

APPROVED MATERIALS

Equipment

Comment **No acids or bases**

1165 Solvent Wetbench

6061 Aluminum
Acetone
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
AZ Developer 1:1
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Developer AZ 327 MIF
Developer AZ 400K
Developer AZ 400K diluted 4:1
Developer AZ 726 MIF
Developer AZ 917 MIF
Developer AZ(R) 300 MIF
Developer MF-24A
Developer MF-26A
Developer MF-319
Developer MF-321
Developer PPD-450
Developer Shipley BPR
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
E-beam Resist ZEP
Ethyl Lactate
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)

APPROVED MATERIALS

Equipment

Comment **No acids or bases**

1165 Solvent Wetbench

Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
Lithium Niobate (substrate)
ma-D 500 Series Developer
ma-N 2400 Series Negative Photoresist
Manganese
Methanol
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
PGMI SF Series Resists
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series

APPROVED MATERIALS

Equipment

Comment **No acids or bases**

1165 Solvent Wetbench

Photoresist remover 1165
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist XR-1541 E-Beam Resist in MIBK
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polyester PET (Transparency) Film
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
ProTek PSB Patterned Si Etch Coating
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Scotch tape 3M
Scotch Tape 3M (double sided)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
TechniStrip Ni555
Teflon - thin film
Titanium
Titanium Nitride
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
UVN 2300-0.5 Negative DUV Photoresist
Yttrium

APPROVED MATERIALS

Equipment

Comment **No acids or bases**

1165 Solvent Wetbench

Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment

Comment **No acids & bases**
No photoresists

70 PECVD

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum oxide
Ammonia/Inert gas mixture
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Lithium Niobate (substrate)
Molybdenum
Nickel
Nickel-Chromium
Niobium
Nitrogen
Nitrous oxide
Palladium
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silane 2% in N₂
Silicon
Silicon dioxide
Silicon nitride

APPROVED MATERIALS

Equipment

Comment **No acids & bases**
No photoresists

70 PECVD

Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Strontium Titanate SrTiO3
Tantalum
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi2)
Zinc oxide
Zirconium Silicide (ZrSi2)

APPROVED MATERIALS

Equipment

Comment **No III-V materials**
No metals

70 RIE Oxide Etch

Doped Silicon (As, B, Ge, Ga, P, Sb)
Fomblin®
Fused Silica (amorphous quartz) Substrate
Germanium
Halocarbon 14 (CF₄)
Halocarbon 23 (CHF₃)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Nitrogen
Oxygen
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon nitride
Silicon-germanium (substrate or film)
Sulfur hexafluoride
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)

APPROVED MATERIALS

Equipment
Comment

770 ECR, III-V Semi Etch

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Argon
Boron A Boron Spin-on Dopant
Boron trichloride
Carbon (diamond & graphite)
Chlorine
Chromium
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fomblin®
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Gold
Graphene
Halocarbon 14 (CF₄)
Hydrogen
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lithium Niobate (substrate)
ma-N 2400 Series Negative Photoresist
Methane
Molybdenum
Nitrogen
Oxygen
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620

APPROVED MATERIALS

Equipment
Comment

770 ECR, III-V Semi Etch

Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
Quartz (pure SiO₂, not glass)
Santovac 5 Polyphenyl Ether Lubricant
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Spin-on Glass 700F (undoped)
Sulfur hexafluoride
Titanium
Tungsten Carbide
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment

Comment **No SU-8**

770 ICP Metal Etch

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Argon
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Boron trichloride
Carbon (diamond & graphite)
Chlorine
Chromium
Cool Grease 7016
Copper
Cyclic Olefin Copolymer (substrate film)
Diffusion pump fluid Santovac 5
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-beam Resist ZEP
Fomblin®
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Graphene
Halocarbon 14 (CF₄)
Halocarbon 23 (CHF₃)
Helium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
KL1600 Series Photoresist
KL5300 Series Photoresist
Magnesium Oxide Single Crystal
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide
Nickel

APPROVED MATERIALS

Equipment

Comment **No SU-8**

770 ICP Metal Etch

Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Oxygen
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide HD-8820 (baked or cured)
Quartz (pure SiO₂, not glass)
Santovac 5 Polyphenyl Ether Lubricant
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Sulfur hexafluoride

APPROVED MATERIALS

Equipment

Comment **No SU-8**

770 ICP Metal Etch

Tantalum

Titanium

Titanium Nitride

Titanium oxide

Tungsten Carbide

Tungsten Silicide (WSi₂)

Tungsten Sulfide

UVN 2300-0.5 Negative DUV Photoresist

Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment Comment

790-2 ICP Plasma Etch

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Ferrite BiFeO₃
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Cobalt
Copper
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
E-beam Resist ZEP
Fomblin®
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Halocarbon 14 (CF₄)
Halocarbon 23 (CHF₃)
Halocarbon C318
Helium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)

APPROVED MATERIALS

Equipment
Comment

790-2 ICP Plasma Etch

KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Niobate (substrate)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nichrome Etchant
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Oxygen
Palladium
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 Series
Platinum
PMMA (solid piece)
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)

APPROVED MATERIALS

Equipment
Comment

790-2 ICP Plasma Etch

Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide HD-8820 (baked or cured)
PVDF PolyVinylidene Fluoride
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Sulfur hexafluoride
Tantalum
Teflon - thin film
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Yttrium Oxide
Zinc oxide
Zirconium
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment

Comment **No KOH or KI etchants**
No bases
No solvents
No SU8

Aluminum Etchant Wetbench

Acetic acid
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Etchant Type A
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Ammonium hydroxide
Ammonium Persulfate 20%
Ammonium Phosphate
Barium Fluoride substrate (BaF₂)
Calcium Fluoride (CaF₂) substrate
Carbon (crucibles)
Carbon (diamond & graphite)
Chromium Etchant CR-7
Chromium
Chromium Etchant 1020
Chromium Etchant CEP-200
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Copper
Copper Etchant APS-100
Cyclic Olefin Copolymer (substrate film)
Defreckling aluminum etch
Doped Silicon (As, B, Ge, Ga, P, Sb)
Ferric Chloride
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Gold
Gold-Tin Die Attach
Graphene
Hydrogen peroxide
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)

