EXCERPTS FROM ASSESSORS' HANDBOOK SECTION 581 JANUARY 1, 2011 LIEN DATE

For Use by Participants of the Self-Paced Online Learning Session

Valuation of Personal Property and Fixtures Using Assessors' Handbook 581 (Equipment and Fixtures Index, Percent Good, and Valuation Factors)

To Perform Exercises at the end of Lessons within the Learning Session and completion of Examination by Appraisers seeking Appraisal Training Credit

ASSESSORS' HANDBOOK SECTION 581

EQUIPMENT AND FIXTURES INDEX, PERCENT GOOD AND VALUATION FACTORS

JANUARY 2011

(USE FOR LIEN DATE JANUARY 1, 2011)

CALIFORNIA STATE BOARD OF EQUALIZATION

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TABLE 1: COMMERCIAL EQUIPMENT INDEX FACTORS

2010 Cost = 100							
Year	Average						
2010	100						
2009	100						
2008	103						
2007	106						
2006	111						
2005	116						
2004	124						
2003	128						
2002	130						
2001	130						
2000	131						
1999	134						
1998	134						
1997	135						
1996	137						
1995 1994	139						
1994 1993	144						
1993	148 152						
1992	152 154						
1990	157						
1989	161						
1988	169						
1987	176						
1986	179						
1985	181						
1984	184						
1983	190						
1982	194						
1981	202						
1980	222						
1979	242						
1978	264						
1977	284						
1976	298						
1975	317						
1974	349						
1973	401						
1972	416						
1971	429						

TABLE 2: INDUSTRIAL MACHINERY AND EQUIPMENT INDEX FACTORS

2010 Cost = 100						
Year	Average					
2010	100					
2009	100					
2008	101					
2007	106					
2006	108					
2005	111					
2004	115					
2003	119					
2002	120					
2001	120					
2000	120					
1999	121					
1998	122					
1997	124					
1996	126					
1995 1994	128					
1994	132 135					
1993	137					
1992	139					
1990	143					
1989	148					
1988	155					
1987	161					
1986	164					
1985	166					
1984	170					
1983	174					
1982	178					
1981	187					
1980	206					
1979	230					
1978	254					
1977	276					
1976	296					
1975	314					
1974	365					
1973	430					
1972	448					
1971	460					

TABLE 3: AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS

2010 Cost = 100

2010 Cost = 100								
Year	Agricultural	Construction						
2010	100	100						
2009	102	100						
2008	105	103						
2007	110	106						
2006	113	109						
2005	116	113						
2004	122	120						
2003	126	125						
2002	128	126						
2001	130	128						
2000	132	128						
1999	133	130						
1998	135	131						
1997	136	134						
1996	138	137						
1995	142	140						
1994	148	143						
1993	152	145						
1992	157	148						
1991	161	152						
1990	167	157						
1989	172	163						
1988	180	171						
1987	185	175						
1986	186	179						
1985	187	181						
1984	188	184						
1983	194	187						
1982	203	191						
1981	219	205						
1980	244	227						
1979	272	256						
1978	296	282						
1977	319	307						
1976	345	330						
1975	375	355						
1974	439	431						
1973	501	502						
1972	517	522						
1971	537	539						

TABLE 4: MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS Individual Properties—Average Service Life—6.75 % Rate of Return

Year													VICE											Year
 	1 00	2	1	5	6	7	8	9	10	11	12	12	11	15	17	10	20	22	25	20	25	40	1 00	
Acqd 2010	Age 1	67	76		85				92				95										Age 1	Acqd 2010
2009	2		52	62					83														2	2009
2008	3	17				61			75														3	2008
2007	4	6	-	29	-	-			66														4	2007
2006	5	Ü	8						57														5	2006
2005	6		3	10					49														6	2005
2004	7		_	5	11	19			41														7	2004
2003	8			1	7	13			33											87			8	2003
2002	9				3	8			26														9	2002
2001	10					4	10		20														10	2001
2000	11					1	6	11	16	21	26	32	37	42	50	54	61	66	73	80	86	89	11	2000
1999	12						3	8	12	16	22	27	32	37	45	49	57	62	70	78	84	88	12	1999
1998	13							5	9	13	17	22	27	32	41	45	52	59	66	76	82	87	13	1998
1997	14							2	6	10	14	18	23	27	36	40	48	55	63	74	81	86	14	1997
1996	15								4	7	11	15	19	23	32	36	44	51	60	71	79	84	15	1996
1995	16								1	5	9	12	16	19	28	32	40	48	57	69	77	83	16	1995
1994	17									2	6	9	13	16	24	28	37	44	54	66	75	81	17	1994
1993	18										4	7	10	14	21	25	33	40	51	64	73	80	18	1993
1992	19										1	5	8	11	18	22	29	37	47	61	71	78	19	1992
1991	20											2	6	10	15	19	26	33	44	58	69	77	20	1991
1990	21												4	8			23						21	1990
1989	22												2	5	11		21						22	1989
1988	23													3	10		18						23	1988
1987	24													1	8		16						24	1987
1986	25														6	8				45			25	1986
1985	26														3	6				42			26	1985
1984	27														1	5	11			40			27	1984
1983	28															2	9			37			28	1983
1982	29															1	7			34			29	1982
1981	30																5			32			30	1981
1980	31																3			30			31	1980
1979	32																2			28			32	1979
1978	33																	5		26			33	1978
1977	34																	3		24			34	1977
1976	35																	2		22			35	1976
1975	36																			21			36	1975
1974	37																		7		31		37	1974
1973	38																		5		29		38	1973
1972	39																			16			39	1972
1971	40																		2	15	26	38	40	1971

No Minimum Percent Good Intended

Table 5: Construction Mobile Equipment Percent Good Factors

		CONSTRUCTION MOBILE EQUIPMENT				
Year Acquired	Age	New	Used	Average		
2010	1	74	91	83		
2009	2	66	81	74		
2008	3	60	74	67		
2007	4	55	68	62		
2006	5	51	62	57		
2005	6	47	58	53		
2004	7	42	52	47		
2003	8	38	47	43		
2002	9	35	43	39		
2001	10	31	38	35		
2000	11	28	34	31		
1999	12	26	32	29		
1998	13	24	29	27		
1997	14	22	27	25		
1996	15	20	25	23		
1995	16	19	23	21		
1994	17	16	20	18		
1993	18	13	17	15		
1992	19	12	13	13		
1991	20	11	11	11		
1990	21		9			

No Minimum Percent Good Intended

Table 6: Agricultural Mobile Equipment Percent Good Factors

		AGRICULTURAL MOBILE EQUIPMENT						
Year		EXCE	PT HARVI	ESTERS	E	IARVESTEI	RS	
Acquired	Age	New	Used	Average	New	Used	Average	Age
2010	1	78	92	85	74	90	82	1
2009	2	70	82	76	64	78	71	2
2008	3	64	75	70	57	69	63	3
2007	4	58	68	63	50	60	55	4
2006	5	52	62	57	43	53	48	5
2005	6	47	56	52	38	46	42	6
2004	7	42	50	46	33	40	37	7
2003	8	38	45	42	29	35	32	8
2002	9	34	40	37	25	30	28	9
2001	10	30	36	33	21	26	24	10
2000	11	27	32	30	19	23	21	11
1999	12	25	30	28	17	21	19	12
1998	13	23	28	26	15	18	17	13
1997	14	22	26	24		16		14
1996	15	20	23	22		14		15
1995	16	18	21	20		14		16
1994	17		19					17
1993	18		17					18
1992	19							19

No Minimum Percent Good Intended

Exhibit 3.A.: Non-Production Computers Classification Guidelines

PERSONAL COMPUTERS	LOCAL AREA NETWORK EQUIPMENT
(Schedule A, column 5a)	(Schedule A, column 5b)
Desktops	External Storage Devices
Docking Stations	Hubs
Ink Jet Printers	Mainframes
Laptops	Network Attached Storage Devices
Laser Printers	Routers
Mini Towers	Servers
Monitors	Switches
Netbooks	
Notebooks	LAN Components, including but not limited to:
PC Power Supply	Network Disk & Tape Drives
Scanners	Network Fan Trays
Workstations	Network Memory
	Portable Storage Devices
	Network Power Supply
Does not include Multi-Functional Printers	Network Adaptors
	Network Interface Cards
	Network Processors

Table 7: Non-Production Computer Valuation Factors

Year Acquired	Age	PERSONAL COMPUTERS	LOCAL AREA NETWORK EQUIPMENT (PLUS MAINFRAME COMPUTERS)
2010	1	54	73
2009	2	39	47
2008	3	24	30
2007	4	15	19
2006	5	10	12
2005	6	6	8
2004	7	4	5
2003	8	2	3
2002	9	2	2

Pursuant to Revenue and Taxation Code section 401.20, values determined by use of the valuation factors contained in Table 7 are rebuttably presumed to be the full cash value for non-production computer equipment. A county assessor or taxpayer has the right to present evidence supporting values different from those determined by use of Table 7 in order to attempt to overcome the presumption.

SEMICONDUCTOR MANUFACTURING EQUIPMENT AND FIXTURES VALUATION FACTORS

The Semiconductor Manufacturing Equipment and Fixture Valuation table (Table 8) was adopted by the Board on October 1, 2008 (effective as of the lien date January 1, 2009). Similar to the computer valuation factors, the semiconductor manufacturing equipment and fixture valuation factors are intended to be applied directly to historical costs.

The semiconductor machinery and equipment valuation factors are based on a 6-year economic life *untrended*. A minimum valuation factor of 8 percent applies to machinery and equipment. The semiconductor fixtures valuation factors are based on a 10-year economic life *trended*. A minimum percent good factor of 10 percent applies to the fixtures. The valuation factors include the minimum percent good and the trending.

DEFINITION

Semiconductor manufacturing equipment consists of (1) manufacturing equipment used in a clean room for the fabrication of semiconductor chips; (2) test equipment used in the manufacturing and research and development environment and to test semiconductor manufacturing equipment; and (3) fixtures in place to support a semiconductor fabrication facility. This definition is not limited by the size of a semiconductor facility or the technology of the chips produced.

CLASSIFICATION — SEMICONDUCTOR MANUFACTURING EQUIPMENT AND FIXTURES

Following is a list to serve as guidance in classifying machinery and equipment and fixtures in the semiconductor industry. Machinery and equipment should be reported on Schedule A-1 of the business property statement (BOE-571-L); fixtures should be reported on Schedule B-2.

Fixturization from the clean room or service bay wall or floor that is directly related to the installation of machinery and equipment should also be reported on Schedule A-1 and valued in the same manner as the machinery and equipment.

Exhibit 3.B.: Semiconductor Manufacturing Equipment and Fixtures Classification Guidelines

Machinery and Equipment (A-1)

Annealing Equipment

Annealing Furnace

Asher, Dry Resist Removal

Atmospheric Pressure Chemical Vapor Deposition

(APCVD)

Baking

Chemical Mechanical Planarization Equipment

Post CMP Clean Tool Wafer Marking

Mark Reader

Back Grinder

Bump Plating

Tape Sticker/Peeler

Backside Etcher

Coater (Spin, Spray, Extrusion)

Columnated Sputtering

Compound Semiconductor Epitaxial Equipment

Contact Aligner

Developer

Diffusion Furnace

Dry Residue Removal

Drying Equipment (Spin Dryer, Spin Rinse Dryer)

(SRD)

E-Beam Direct Write

EUV

Edge Bead Removal System

Electroplating (ECD) Equipment

Gas Etching

Hardening System, Resist Stabilizing Equipment

High Current

High Density Plasma Chemical Vapor Deposition

(HDPCVD)

High Energy and Plasma Immersion

High Pressure Jet Cleaner

Holographic Mask Aligner, and Other Exposure Tools for Device Production Mask Aligner

IPA Dryer

Ion Beam Etching

Ion Beam Milling

Ion Milling

Ionized Sputtering

Laser Annealer

Long Throw Sputtering

Low Pressure Chemical Vapor Deposition (LPCVD)

Magnetically Enhanced (RIE)

Measuring and Analytical Instrumentation

AUGER

EPMA

ESCA

Failure Analysis Equipment (E-beam, Laser,

FIBS, Atomic Force)

IR Life-time Measurement

Film Thickness Monitoring

Liquid/Gas/Air/Dust Counter

Particle Inspection

Reflection Measuring

Spectrophotometer

Medium Current

Megasonic and Ultrasonic Cleaning System

Metal Organic Chemical Vapor Deposition

(MOCVD) Oxidation Furnace

Metal Organic Vapor Phase Epitaxy (MOVPE)

Molecular Beam Epitaxy (MBE)

Plasma Enhanced Chemical Vapor Deposition

(PECVD)

Plasma Etching

Plasma Stripper

Processing Equipment

Projection Aligner

Projection Exposure System

Proximity Aligner

Rapid Thermal

Reactive Ion Etch (RIE)

Resist Development Analyzer

Resist Processing Tools for Device Production

Resist Stabilizing Equipment

SCALPEL

Silicon Epitaxial Growing Equipment

Spin-On Deposition Tools

Spin Processor, Wafer (Photoresist) Track Step-and-

Scan

Sputter Etching

Stepping Projection Aligner

Supercritical Cleaning System

Surface Tension Dryer

Synchrotron Radiation (SR) Aligner

UV Photoresist Curing

Vacuum Evaporation Equipment (Aluminum and

Gold Evaporators)Wafer Brush/Scrubber

Wafer Peripheral Exposure Equipment

Wet Bench (Immersion, Spray, Recirculators), Sink

Wet Etching Equipment

Wet Spin Etcher

X-ray Aligner

X-Ray Stepper

Fixtures (B-2)

Acid Neutralization System

Air Filtration System, HEPA Filters

Air Handlers

Air Recirculation Fans Central Utility Building (CUB) for the Process

Bulk Chemicals, Storage and Delivery System

Bulk Gas, Storage and Delivery Systems

Chillers

Clean room HVAC Support system

Compressed Air Systems

Deionized Water Tanks and Piping

Electrical Substations

Gas and Chemical Vaults
Gas Monitoring System

Liquid Waste, Storage and Treatment System

Nitrogen and Oxygen Lines

Process Cooling Tower

Process Cooling Water

Scrubbers (Fume Scrubbers)

Sodium Hydroxide Storage Tanks

Specialty Gases, Storage and Delivery System

Storage Bunkers for Corrosives, Flammables, and

Solvents

Sulfuric Acid Storage Tanks

Water Purification System

Table 8: Semiconductor Manufacturing Equipment & Fixtures Valuation Factors

Year Acquired	Age	MACHINERY AND EQUIPMENT VALUATION FACTORS (Report on Schedule A-1)	FIXTURES VALUATION FACTORS (Report on Schedule B-2)
2010	1	78	92
2009	2	61	83
2008	3	46	75
2007	4	34	70
2006	5	25	62
2005	6	18	54
2004	7	12	47
2003	8	8	39
2002	9		31
2001	10		24
2000	11		19
1999	12		14
1998	13		12
1997	14		12
1996	15		12
1995	16		12
1994	17		12

Pursuant to Revenue and Taxation Code section 401.20, values determined by use of the valuation factors contained in Table 8 are rebuttably presumed to be the full cash value for semiconductor manufacturing equipment and fixtures. A county assessor or taxpayer has the right to present evidence supporting values different from those determined by use of Table 8 in order to attempt to overcome the presumption.

BIOPHARMACEUTICAL INDUSTRY EQUIPMENT AND FIXTURES VALUATION FACTORS

The *Biopharmaceutical Industry Equipment and Fixtures Valuation* table (Table 9) was adopted by the Board in July 2008 (effective as of the lien date January 1, 2009). These factors are intended to be applied directly to the historical costs of property for each category.

DEFINITION

Biopharmaceutical Industry Equipment and Fixtures consist of equipment and fixtures utilized in connection with, or in support of, research and/or manufacturing activities that use organisms, or materials derived from organisms, their cellular, subcellular, or molecular components, to discover and/or provide products for human or animal therapeutics, diagnostics, and/or vaccines.

CLASSIFICATION — BIOPHARMACEUTICAL INDUSTRY EQUIPMENT AND FIXTURES

Following is a sample listing of the equipment and fixtures included in these schedules and categories. Other types of equipment (office equipment, computers, etc.) should be valued using the index factors and percent good factors or the valuation factors presented in the remainder of the handbook as appropriate.

Exhibit 3.C.: Biopharmaceutical Industry Equipment and Fixtures Classification Guidelines

Cell Fusion Devices

Cell Sorting Instruments – FACS Chemstations – computer controlled

Cryostats

Chromatography – Desktop Cytometry Instruments

DNA Sequencers and Analyzers

DNA Synthesizers and Purifiers

Electrolyte Analyzers

Electron Scanning Microscopes Electrophoresis – Gas or Liquid

Mass Spectrometers – NMR, FTIR, AA, MALDI

Molecular Imaging Equipment

Particle Counters and Analyzers

Peptide Synthesizers and Sequencers

Protein Synthesizers

Scintillation Counters

Spectrometers

Spectrophotometers

Thermal Analysis Instruments

Viscometers

X-Ray Diffratometers

Other unspecified equipment that is similar in character, scale, and technology

Machinery and Equipment (A-1) Lab Equipment

General Laboratory Equipment

Analytical Balances Incubators **Anesthetic Machines** Liquid Samplers **Animal Cages** Micromanipulators Microscopes Autoclaves Autosamplers Microtomes

Bacteria Identification Systems **Optical Scanning Detectors** Cameras used in research Organic Synthesizers Centrifuges (and rotors) Osmometers

Chart Recorders Ovens **Conductivity Monitors** pH Analyzers Control Valves (laboratory scale) **Pipettes**

Densitometers Pumps (laboratory scale) **Radiation Monitors Digital Counters**

Evaporator Reactor Vessels (<100 liters) Fermentors (< 100 liters) Refrigerators and Freezers Fume Hoods (portable) Sample Handling Equipment

Glass Handling Equipment Samplers Shakers Glassware Washers Glucose Analyzers Sterilizers Ice Machines Stirrers

Imaging Equipment Ultrasonic Cleaning Systems

Waterbaths

Other Equipment (A-3) Commercial Manufacturing Equipment

Commercial Scale Stainless Steel Tanks Air Sampler

Clean Room Monitor and Vessels

Commercial Scale Agitator Custom Roller Bottle Apparatus

Commercial Scale Control Devices **Equipment Skids**

Filter Housings, Stainless Steel Commercial Scale Fermentation Tanks

and Controls

Floor Scale Commercial Scale Glycol System Flow Meter

Commercial Scale Mix Tanks, Piping and tubing between Production Vessels

Stainless Steel Roller Bottle Machine Capper Commercial Scale Mixers Roller Bottle Machine Unit

Commercial Scale Pumps Roller Racks

Commercial Scale Purification Vessels Sanitary Valves (personal property)

and Devices WFI Water Still

Commercial Scale RO Water Unit Other Commercial Scale Control Devices

and System Other Commercial Scale Tanks, Vessels, and Devices

Tools, Molds, Dies, Jigs (A-4) Pilot Scale Manufacturing Equipment Mobile Pilot Plants Pilot Scale Fermentation Control Pilot Scale Mixers Pilot Scale Mixers Pilot Scale Pumps and Hose Apparatus Pilot Scale Purification Vessels and Devices Individual components aggregated into pilot scale manufacturing equipment systems

Fixtures (B-2) Fixtures and Process Piping							
Benches and Counters, Built-in Cabinets, Built-in Casework, Metal Casework, Wood Clean In Place Equipment Clean Room Air Ducts/Handlers Clean Room Filter Units Clean Room Fixtures, not specified Clean Room Special Floor Surfaces	HVAC systems and ductwork unique to process Individual components aggregated into fixtures Piping and plumbing related to process RO, DI, WFI Water Piping Safety Stations and First Aid Cabinets Clean Room Special Wall Surfaces Steam supply unique to process Walk-in freezers and refrigerator units Wall Cases, Built-in						
Cleanrooms Electric supply systems unique to process Emergency Generators (for process) Feedwater System Fiber optic communication systems (for process) Fume Hoods (built-in)	Waste disposal equipment unique to process Water supply systems unique to process (WFI) Water, electric, and gas hook-ups to lab stations Other items meeting the definition of a fixture as specified in Property Tax Rule 122.5						

Table 9: Biopharmaceutical Industry Equipment & Fixtures Valuation Factors

		\$	SCHEDULE B		
Year Acquired	Age	Machinery & Equipment	Other Equipment	Tools, Molds, Dies, Jigs	Fixtures
		(A-1)	(A-3)	(A-4)	(B-2)
2010	1	85	92	89	92
2009	2	69	83	78	83
2008	3	55	76	68	76
2007	4	42	70	59	70
2006	5	30	62	49	62
2005	6	20	54	39	54
2004	7	13	46	30	46
2003	8	12	39	23	39
2002	9	12	31	16	31
2001	10	12	24	12	24
2000	11	12	18	12	18
1999	12	12	13	12	13
Prior	Prior Years	12	12	12	12

Pursuant to Revenue and Taxation Code section 401.20, values determined by use of the valuation factors contained in Table 9 are rebuttably presumed to be the full cash value for biopharmaceutical industry equipment and fixtures. A county assessor or taxpayer has the right to present evidence supporting values different from those determined by use of Table 9 in order to attempt to overcome the presumption.

DOCUMENT PROCESSOR VALUATION FACTORS

The *Document Processor Valuation* table (Table 10) was adopted by the Board in December 2009 (effective as of the lien date January 1, 2010). These factors are intended to be applied directly to the historical costs. A 10 percent minimum valuation factor applies to devices beyond age 8.

DEFINITION

Document processors consist of analog "light-lens" devices, as well as digital devices, which contain a document scanning system and a print controller. These include stand-alone copiers, and multifunction products (MFPs) that are capable of copying, scanning, printing, and faxing.

Table 10: Document Processor Valuation Factors

Year Acquired	Age	Document Processors
2010	1	58
2009	2	47
2008	3	32
2007	4	28
2006	5	23
2005	6	19
2004	7	15
2003	8	13
2002	9	10
2001	10	10
Prior	Prior Years	10

OFFSET LITHOGRAPHIC PRINTING PRESSES VALUATION FACTORS

The Offset Lithographic Printing Presses Valuation table (Table 11) was adopted by the Board in December 2009 (effective as of the lien date January 1, 2010). These factors are intended to be applied directly to the historical costs. A 10 percent minimum valuation factor applies to devices beyond age 13.

DEFINITION

Offset lithography is a printing process in which the image area and the non-image area co-exist on the same plane, rather than raised (in the letterpress process) or etched (in the gravure process). The two basic varieties of offset lithography are sheet fed offset lithography and web offset lithography. The valuation factors are intended to be applied to sheet fed offset lithography printing presses.

The offset lithographic printing unit has three principal cylinders: a *plate cylinder*, to which the inked image on a plate is attached, a *blanket cylinder*, to which the offset blanket is attached, and an *impression cylinder*, which carries the paper through the printing unit and provides a solid surface against which the offset blanket can impress the image on the paper or other surface.

The valuation factors are not intended to be applied to plateless or non-impact printing presses (i.e., digital printing or quick printing) or web fed (continuous fed) printing presses. Additionally, the valuation factors are not intended to be applied to other equipment used in print production, such as "prepress" equipment (used to transform an original into a state that is ready for reproduction for printing) and "postpress" equipment (equipment used to finish or bind the printed material).

TABLE 11: Offset Lithographic Printing Presses Valuation Factors

Year Acquired	Age	Offset Lithographic Printing Presses
2010	1	91
2009	2	82
2008	3	74
2007	4	66
2006	5	58
2005	6	50
2004	7	43
2003	8	37
2002	9	31
2001	10	23
2000	11	20
1999	12	17
1998	13	13
Prior	Prior Years	10