

COLLEGE OF ARCHITECTURE AND PLANNING, BOULDER CAMPUS
LIST OF APPROVED AND NON-APPROVED MODEL MAKING MATERIALS AND TECHNIQUES

SOLID MATERIALS	FLAM.	LOC.	SAFETY MEASURES	SAFETY MEASURES	COMMENTS AND TECHNIQUE LIMITATIONS
WOOD PRODUCTS					
# Wood	NF	2	H	A,B,C possibly D,E	check toxicity of species, you may have to use extra safety equipment
O Plywood	NF	2	NH	A,B,C	
# MDF	NF	2	H	A,B,C	always wear a dust mask, most brands off gas formaldehyde
O MDO	NF	2	NH	A,B,C	
# Particle Board	NF	2	H	A,B,C	always wear a dust mask, most brands off gas formaldehyde
O OSB	NF	2	NH	A,B,C	
O Recycled lumber	NF	2	NH	A,B,C	pre-approved materials only
O Card Board	NF	1,2	NH	A,B,C	safety equipment if machinery used
O Hard board	NF	2	NH	A,B,C	
O Core materials (Grid Core)	NF	1,2	NH	A,B,C	
O Veneers	NF	1,2	NH	A,B,C	safety equipment if machinery used, usually hand cut
METALS					
O Aluminum	NF	2	NH	A,C	thin material can be cut on model shop tools, thicker stock in wood shop only
O Copper	NF	2	NH	A,C	thin material can be cut on model shop tools, thicker stock in wood shop only
O Brass	NF	2	NH	A,C	thin material can be cut on model shop tools, thicker stock in wood shop only
O Lead	NF	2	NH	E	can be hammered, hand cut do not melt, wash hands, dispose of properly
O Steel or any ferrous metal	NF	2	NH	A,C	can be cut with hack-saw only, no grinding, no sanding on machines, no sparks
O Sheet metal	NF	2	NH	A,C,E	can be cut with hack-saw only, no grinding, no sanding on machines, no sparks
O Zinc	NF	2	NH	A,C	can be cut with hack-saw only, no grinding, no sanding on machines, no sparks
O Tin	NF	2	NH	A,C	can be cut with hack-saw only, no grinding, no sanding on machines, no sparks
O Gold leaf (water leaf)	NF	1	NH		Silver leaf is the same
# Gold leaf, (Dutch leaf)	F	2,3	NH	E	Silver leaf is the same
O Precious metals	NF	1,2	NH		must share with Lab Coordinator
PLASTICS					
# Acrylics (Plexiglas)	NF	2	H	A,B,C	cut with proper blade and technique, may heat to bend but no melting, glue in spray booth only
# Polycarbonates (Lexan)	NF	2	H	A,B,C	cut with proper blade and technique, may heat to bend but no melting, glue in spray booth only
# Phenolic-resin	NF	2	H	A,B,C	cut with proper blade and technique, may heat to bend but no melting, glue in spray booth only
# PVC	NF	2	H	A,B,C	cut with proper blade and technique, may heat to bend but no melting, glue in spray booth only
# PVA	NF	2	H	A,B,C	cut with proper blade and technique, may heat to bend but no melting, glue in spray booth only
# UHMW	NF	2	H	A,B,C	cut with proper blade and technique
O Melamine based products	NF	2	NH	A,B,C	Formica brand products, special blade and technique for cutting on table saw
O Polyethylene sheeting	NF	1,2	NH		plastic sheets in a roll
# Sintra	NF	2	H	A,B,C	cut with proper blade and technique, glue in spray booth only
O Corian	NF	2	NH	A,B,C	cut with proper blade and technique, glue in spray booth only

MODELING MATERIALS

O	Plaster of Paris	NF	2	NH	E	dispose of properly
O	Clay	NF	1	NH		dispose of properly
O	Concrete	NF	1	NH	E	dispose of properly
O	Plasticine	NF	1	NH		dispose of properly
O	Modeling Paste	NF	1	NH		dispose of properly
O	Geltrait, dental molds	NF	1	NH	E	dispose of properly
O	Wax	NF	1	NH		do not use open flame to sculpt; dispose of properly
O	Silicon Rubber	NF	1	NH	E	dispose of properly
O	Latex Rubber (Hydrocal)	NF	1	NH	E	dispose of properly
#	Body Filler (Bondo)	NF	3	H	D, E	spray booth only

FOAMS

#	Styrofoam	NF	1, 2	H	B	hand cut only, DO NOT USE A HOT WIRE!, DO NOT MELT!
#	Bead board	NF	1, 2	H	B	hand cut only, DO NOT USE A HOT WIRE!, DO NOT MELT!
#	Blue board	NF	1, 2	H	B	hand cut only, DO NOT USE A HOT WIRE!, DO NOT MELT!
#	Polyurethane foam sheet	NF	1, 2	H	B	hand cut only, DO NOT USE A HOT WIRE!, DO NOT MELT!
O	Gator board or foam core	NF	1	NH		do not burn

OFF THE WALL STUFF

O	Rubber	NF	1	NH		hand cut only, no machinery
O	Graphite powder	NF	1	NH	E	very fine powder, used for drawing
O	Felt	NF	1	NH		hand cut only, no machinery
O	Leather	NF	1	NH		hand cut only, no machinery
O	Fiberglass sheet (Shoji)	NF	1	NH	A,B,E	hand cut only, no machinery
O	Rockite	NF	1,2	NH	B	very fine dust when sanded, recommend this done in model shop only
O	Glass	NF	1	NH	A	hand cut only, no machinery, no etching unless pre-approved
O	Stone	NF	1	NH	A	hand cut only, no machinery

LIQUID MATERIALS

	FLAM.	LOC.	SAFETY	SAFETY MEASURES	COMMENTS AND TECHNIQUE LIMITATIONS
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PAINTS

O	Water based paints	NF	1,2,3	NH		includes water color, casein, acrylic, house paints, alkyds, water based enamels, dispose of properly
!	Oil based paints	F	3	H	E	includes artist oil, encaustic, house paints, oil based enamels (mineral spirit to clean up), dispose of properly
!	Spray paints	F	3	H	D,E	dispose of properly

SOLVENTS

!	Turpentine	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Paint thinner	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Kerosene	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Toluene	F	3	H	D,E	found in common formulas as a solvent, store in flammable liquid cabinet only, see MSDS
!	Xylene	F	3	H	D,E	found in common formulas as a solvent, store in flammable liquid cabinet only, see MSDS
!	VM&P Naphtha	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Denatured alcohol	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Acetone	VF	3	H	D,E	for cleaning and releasing super glue, store in flammable liquid cabinet only, see MSDS
#	trisodiumphosphate "TSP"	NF	3	H	A,E	for degreasing, see MSDS
!	Mineral Spirits	F	3	H	D,E	store in flammable liquid cabinet only, see MSDS
!	Lacquer thinner	VF	3	VH	D,E	store in flammable liquid cabinet only, see MSDS

FINISHES

!	Varnish, oil based	F	3	H	D,E	wipe on or brush on only, spray booth only, put used rags in oily rag can, dispose of properly, see MSDS
O	Varnish, water based	NF	2,3	NH	E	wipe on or brush on only, spray booth only, put used rags in oily rag can, dispose of properly, see MSDS
!	Oil finishes, e.g. Danish oil	F	3	H	D,E	wipe on or brush on only, spray booth only, put used rags in oily rag can, dispose of properly, see MSDS
#	Stains, oil based	F	3	NH	E	wipe on only, put used rags in oily rag can, dispose of properly, see MSDS
O	Stains, water based	NF	2,3	NH	E	wipe on only, put used rags in oily rag can, dispose of properly, see MSDS
!	Boiled Linseed oil	F	3	H	E	wipe on only, put used rags in oily rag can rags can spontaneously combust , dispose of properly, see MSDS
O	Natural oils	NF	2,3	NH	E	pure tung oil, pure linseed oil, mineral oil, put used rags in oily rag can, dispose of properly, see MSDS
O	Wax	NF	1,2,3	NH	E	put used rags in oily rag can, see MSDS
#	Shellac	F	2,3	NH	E	wipe or brush on only, no spraying, put used rags in oily rag can, dispose of properly, see MSDS
O	Dyes, water based	NF	1,2,3	NH	E	wipe or brush on only, no spraying, see MSDS
#	Dyes, alcohol based	F	2,3	NH	E	wipe or brush on only, no spraying, see MSDS
#	Dyes, oil based	F	3	NH	E	wipe or brush on only, no spraying, put used rags in oily rag can, dispose of properly, see MSDS
#	Stripper, dibasic esters "DBE"	NF	3	H	A,D,E	dispose of properly, see MSDS
#	Stripper, n-methyl-2-pyrrolidone"NMP"	NF	3	H	A,D,E	dispose of properly, see MSDS
#	Stripper, butyrolactone "BLO"	NF	3	H	A,D,E	dispose of properly, see MSDS
#	Pre stain conditioner	F	3	NH	E	put used rags in oily rag can, see MSDS
#	Laquer, water based	NF	3	H	D,E	dispose of properly, see MSDS
#	Sanding sealers	F	3	NH	D,E	check can to see what kind, i.e. shellac, varnish, lacquer, take appropriate precautions, see MSDS
#	Chlorine bleach	NF	3	H	A,D,E	check with Lab Manager first, see MSDS
#	2-part wood bleach	NF	3	H	A,D,E	check with Lab Manager first, see MSDS
#	Patination processes	NF	3	H	A,D,E	check with Lab Manager first, see MSDS
O	Polishing materials	NF	2,3	NH	A,E	where used and how depends on material, dispose of properly, see MSDS
#	Pore filler, water and oil based	F	3	NH	D,E	dispose of properly, see MSDS

GLUES

O	PVA glue, white or yellow	NF	1,2	NH		dispose of properly
O	Organic glues	NF	1,2	NH		includes, rice, wheat, fish, hide (traditional hot hide glue in shop only)
#	Rubber cement	NF	1,2,3	H		avoid prolonged exposure in unventilated rooms
O	Contact Cement, water based	NF	2,3	NH	E	read manufactures label, dispose of properly
!	Contact Cement, solvent based	F	3	H	A,D,E	read manufactures label, dispose of properly
#	Hot glue	F	1,2	NH		caution, do not leave hot gun unattended
O	2-part epoxy, 5-minute	NF	1,2	H	E	small batches are ok for studios
O	2-part epoxy, slow-set	NF	2,3	H	E	for prolonged exposure consider a respirator
O	Cyanoacrylates (super glues)	NF	1,2	H	E	small batches are ok for studio work
#	Super glue accelerators	NF	3	H	D,E	super glue accelerators are used in spray booth only with respirator
!	Spray glues and spray mounts	F	3	H	A,D,E	includes 3M 77, 3M 90, photo mounts, etc.
#	2-part urea formaldehyde	NF	2,3	H	D,E	mix in booth only can be used in wood shop only
O	Polyurethane	NF	2,3	NH	E	dispose of properly
#	Resorcinol-resin	NF	2,3	H	D,E	mix in booth only can be used in wood shop only

UNAUTHORIZED MATERIALS	FLAMMABILITY	SAFETY	COMMENTS AND RESTRICTIONS
SOLVENTS			
X MEK	VF	VH	not approved
X Methylene Chloride	NF	VH	known carcinogen, used in gluing plexiglass
X Benzene	VF	VH	not approved
X Hexane	VF	VH	not approved
X Gasoline	VF	H	not approved
X Acids	E	VH	<u>ANY</u> acid

FINISHES			
X Lacquer, Nitrocellulose	VF	H	no spraying high VOC materials allowed in facilities
X Lacquer, pre catalyzed, CAB	VF	VH	no spraying high VOC materials allowed in facilities
X Lacquer, Acrylic	VF	H	no spraying high VOC materials allowed in facilities
X Lacquer, Urethane	F	H	no spraying high VOC materials allowed in facilities
X Isocyanate	NF	VH	any finish or formula which contains this compound, carcinogen
X Crosslinked finish, Aziridine	NF	VH	no spraying high VOC materials allowed in facilities
X Vinyl	F	H	no spraying high VOC materials allowed in facilities
X Crosslinked finish, Polyester	F	VH	no spraying high VOC materials allowed in facilities
X Stripper with Methylene Chloride	NF	VH	very dangerous carcinogen
X PEG (polyethylene glycol)	NF	H	not approved
X Heavy duty pool bleaches	NF	VH	extremely caustic

MOLDING MATERIALS			
X Casting resin, 2-part	NF	VH	polyester or any other type that requires a catalyst or thermal reaction to set
X Fiberglass resin	NF	VH	caution, this is a thermoplastic, heavy out gassing
X Polyurethane foam for casting	NF	VH	caution, this is a thermoplastic, heavy out gassing
X 2-part polyurethane resins	NF	VH	caution, this is a thermoplastic, heavy out gassing

LEGEND:

COLOR CODE:	O	NON-HAZARDOUS AT LOW EXPOSURE LEVELS
	#	MODERATE HAZARD AT LOW EXPOSURE LEVEL, TAKE PRECAUTIONS
	!	HIGH HAZARD AT LOW EXPOSURE LEVELS, PROTECTIVE EQUIPMENT MANDATORY
	X	NOT AUTHORIZED UNDER ANY CIRCUMSTANCES

FLAMMABILITY:	NF	NON-FLAMMABLE
	F	FLAMMABLE
	VF	VERY FLAMMABLE
	E	EXPLOSIVE

SAFETY MEASURES:	A	EYE-PROTECTION
	B	DUST MASK
	C	EAR-PROTECTION
	D	RESPIRATOR
	E	GLOVES, SKIN-PROTECTION

LOCATION:	1	STUDIO
	2	WOOD SHOP
	3	SPRAY BOOTH

SAFETY:	NH	NON-HAZARDOUS
	H	HAZARDOUS
	VH	VERY-HAZARDOUS

DISCLAIMER: THIS IS AN EVOLVING LIST, NOT ALL INCLUSIVE. AS THE SCHOOL LEARNS MORE ABOUT PRODUCTS, EITHER THEIR SAFETY OR HAZARD, THIS LIST MIGHT CHANGE. ALWAYS REFER TO MSDS WHEN CONSIDERING USING A CHEMICAL OR A COMPOUND.