APPROVED MATERIALS

Equipment

Comment **No KOH or KI etchants**
No bases
No solvents
No SU8

Aluminum Etchant Wetbench

KL1600 Series Photoresist
KL5300 Series Photoresist
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Molybdenum Sulfide
Nichrome Etchant
Nichrome Etchant TFN
Niobium
Nitric acid
Phosphoric acid
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Polycarbonate
Polyester PET (Transparency) Film
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Tantalum Nitride
Teflon - thin film
Titanium
Titanium Nitride
Transetch N
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment

Comment **No KOH or KI etchants**
No bases
No solvents
No SU8

Aluminum Etchant Wetbench

Yttrium

Zirconium Oxide (ZrO₂)

Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Angstrom E-beam Evaporation

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum oxide
Argon
Carbon (crucibles)
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
KL1600 Series Photoresist
KL5300 Series Photoresist
Krypton
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020

APPROVED MATERIALS

Equipment
Comment

Angstrom E-beam Evaporation

Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist STR 1045
Platinum
PMMA (solid piece)
Polycarbonate
Polyester PET (Transparency) Film
Polyimide Film Tape 5413 (3M)
Quartz (pure SiO₂, not glass)
Silicon
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Stainless Steel
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Titanium
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
Xenon

APPROVED MATERIALS

Equipment

Comment **Only PR, Si, SiO₂, and Si₃N₄ are allowed in the recirculation baths.**

BOE/HF Wetbench

Aluminum fluoride
Aluminum oxide
Ammonium fluoride
Buffered Oxide Etchants (BOE)
Carbon (diamond & graphite)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Hydrofluoric acid, 49%
Hydrofluoric acid, 49% Action Technologies etchant
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
PMMA 495
PMMA 950
PMMA w/terminal_OH
Quartz (pure SiO₂, not glass)
Sapphire (not baths, only beakers)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-germanium (substrate or film)
Teflon - thin film
Titanium
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment
Comment

Canon 3-inch Contact Aligner

Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Graphene
Iron-Chrome Alloy (Fe-Cr)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 505A
Photoresist SPR 955
Photoresist stripper AZ 300T
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
Polyester PET (Transparency) Film
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon nitride
Silicon-germanium (substrate or film)
Spin-on Glass 700F (undoped)
Teflon - thin film
Titanium Nitride
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment
Comment

Classroom Aluminum Anneal Tube

Aluminum
Boron A Boron Spin-on Dopant
Doped Silicon (As, B, Ge, Ga, P, Sb)
Hydrogen mixture (5%H₂ in N₂)
Nitrogen
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon nitride
Silicon-germanium (substrate or film)
Spin-on Glass 700F (undoped)
Tungsten Silicide (WSi₂)

APPROVED MATERIALS

Equipment
Comment

Classroom Wet/Dry Oxidation Tube

Doped Silicon (As, B, Ge, Ga, P, Sb)

Oxygen

Quartz (pure SiO₂, not glass)

Silicon

Silicon dioxide

Silicon monoxide

Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Cooke Polymer Vacuum Anneal Oven

6061 Aluminum
ADEX Series TDFS (SU8 Laminate)
Al₂O₃ (sapphire substrate)
Aluminum Nitride
Apiezon Wax W
Circuit Board laminate Ultralam 38XX
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium-arsenide (substrate)
Germanium
Gold
Gold-Tin Die Attach
Graphene
Indium
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Molybdenum Sulfide
Niobium
Organosilicate Glass (already coated)
Palladium
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Platinum
PMMA 495

APPROVED MATERIALS

Equipment
Comment

Cooke Polymer Vacuum Anneal Oven

PMMA 950
PMMA w/terminal_OH
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide 41176 (liquid or unbaked)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating HD-4110 (liquid or unbaked)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI25XX Series (liquid or unbaked)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI26XX Series (liquid or unbaked)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Coating PI27XX Series (liquid or unbaked)
Polyimide Durimide™ 284
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Polystyrene-block-polyisoprene
PVDF PolyVinylidene Fluoride
Pyralux AP (polyimide double sided copper clad tape)
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon-carbide
Silicon-germanium (substrate or film)
SUEX Series TDFS (SU8 Laminate)
Teflon - thin film
Teflon diluted in C5-18
Titanium
Titanium Nitride
Tungsten Carbide
Tungsten Sulfide
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive

APPROVED MATERIALS

Equipment
Comment

Corrosive Wetbench - Classroom

Aluminum
Aluminum fluoride
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Ammonium fluoride
Ammonium hydroxide
Ammonium Persulfate 20%
Ammonium Phosphate
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium Etchant CR-7
Chromium
Chromium Etchant 1020
Chromium Etchant CEP-200
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Copper Etchant APS-100
Crystal Bond 500 Series
Defreckling aluminum etch
Developer MF-24A
Developer MF-26A
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hydrochloric acid
Hydrofluoric acid, 49%
Hydrogen peroxide
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Indium-Tin Oxide (sputter target)
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
Manganese

APPROVED MATERIALS

Equipment
Comment

Corrosive Wetbench - Classroom

Nichrome Etchant
Nichrome Etchant TFN
Nickel
Nickel Etchant TCB
Nitric acid
Organosilicate Glass (already coated)
PC Electroless Copper Solution Part C
PC Electroless Copper Solution Part D
Phosphoric acid
Phosphorous Spin-on-Dopant P499-P512
Photoresist Intervia BPN
Photoresist SPR 955
Photoresist SU-8 Series
Polycarbonate
Polyester PET (Transparency) Film
Potassium hydroxide
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Sodium hydroxide
Spin-on Glass 700F (undoped)
Sulfuric acid
Tantalum Nitride
Teflon - thin film
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)

APPROVED MATERIALS

Equipment
Comment

CVC-601 DC Sputterer

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Antimony
Argon
Barium Bismuth Oxide (substrate only)
Barium Fluoride substrate (BaF₂)
Barium Lead Oxide (substrate only)
Boron A Boron Spin-on Dopant
Boron Sputter Target (user owned)
Calcium Fluoride (CaF₂) substrate
Carbon nanotubes
Carbon Tape (discuss with staff prior to use)
Chromium
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
E-beam Resist ZEP
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Indium-Tin Oxide (sputter target)
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist

APPROVED MATERIALS

Equipment
Comment

CVC-601 DC Sputterer

Lanthanum Lutetium Oxide (substrate only)
Lanthanum Oxide (substrate only)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
Lutetium Oxide (substrate only)
ma-N 2400 Series Negative Photoresist
Molybdenum
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Norland Optical Adhesive 73
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Photoresist XR-1541 E-Beam Resist in MIBK
Platinum
PMMA (solid piece)
PMMA 495
PMMA 950
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)

APPROVED MATERIALS

Equipment
Comment

CVC-601 DC Sputterer

Polyimide Coating PI26XX Series (baked or cured)
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
PVDF PolyVinylidene Fluoride
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Titanium
Titanium Nitride
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten Carbide
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment

Comment **BiFeO₃, SrRuO₃, SrTiO₃ allowed as substrates not targets**

Denton RF Sputterer

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Argon
Barium Bismuth Oxide (substrate only)
Barium Fluoride substrate (BaF₂)
Barium Lead Oxide (substrate only)
Bismuth Ferrite BiFeO₃
Boron A Boron Spin-on Dopant
Boron Sputter Target (user owned)
Calcium Fluoride (CaF₂) substrate
Carbon nanotubes
Chromium
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Indium-Tin Oxide (sputter target)
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
Lanthanum Lutetium Oxide (substrate only)
Lanthanum Oxide (substrate only)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
Lutetium Oxide (substrate only)

APPROVED MATERIALS

Equipment

Comment **BiFeO₃, SrRuO₃, SrTiO₃ allowed as substrates not targets**

Denton RF Sputterer

Molybdenum
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Oxygen
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Platinum
Polycarbonate
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Steel
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Titanium
Titanium Nitride
Titanium oxide
Tungsten Carbide
Tungsten Silicide (WSi₂)
Yttrium Oxide
Zinc oxide
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment

Comment **All materials listed are substrate only, except the following materials can be used as source materials: aluminum oxide, Cr < 10nm, silicon < 10nm, silicon dioxide, silicon monoxide, Ti < 10nm, titanium oxide, and yttrium oxide**

Dielectric E-beam Evaporator

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Bismuth Oxide (substrate only)
Barium Fluoride substrate (BaF₂)
Barium Lead Oxide (substrate only)
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (crucibles)
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Cobalt
Cyclic Olefin Copolymer (substrate film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Epoxy Mount (Allied High Tech)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold (substrate only)
Gold-Tin Die Attach
Graphene
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lanthanum Lutetium Oxide (substrate only)
Lanthanum Oxide (substrate only)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
Lutetium Oxide (substrate only)
Magnesium Iron Silicate

APPROVED MATERIALS

Equipment

Comment **All materials listed are substrate only, except the following materials can be used as source materials: aluminum oxide, Cr < 10nm, silicon < 10nm, silicon dioxide, silicon monoxide, Ti < 10nm, titanium oxide, and yttrium oxide**

Dielectric E-beam Evaporator

ma-N 2400 Series Negative Photoresist
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Norland Electronic Adhesive 123
Oxygen
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polystyrene (not foam)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Spin-on Glass 700F (undoped)

APPROVED MATERIALS

Equipment

Comment **All materials listed are substrate only, except the following materials can be used as source materials: aluminum oxide, Cr < 10nm, silicon < 10nm, silicon dioxide, silicon monoxide, Ti < 10nm, titanium oxide, and yttrium oxide**

Dielectric E-beam Evaporator

Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Yttrium Oxide
Zinc Selenide (Substrate)

APPROVED MATERIALS

Equipment
Comment

E-beam Develop Wet Bench

4-Methyl-2-Pentanone
6061 Aluminum
Acetone
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
AZ Developer 1:1
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Carbon nanotubes
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Developer AZ 327 MIF
Developer AZ 400K
Developer AZ 400K diluted 4:1
Developer AZ 726 MIF
Developer AZ 917 MIF
Developer AZ(R) 300 MIF
Developer MF-319
Developer MF-321
Developer PPD-450
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide

APPROVED MATERIALS

Equipment
Comment

E-beam Develop Wet Bench

Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lithium Fluoride substrate (LiF)
ma-D 500 Series Developer
ma-N 2400 Series Negative Photoresist
Manganese
Methanol
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Nitrogen
Organosilicate Glass (already coated)
o-Xylene
Palladium
Parylene
PC Electroless Copper Solution Part A
PC Electroless Copper Solution Part B
Photomask Cleaning Solution PCS-605
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist remover 1165
Photoresist remover AZ KWIK Strip
Photoresist remover PG
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist stripper AZ 300T
Photoresist stripper PRS 100
Photoresist Stripper PRX™ 127

APPROVED MATERIALS

Equipment
Comment

E-beam Develop Wet Bench

Photoresist stripper QZ 3322
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular
Poly (DL-Lactide)
Poly (DL-Lactide-CO-Glycolide)
Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate)
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Protective Coating AR-PC
ProTek B3 Primer
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
ProTek-100 Remover
ProTEK™ B1-18
ProTEK™ Primer
Protoresist stripper AZ 400T
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Santovac 5 Polyphenyl Ether Lubricant
Schott Glass D263 flexible
Scotch tape 3M
Scotch Tape 3M (double sided)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicone oil
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)

APPROVED MATERIALS

Equipment
Comment

E-beam Develop Wet Bench

Steel
Tantalum
TechniStrip Ni555
Teflon - thin film
Tin
Titanium Nitride
Titanium oxide
Toluene
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zinc oxide

APPROVED MATERIALS

Equipment
Comment

E-beam Photoresist Spinner

Acetone
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
AZ Developer 1:1
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Crystal Bond 500 Series
Developer MF-321
Developer SU-8
Doped Silicon (As, B, Ge, Ga, P, Sb)
Edge Bead Remover AZ PGMEA
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
ma-D 500 Series Developer
ma-N 2400 Series Negative Photoresist
Molybdenum Sulfide
mr-I 8000 Series (polymersolution for Nanoimprinter)
Nickel
Niobium

APPROVED MATERIALS

Equipment
Comment

E-beam Photoresist Spinner

Nitrogen
Organosilicate Glass (already coated)
Palladium
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate)
Polyimide HD-8820 (baked or cured)
Protective Coating AR-PC
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Tantalum
Teflon - thin film
Titanium
Titanium Nitride
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide

APPROVED MATERIALS

Equipment
Comment

E-beam Photoresist Spinner

Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Yttrium

APPROVED MATERIALS

Equipment
Comment

Elionix GS-100 Electron Beam Lithography System	Al ₂ O ₃ (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum oxide Carbon (diamond & graphite) Chromium Cobalt Copper Gallium Antimonide Gallium-arsenide (substrate) Germanium Glass (not pure SiO ₂ quartz) Gold KL1600 Series Photoresist KL5300 Series Photoresist ma-N 2400 Series Negative Photoresist Nickel Niobium Palladium Photoresist AZ 12XT-20PL series Photoresist AZ 5214-E IR Photoresist AZ nLOF 2020 Photoresist AZ nLOF 2035 Photoresist AZ nLOF 2070 Photoresist AZ P4620 Photoresist HD-4110 Photoresist Intervia BPN Photoresist KMPR Series Photoresist LOR A Series Photoresist MMA(8.5)MAA Copolymer Series Photoresist S1805 Photoresist S1813 Photoresist S1827 Photoresist SPR 220 Photoresist SPR 505A Photoresist SPR 955 Photoresist STR 1045 Photoresist XR-1541 E-Beam Resist in MIBK Platinum PMMA 495 PMMA 950 Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate) Protective Coating AR-PC Quartz (pure SiO ₂ , not glass) Silicon Silicon dioxide
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APPROVED MATERIALS

Equipment
Comment

Elionix GS-100 Electron Beam Lithography System	Silicon monoxide Silicon nitride Silicon-germanium (substrate or film) Silver Tantalum Titanium Titanium oxide Tungsten
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APPROVED MATERIALS

Equipment

Comment **Copper, gold silver, and titanium allowed if never exposed during processing**

EVG Wafer Bonding Stations

Aluminum Gallium Arsenide
Boron A Boron Spin-on Dopant
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Gold
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Phosphorous Spin-on-Dopant P499-P512
Polyimide 41176 (baked or cured)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silver
Spin-on Glass 700F (undoped)
Titanium

APPROVED MATERIALS

Equipment Comment

Filmetrics F-20 Optical Reflectometer

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Indium-Tin Oxide (sputter target)
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist

APPROVED MATERIALS

Equipment
Comment

Filmetrics F-20 Optical Reflectometer

Manganese
Nickel
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)
Polymer Elvamide 8061
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
PVDF PolyVinylidene Fluoride
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)

APPROVED MATERIALS

Equipment
Comment

Filmetrics F-20 Optical Reflectometer

Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Yttrium Oxide
Zinc oxide
Zinc Selenide (Substrate)
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

General Lab/Staff Use

Fomblin®
Lo-Na Hand Soap
NovaClean Floor Cleaner
Stainless Steel Cleaner & Polish (3M)
Thermal H5S (Julabo chiller)
Thermal HL45 (Julabo chiller)
Thermal HL80 (Julabo chiller)
TKO FF (vacuum flushing fluid)

APPROVED MATERIALS

Equipment
Comment

Heatpulse 610 Rapid Thermal Annealer

Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Gold
Graphene
Hydrogen mixture (5%H₂ in N₂)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Manganese
Molybdenum
Nickel
Nickel-Chromium
Palladium
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Spin-on Glass 700F (undoped)
Tantalum
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Zinc oxide

APPROVED MATERIALS

Equipment

Comment **Top layer must be silicon, silicon oxide, or silicon nitride**

HMDS Primer

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Circuit Board laminate Ultralam 38XX
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Gold
Graphene
Hexamethyldisilazane (HMDS)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Niobium
Palladium
Platinum
Polyester PET (Transparency) Film
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Tantalum Nitride
Titanium
Tungsten Silicide (WSi₂)

APPROVED MATERIALS

Equipment
Comment

III-V Semiconductor Bench

6061 Aluminum
Acetic acid
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Etchant Type A
Aluminum fluoride
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Ammonium fluoride
Ammonium hydroxide
Ammonium Phosphate
Apiezon Wax W
Barium Fluoride substrate (BaF₂)
Boron A Boron Spin-on Dopant
Bromine Water
Buffered Oxide Etchants (BOE)
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Citric Acid (C₆H₈O₇)
Copper
Defreckling aluminum etch
Doped Silicon (As, B, Ge, Ga, P, Sb)
ElectroScrub3 (NH₄OH)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Hydrobromic acid
Hydrochloric acid
Hydrofluoric acid, 49% Action Technologies etchant
Hydrogen peroxide
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide

APPROVED MATERIALS

Equipment
Comment

III-V Semiconductor Bench

Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
Lithium Niobate (substrate)
ma-N 2400 Series Negative Photoresist
Molybdenum
Nickel
Niobium
Nitric acid
Nitrogen
Organosilicate Glass (already coated)
Palladium
Phosphoric acid
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
Polycarbonate
Polyester PET (Transparency) Film
Polyimide HD-8820 (baked or cured)
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)

APPROVED MATERIALS

Equipment
Comment

III-V Semiconductor Bench

Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicone oil
Silicon-germanium (substrate or film)
Silver
Silver Nitrate Solution (AgNO₃)
Spin-on Glass 700F (undoped)
Sulfuric acid
Tantalum
Tartaric Acid
Teflon - thin film
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Zinc oxide
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment
Comment

Indium Evaporator

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (Deposition Source)
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Alloy
Gold-Tin Die Attach
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Niobate (substrate)
Molybdenum
Nickel
Nickel-Chromium
Palladium
Photoresist AZ 12XT-20PL series
Platinum
Pyrex Glass
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Indium Evaporator

Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Zinc oxide

APPROVED MATERIALS

Equipment
Comment

Ion Mill

Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Nitride
Aluminum oxide
Argon
Carbon (diamond & graphite)
Copper
Cyclic Olefin Copolymer (substrate film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-beam Resist ZEP
Fused Silica (amorphous quartz) Substrate
Germanium
Gold
Graphene
KL1600 Series Photoresist
KL5300 Series Photoresist
Magnesium Oxide Single Crystal
ma-N 2400 Series Negative Photoresist
Molybdenum
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA (solid piece)
PMMA 495
PMMA 950
PMMA w/terminal_OH

APPROVED MATERIALS

Equipment
Comment

Ion Mill

Polycarbonate
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Tantalum
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

K&S 4124 Gold Ball Bonder

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Ceramabond 668
Circuit Board (Rogers 3XXX series)
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Alloy
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Lithium Fluoride substrate (LiF)
Molybdenum Sulfide
Nickel
Niobium
Niobium Nitride
Palladium
Phenolic 74033 Butvar Resin
Phosphorous Spin-on-Dopant P499-P512
Platinum
Printed Circuit Board (generic)

APPROVED MATERIALS

Equipment
Comment

K&S 4124 Gold Ball Bonder

Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Spin-on Glass 700F (undoped)
Tantalum
Teflon - thin film
Tin Silver Copper Solder
Titanium
Titanium Nitride
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron Blue Mounting Tape
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment Comment

Karl Suss MA6/BA6 Contact Aligner

ADEX Series TDFS (SU8 Laminate)
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MA6/BA6 Contact Aligner

Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrile
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MA6/BA6 Contact Aligner

Polystyrene (not foam)
ProTek PSB Patterned Si Etch Coating
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
SUEX Series TDFS (SU8 Laminate)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Yttrium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 Contact Aligner

3-aminopropyltriethoxysilane
ADEX Series TDFS (SU8 Laminate)
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Boron Nitride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 Contact Aligner

Lithium Fluoride substrate (LiF)
Lithium Niobate (substrate)
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
PGMI SF Series Resists
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 Contact Aligner

Polyimide HD-8820 (baked or cured)
ProTek PSB Patterned Si Etch Coating
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
SUEX Series TDFS (SU8 Laminate)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Yttrium
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 IR Backside Contact Aligner

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 IR Backside Contact Aligner

Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)
ProTek PSB Patterned Si Etch Coating
Pyrallux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible

APPROVED MATERIALS

Equipment
Comment

Karl Suss MJB-3 IR Backside Contact Aligner

Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Yttrium
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Karl Suss RA-120 Wafer Scribe

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Molybdenum
Nickel
Niobium
Palladium
Phosphorous Spin-on-Dopant P499-P512
Platinum
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Tantalum
Teflon - thin film
Titanium

APPROVED MATERIALS

Equipment
Comment

Karl Suss RA-120 Wafer Scribe

Titanium Nitride

Trichloro(1,1,2,2-perfluorooctyl)silane

Tungsten

Tungsten Silicide (WSi₂)

Ultron Blue Mounting Tape

APPROVED MATERIALS

Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

KLA-Tencor P7

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)

APPROVED MATERIALS

Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

KLA-Tencor P7

ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Polycarbonate
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
PVDF PolyVinylidene Fluoride
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass

APPROVED MATERIALS

Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

KLA-Tencor P7

Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Yttrium Oxide
Zinc oxide
Zinc Selenide (Substrate)
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment

Comment **Restricted list (for more materials see KOH Bath #2)**

KOH Bath #1 (KOH Wetbench)

ProTek B3 Si Etch Coating

ProTek PSB Patterned Si Etch Coating

Silicon

Silicon dioxide

Silicon nitride

APPROVED MATERIALS

Equipment

Comment **Less materials restrictions as compared to KOH Bath #1. PDMS is covered by mechanical clamp.**

KOH Bath #2 (KOH Wetbench)

Aluminum
Copper
Cyclic Olefin Copolymer (substrate film)
Glass (not pure SiO₂ quartz)
Gold
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Molybdenum
Platinum
Polydimethylsiloxane (PDMS)
ProTek B3 Primer
ProTek B3 Si Etch Coating
Silicon
Silicon dioxide
Silicon nitride
Strontium Ruthenate SrRuO₃
Strontium Titanate SrTiO₃

APPROVED MATERIALS

Equipment

Comment **To see what materials are allowed in the KOH Baths see KOH Bath 1 & KOH Bath 2**

KOH Silicon Etch Wetbench (Beaker Use Only)

Aluminum
Ammonium hydroxide
Ammonium Sulfide + DI Water {20% or less (NH₄)₂S}
Carbon (diamond & graphite)
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium-arsenide (substrate)
Germanium
Gold
Gold Etchant (Potassium-iodide and iodine)
Graphene
Indium Phosphide
Indium/Gallium Phosphide
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Molybdenum
Nickel
Nickel Etchant TCB
Palladium
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
Potassium hydroxide
ProTek B3 Primer

APPROVED MATERIALS

Equipment

Comment **To see what materials are allowed in the KOH Baths see KOH Bath 1 & KOH Bath 2**

KOH Silicon Etch Wetbench (Beaker Use Only)

ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
ProTEK™ B1-18
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Tantalum Nitride
Teflon - thin film
Tetramethylammonium hydroxide (25%) TMAH
Titanium
Titanium Tungsten Alloy
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment Comment

Liftoff Solvent Wet Bench

3-aminopropyltriethoxysilane
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]
6061 Aluminum
Acetone
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
AZ Remover 770
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chlorobenzene
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cyclotene 3022-46 advanced electronics resin
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Glycol Phthalate Wax
Gold
Gold-Germanium
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface

APPROVED MATERIALS

Equipment
Comment

Liftoff Solvent Wet Bench

Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Methanol
Molybdenum
Molybdenum Sulfide
mr-I 8000 Series (polymersolution for Nanoimprinter)
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist Intervia BPN
Photoresist remover 1165
Photoresist remover AZ KWIK Strip
Photoresist remover PG
Photoresist S1813
Photoresist SPR 955
Photoresist stripper AZ 300T
Photoresist stripper PRS 100
Photoresist Stripper PRX™ 127
Photoresist stripper QZ 3322
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular
Poly (DL-Lactide)
Poly (DL-Lactide-CO-Glycolide)
Polycarbonate

APPROVED MATERIALS

Equipment Comment

Liftoff Solvent Wet Bench

Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Polymer Elvamide 8061
ProTek B3 Primer
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
ProTek-100 Remover
ProTEK™ B1-18
ProTEK™ Primer
Protoresist stripper AZ 400T
Pyralin Thinner T-9039
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Santovac 5 Polyphenyl Ether Lubricant
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicone oil
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Steel
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
TechniStrip Ni555
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Toluene

APPROVED MATERIALS

Equipment
Comment

Liftoff Solvent Wet Bench

Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Wafer-mount 562 Thermoplastic Film Adhesive
Xylene
Yttrium
Zinc oxide
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment
Comment

MEI Die Attacher

Al₂O₃ (sapphire substrate)
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Alloy
Gold-Tin Die Attach
Graphene
Hydrogen mixture (5%H₂ in N₂)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Molybdenum Sulfide
Nickel
Niobium
Niobium Nitride
Platinum
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Teflon - thin film
Tin Silver Copper Solder
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide

APPROVED MATERIALS

Equipment
Comment

MEI Die Attacher

Ultron Blue Mounting Tape

APPROVED MATERIALS

Equipment
Comment

Metal E-beam Evaporator

3-aminopropyltriethoxysilane
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Boron Nitride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Carbon Tape (discuss with staff prior to use)
Chromium
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
E-beam Resist ZEP
Epoxy Mount (Allied High Tech)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Germanium
Graphene
Hafnium Oxide (substrate)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Kapton Solid Film (not tape)
KL1600 Series Photoresist

APPROVED MATERIALS

Equipment Comment

Metal E-beam Evaporator

KL5300 Series Photoresist
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Molybdenum
Nickel
Nickel-Chromium
Niobium Nitride
Norland Electronic Adhesive 123
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
PVDF PolyVinylidene Fluoride
Pyralin Thinner T-9039
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible

APPROVED MATERIALS

Equipment
Comment

Metal E-beam Evaporator

Silicon
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Spin-on Glass 700F (undoped)
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Titanium
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten Carbide
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
VM-651 (solvent for PI-2556)
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment
Comment

Microautomation 1006 Dicing Saw 1

Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Cobalt
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium (user supplied saw blade)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide
Nickel

APPROVED MATERIALS

Equipment
Comment

Microautomation 1006 Dicing Saw 1

Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Norland Electronic Adhesive 123
Organosilicate Glass (already coated)
Palladium
Parylene
PGMI SF Series Resists
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 955
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide HD-8820 (baked or cured)
Polymer Elvamide 8061
Pyrex Glass
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Titanium

APPROVED MATERIALS

Equipment
Comment

Microautomation 1006 Dicing Saw 1

Titanium Nitride
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron 1020R Dicing Tape
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Microautomation 1006 Dicing Saw 2

3-aminopropyltriethoxysilane
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Nitride
Aluminum oxide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Cobalt
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Nitride
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Gold
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium (user supplied saw blade)
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Iron
Iron-Chrome Alloy (Fe-Cr)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
ma-N 2400 Series Negative Photoresist
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Norland Electronic Adhesive 123
Organosilicate Glass (already coated)
Parylene
PGMI SF Series Resists
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist Intervia BPN

APPROVED MATERIALS

Equipment
Comment

Microautomation 1006 Dicing Saw 2

Photoresist SPR 955
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide HD-8820 (baked or cured)
Polymer Elvamide 8061
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Toluol Datacoat
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron 1020R Dicing Tape
Ultron Blue Mounting Tape
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

MRL 1 High Temp Anneal (metals)

Aluminum
Aluminum Nitride
Aluminum oxide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium
Copper
Germanium
Hydrogen
Iron
Molybdenum
Nickel
Nickel-Chromium
Palladium
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Tantalum
Titanium
Tungsten

APPROVED MATERIALS

Equipment
Comment

MRL 2 Wet/Dry Oxidation (semiconductors)

Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Germanium
Graphene
Indium/Gallium Phosphide
Oxygen
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

MRL 3 Wet/Dry Oxidation (3-5 Semi's)

Al₂O₃ (sapphire substrate)
Aluminum Gallium Arsenide
Boron A Boron Spin-on Dopant
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Oxygen
Phosphorous Spin-on-Dopant P499-P512
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Spin-on Glass 700F (undoped)

APPROVED MATERIALS

Equipment
Comment

MRL 4 Low Temp Anneal (metals)

Aluminum
Aluminum oxide
Carbon (diamond & graphite)
Chromium
Cobalt
Copper
Germanium
Gold
Hydrogen
Iron
Manganese
Molybdenum
Nickel
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silver
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Titanium
Titanium oxide
Tungsten
Tungsten/rhenium

APPROVED MATERIALS

Equipment
Comment

MRL 6 High Temp Anneal

Carbon (diamond & graphite)

Silicon

Silicon monoxide

Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Nikon I-Line Stepper

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum oxide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium-arsenide (substrate)
Germanium
Gold
Indium
Iron
Iron-Chrome Alloy (Fe-Cr)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Manganese
Nickel
Niobium
Niobium Nitride
Palladium
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon nitride
Silicon-germanium (substrate or film)

APPROVED MATERIALS

Equipment
Comment

Nikon I-Line Stepper

Silver
Spin-on Glass 700F (undoped)
Tantalum
Tin
Titanium
Tungsten
Tungsten Silicide (WSi₂)
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive

APPROVED MATERIALS

Equipment
Comment

Nitride Strip Wetbench

Doped Silicon (As, B, Ge, Ga, P, Sb)

Phosphoric acid

Quartz (pure SiO₂, not glass)

Silicon

Silicon dioxide

Silicon monoxide

Silicon nitride

Silicon-germanium (substrate or film)

Transetch N

APPROVED MATERIALS

Equipment
Comment

Non-Litho Spin Coat Bench

3-aminopropyltriethoxysilane
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]
6061 Aluminum
Acetone
Adhesion Concentrate QZ 3289
Adhesion Promoter AP3000
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Apiezon Grease AP100
Apiezon Wax L
Apiezon Wax M
Apiezon Wax W
Barium Fluoride substrate (BaF₂)
Benzotriazole
Biphenyl (part of polymer solution)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium fluoride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chlorobenzene
Chromium
Circuit Board (Rogers 3XXX series)
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cytop CTL-809M
Cytop CT-SOLV180
Cytop CTX-809SP2
Diffusion pump fluid Santovac 5
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-beam resist XR-1541
E-beam Resist ZEP
EC Solvent 11
Edge Bead Remover AZ PGMEA
Edge Bead Remover NANO EBR-PG
EPO-TEK 301, Part A (epoxy)
FC-40 Fluorinert Electronic Liquid
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide

APPROVED MATERIALS

Equipment Comment

Non-Litho Spin Coat Bench

Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Hexamethyldisilazane (HMDS)
Hexanes
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
ma-N 2400 Series Negative Photoresist
Manganese
Methanol
Methyl methacrylate, 99%
Molybdenum
Molybdenum Sulfide
mr-I 8000 Series (polymersolution for Nanoimprinter)
n-Heptane (part of solution)
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Norland Optical Adhesive 73
OmniCoat (SU-8 adhesion)
Organosilicate Glass (already coated)
Palladium
Parylene
PGMI SF Series Resists

APPROVED MATERIALS

Equipment Comment

Non-Litho Spin Coat Bench

Phosphorous Spin-on-Dopant P499-P512
Photomask Cleaning Solution PCS-605
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist remover 1165
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist stripper AZ 300T
Photoresist stripper PRS 100
Photoresist Stripper PRX™ 127
Photoresist stripper QZ 3322
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular
Poly (DL-Lactide)
Poly (DL-Lactide-CO-Glycolide)
Polycarbonate
Polydimethylsiloxane (cured substrate)
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide 41176 (liquid or unbaked)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating HD-4110 (liquid or unbaked)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI25XX Series (liquid or unbaked)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI26XX Series (liquid or unbaked)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Coating PI27XX Series (liquid or unbaked)
Polyimide Durimide™ 284

APPROVED MATERIALS

Equipment Comment

Non-Litho Spin Coat Bench

Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Polymer Elvamide 8061
Polystyrene (not foam)
Printed Circuit Board (generic)
ProTek B3 Primer
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
ProTEK™ B1-18
ProTEK™ Primer
Protoresist stripper AZ 400T
PVDF PolyVinylidene Fluoride
Pyr lux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Santovac 5 Polyphenyl Ether Lubricant
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver paint
Spin-on Glass 700F (undoped)
Stainless Steel
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Sylgard 18X Series (base and curing agent)
T9039 Solvent
Tantalum
Teflon - thin film
Teflon AF (amorphous fluoroplastic) Resin
Teflon diluted in C5-18
Tin
Titanium
Titanium Nitride
Titanium oxide
Toluene
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)

APPROVED MATERIALS

Equipment
Comment

Non-Litho Spin Coat Bench

Tungsten Sulfide

UVN 2300-0.5 Negative DUV Photoresist

VM-651 (solvent for PI-2556)

Yttrium

Zep520A

Zinc oxide

APPROVED MATERIALS

Equipment
Comment

Obducat AB NIL 2.5 Nanoimprinter

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Chromium
Cobalt
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Gold
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Manganese
Methanol
mr-I 8000 Series (polymersolution for Nanoimprinter)
Nickel
Niobium
Nitrogen
Palladium
Photoresist SPR 955
Platinum
PMMA 495
PMMA 950
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silver
Tantalum

APPROVED MATERIALS

Equipment
Comment

Obducat AB NIL 2.5 Nanoimprinter

Teflon - thin film

Titanium

Titanium oxide

Tungsten

APPROVED MATERIALS

Equipment
Comment

Optical Microscopes (all)

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cyclotene 3022-46 advanced electronics resin
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-beam resist XR-1541
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide

APPROVED MATERIALS

Equipment
Comment

Optical Microscopes (all)

Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
mr-I 8000 Series (polymersolution for Nanoimprinter)
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film

APPROVED MATERIALS

Equipment Comment

Optical Microscopes (all)

Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
Polymer Elvamide 8061
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
PVDF PolyVinylidene Fluoride
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Spin-on Glass 700F (undoped)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Zinc oxide
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Packaging Annealer

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Cobalt
Copper
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Gold
Gold-Tin Alloy
Gold-Tin Die Attach
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Manganese
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Palladium
Platinum
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Packaging Annealer

Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Tantalum
Teflon - thin film
Tin
Tin Silver Copper Solder
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide

APPROVED MATERIALS

Equipment
Comment

Piranha Wetbench

Aluminum oxide
Carbon (diamond & graphite)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Hydrogen peroxide
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 Series (beaker use only)
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Sulfuric acid
Teflon - thin film
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment
Comment

Polymer Oven 425C

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Apiezon Wax W
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Cytop CTL-809M
Cytop CT-SOLV180
Cytop CTX-809SP2
Doped Silicon (As, B, Ge, Ga, P, Sb)
Edge Bead Remover AZ PGMEA
FC-40 Fluorinert Electronic Liquid
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
Manganese

APPROVED MATERIALS

Equipment
Comment

Polymer Oven 425C

Molybdenum Sulfide
Nickel
Niobium
Niobium Nitride
Nitrogen
Norland Electronic Adhesive 123
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Photoresist XR-1541 E-Beam Resist in MIBK
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular
Poly (DL-Lactide)
Poly (DL-Lactide-CO-Glycolide)
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide 41176 (liquid or unbaked)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating HD-4110 (liquid or unbaked)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI25XX Series (liquid or unbaked)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI26XX Series (liquid or unbaked)
Polyimide Coating PI27XX Series (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Polymer Oven 425C

Polyimide Coating PI27XX Series (liquid or unbaked)
Polyimide Durimide™ 284
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Polymer Elvamide 8061
Polystyrene (not foam)
PVDF PolyVinylidene Fluoride
Pyralin Thinner T-9039
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Stainless Steel
Sylgard 18X Series (base and curing agent)
Tantalum
Teflon - thin film
Teflon AF (amorphous fluoroplastic) Resin
Teflon diluted in C5-18
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
VM-651 (solvent for PI-2556)
Zinc oxide

APPROVED MATERIALS

Equipment
Comment

Pre-Furnace Clean Wetbench

Ammonium hydroxide
Doped Silicon (As, B, Ge, Ga, P, Sb)
Hydrochloric acid
Hydrofluoric acid, 49%
Hydrogen peroxide
Nitrogen
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Sulfuric acid

APPROVED MATERIALS

Equipment
Comment

Safety

HG Absorb® (part of mercury spill kit)

JT Baker Acid Neutralizer

Spilfyter Base Neutralizer

APPROVED MATERIALS

Equipment Comment

Samco UV-Ozone

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Chromium
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
E-beam Resist ZEP
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Nickel
Palladium
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series

APPROVED MATERIALS

Equipment
Comment

Samco UV-Ozone

Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (styrene-b-methyl methacrylate)
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide HD-8820 (baked or cured)
Polystyrene-block-polyisoprene
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Strontium Titanate SrTiO₃
Teflon - thin film
Titanium
Titanium Nitride
Tungsten
Tungsten Carbide
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #1

3-aminopropyltriethoxysilane
Acetone
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Boron Nitride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam Resist ZEP
Edge Bead Remover AZ PGMEA
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Isopropanol

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #1

Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (cured substrate)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #1

Polyimide HD-8820 (baked or cured)
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment Comment

Spin Coat Bench #2

Acetone
ADEX Series TDFS (SU8 Laminate)
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam Resist ZEP
Edge Bead Remover AZ PGMEA
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #2

Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
OmniCoat (SU-8 adhesion)
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (cured substrate)

APPROVED MATERIALS

Equipment Comment

Spin Coat Bench #2

Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
SUEX Series TDFS (SU8 Laminate)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #3

3-aminopropyltriethoxysilane
Acetone
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Boron Nitride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam Resist ZEP
Edge Bead Remover AZ PGMEA
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Isopropanol

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #3

Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polycarbonate
Polydimethylsiloxane (cured substrate)
Polyester PET (Transparency) Film
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Spin Coat Bench #3

ProTek PSB Patterned Si Etch Coating
ProTek PSB Primer
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
Ultron Blue Mounting Tape
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment
Comment

STS Multiplex ICP

Carbon (diamond & graphite)
Crystal Bond 500 Series
Doped Silicon (As, B, Ge, Ga, P, Sb)
Germanium
Halocardon C318
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-N 2400 Series Negative Photoresist
Oxygen
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Poly (styrene-b-methyl methacrylate)
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Sulfur hexafluoride
UVN 2300-0.5 Negative DUV Photoresist

APPROVED MATERIALS

Equipment
Comment

SU8 Solvent Chemical Bench

Acetone
ADEX Series TDFS (SU8 Laminate)
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
AZ Developer 1:1
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chlorobenzene
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Developer AZ 327 MIF
Developer AZ 400K
Developer AZ 400K diluted 4:1
Developer AZ 726 MIF
Developer AZ 917 MIF
Developer AZ(R) 300 MIF
Developer Intervia BP
Developer MF-24A
Developer MF-26A
Developer MF-319
Developer MF-321
Developer MF-CD-26
Developer NANO MIBK/IPA Series
Developer PA-401D
Developer Polyimide RI9180
Developer PPD-450
Developer Shipley BPR
Developer SU-8
Doped Silicon (As, B, Ge, Ga, P, Sb)
Edge Bead Remover AZ PGMEA
Ethyl Lactate
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Gamma-Butyrolactone (SU-8 thinner)
Germanium
Germanium-tin (GeSn) (pre-deposited film)

APPROVED MATERIALS

Equipment
Comment

SU8 Solvent Chemical Bench

Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Isopropanol
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
ma-D 500 Series Developer
ma-N 2400 Series Negative Photoresist
Manganese
Methanol
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Nitrogen
OmniCoat (SU-8 adhesion)
Palladium
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist remover 1165
Photoresist remover AZ KWIK Strip
Photoresist remover PG
Photoresist S1805
Photoresist S1813
Photoresist S1827

APPROVED MATERIALS

Equipment
Comment

SU8 Solvent Chemical Bench

Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist stripper AZ 300T
Photoresist stripper PRS 100
Photoresist Stripper PRX™ 127
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
Polymer Elvamide 8061
ProTek PSB Patterned Si Etch Coating
Protoresist stripper AZ 400T
Pyrallux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Scotch tape 3M
Scotch Tape 3M (double sided)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
SUEx Series TDFS (SU8 Laminate)
Sylgard 18X Series (base and curing agent)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten

APPROVED MATERIALS

Equipment
Comment

SU8 Solvent Chemical Bench

Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Yttrium

APPROVED MATERIALS

Equipment

Comment **Needs to be full wafer substrate for measurement**

Superior AFPP Four-Point Probe

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Carbon (diamond & graphite)
Chromium
Cobalt
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gold
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Molybdenum
Nickel
Niobium
Palladium
Platinum
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Tantalum
Titanium
Titanium Nitride
Tungsten
Yttrium
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Tencor Alpha Step 200 profilometer

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Barium Fluoride substrate (BaF₂)
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Gold-Tin Die Attach
Graphene
Hafnium Oxide (substrate)
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium/Arsenic Phosphide
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)

APPROVED MATERIALS

Equipment
Comment

Tencor Alpha Step 200 profilometer

Lead Zirconium Titanate (PZT)
Lithium Fluoride substrate (LiF)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Polycarbonate
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
PVDF PolyVinylidene Fluoride

APPROVED MATERIALS

Equipment
Comment

Tencor Alpha Step 200 profilometer

Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Yttrium Oxide
Zinc oxide
Zinc Selenide (Substrate)
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment

Comment **Needs to be full wafer substrate for measurement**

Tencor Thin Film Stress Measurement

6061 Aluminum
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Boron A Boron Spin-on Dopant
Carbon (diamond & graphite)
Chromium
Cobalt
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Gold
Graphene
Indium
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Polydimethylsiloxane (PDMS)

APPROVED MATERIALS

Equipment

Comment **Needs to be full wafer substrate for measurement**

Tencor Thin Film Stress Measurement

Polyester PET (Transparency) Film
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-germanium (substrate or film)
Silver
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten/rhenium
Yttrium
Yttrium Oxide
Zirconium
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

Tousimis Critical Point Dryer

Aluminum Gallium Arsenide
Boron A Boron Spin-on Dopant
Carbon dioxide (CO2)
Carbon nanotubes
Copper
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium/Gallium/Arsenic Phosphide
Isopropanol
Molybdenum
Nickel
Palladium
Phosphorous Spin-on-Dopant P499-P512
Platinum
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)
Quartz (pure SiO2, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Spin-on Glass 700F (undoped)
Tantalum Nitride
Teflon - thin film
Titanium
Titanium Tungsten Alloy

APPROVED MATERIALS

Equipment
Comment

Tystar Low Temperature CVD Oxide Tube

15% phosphine in 85% silane
Doped Silicon (As, B, Ge, Ga, P, Sb)
Graphene
Oxygen
Quartz (pure SiO₂, not glass)
Silane
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Tystar Polysilicon LPCVD Tube

15% phosphine in 85% silane
Al₂O₃ (sapphire substrate)
Carbon (diamond & graphite)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Quartz (pure SiO₂, not glass)
Silane
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Tystar Silicon Nitride LPCVD Tube

Carbon (diamond & graphite)
Dichlorosilane
Doped Silicon (As, B, Ge, Ga, P, Sb)
Germanium
Quartz (pure SiO₂, not glass)
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride

APPROVED MATERIALS

Equipment
Comment

Tystar Wet/Dry Oxidation Tube

Doped Silicon (As, B, Ge, Ga, P, