT IS IMPORTANT TO REMEMBER THAT DRIERS DIMINISH THE LIFE OF THE PAINT OR VARNISH. WITH GOOD JUDGMENT AND EXPERIENCE, HOWEVER, THEY CAN BE USED SAFELY. THE FOLLOWING GUIDELINES MAY PROVE HELPFUL.

1. USE A DRIER ONLY IN GLAZES OR IN THINLY PAINTED PICTURES.
2. NEVER USE MORE THAN 3 PERCENT CONCENTRATE TO MEDIA CONSISTING PRIMARILY OF A DRYING OIL, AND 6 PERCENT TO OIL-RESIN MEDIA COMBINATIONS.
3. NEVER APPLY A FASTER-DRYING PAINT FILM OVER A WET, SLOWER-DRYING PAINT FILM.
4. TEST A DRIER BEFORE USE ON SOMETHING OTHER THAN YOUR FINAL PICTURE.



LINSEED OIL

LINSEED OIL IS MADE FROM THE SEEDS OF THE FLAX PLANT. IT ADDS GLOSS AND TRANSPARENCY TO PAINTS AND IS AVAILABLE IN SEVERAL FORMS. IT DRIES VERY THOROUGHLY, MAKING IT IDEAL FOR UNDERPAINTING AND INITIAL LAYERS IN A PAINTING. REFINED LINSEED OIL IS A POPULAR, ALL-PURPOSE, PALE TO LIGHT YELLOW OIL WHICH DRIES WITHIN THREE TO FIVE DAYS. COLD-PRESSED LINSEED OIL DRIES SLIGHTLY FASTER THAN REFINED LINSEED OIL AND IS CONSIDERED TO BE THE BEST QUALITY LINSEED OIL.

STAND OIL IS A THICKER PROCESSED FORM OF LINSEED OIL, WITH A SLOWER DRYING TIME (ABOUT A WEEK TO BE DRY TO THE TOUCH, THOUGH IT'LL REMAIN TACKY FOR SOME TIME).

IT'S IDEAL FOR GLAZING (WHEN MIXED WITH A DILUENT OR SOLVENT SUCH AS TURPENTINE) AND PRODUCES A SMOOTH, ENAMEL-LIKE FINISH WITHOUT ANY VISIBLE BRUSH MARKS.

SUN-THICKENED LINSEED OIL IS A CREATED BY EXPOSING THE OIL TO THE SUN TO CREATE A THICK, SYRUPY, SOMEWHAT BLEACHED OIL, WITH SIMILAR BRUSHING QUALITIES TO STAND OIL.

POUR SOME OIL (ABOUT AN INCH) INTO A WIDE DISH, COVER IT WITH A PROPPED-UP LID (I.E. TO MINIMIZE DEBRIS GETTING IN, BUT SO THAT THE AIR CAN FLOW THROUGH). STIR EVERY DAY OR SO TO PREVENT A SKIN FROM FORMING ON THE TOP. HOW LONG IT TAKES FOR THE OIL TO THICKEN WILL DEPEND ON HOW HOT THE CLIMATE IS WHERE YOU LIVE.

TEST THE THICKNESS OF THE OIL WHEN IT'S COOL, NOT WHEN IT'S STILL HOT FROM THE DAY'S SUN. POUR IT THROUGH A SIEVE OR CLOTH TO REMOVE DEBRIS BEFORE YOU BOTTLE THE OIL.

AS LINSEED OIL HAS A TENDENCY TO YELLOW AS IT DRIES, AVOID USING IT IN WHITES, PALE COLORS, AND LIGHT BLUES (EXCEPT IN UNDERPAINTINGS OR LOWER LAYERS IN AN OIL PAINTING WHEN PAINTING WET ON DRY). STAND OIL AND SUN-THICKENED OIL YELLOWS VERY LITTLE.

SUN-BLEACHED LINSEED OIL IS CREATED BY EXPOSING THE OIL TO THE SUN BUT WITH THE CONTAINER'S LID ON, SO NO EVAPORATION OCCURS. THE RESULT IS AN OIL THAT HAS LESS TENDENCY TO YELLOW.

POPPYSEED OIL

POPPYSEED OIL IS A VERY PALE OIL, MORE TRANSPARENT AND LESS LIKELY TO YELLOW THAN LINSEED OIL, SO IT IS OFTEN USED FOR WHITES, PALE COLORS, AND BLUES. IT GIVES OIL PAINT A CONSISTENCY SIMILAR TO SOFT BUTTER. POPPYSEED OIL TAKES LONGER TO DRY THAN LINSEED OIL, FROM FIVE TO SEVEN DAYS, MAKING IT IDEAL FOR WORKING WET ON WET.

BECAUSE IT DRIES SLOWLY AND LESS THOROUGHLY, AVOID USING POPPYSEED OIL IN LOWER LAYERS OF A PAINTING WHEN WORKING WET ON DRY AND WHEN APPLYING PAINT THICKLY, AS THE PAINT WILL BE LIABLE TO CRACK WHEN IT FINALLY DRIES COMPLETELY. POPPY SEEDS NATURALLY CONTAIN ABOUT 50 PERCENT OIL.

SAFFLOWER OIL

SAFFLOWER OIL HAS THE SAME CHARACTERISTICS AS POPPYSEED OIL BUT DRIES A BIT FASTER. IT'S MADE FROM SAFFLOWER SEEDS. SUNFLOWER OIL ALSO HAS SIMILAR CHARACTERISTICS TO POPPYSEED OIL. IT'S MADE FROM SUNFLOWER SEEDS.

WALNUT OIL

WALNUT OIL IS A PALE YELLOW-BROWN OIL (WHEN NEWLY MADE IT'S A PALE OIL WITH A GREENISH TINGE) THAT HAS A DISTINCTIVE SMELL. AS IT'S A THIN OIL, IT'S USED TO MAKE OIL PAINT MORE FLUID. AS IT YELLOWS LESS THAN LINSEED OIL (BUT MORE THAN SAFFLOWER OIL) IT'S GOOD FOR PALE COLORS. WALNUT OIL DRIES IN FOUR OR FIVE DAYS

BOILED OILS

BOILED OILS ARE OILS THAT HAVE BEEN HEATED AND MIXED WITH A DRYER TO CREATE A FASTER-DRYING OIL THAT GIVES A GLOSSY FINISH. THEY TEND TO YELLOW AND DARKEN WITH AGE, SO ARE BEST LIMITED TO LOWER LAYERS IN A PAINTING AND DARKER COLORS. IF YOU'RE NOT SURE WHAT EFFECT AN OIL IS GOING TO HAVE, RATHER TAKE THE TIME TO DO A TEST THAN 'LOSE' OR 'DAMAGE' A WHOLE PAINTING.

A photograph of a white plate filled with various colorful sushi pieces, including nigiri and maki. The background is slightly blurred, showing a yellow container on the left. A large, bold, black text overlay reads "THANK YOU" across the center of the image.

THANK YOU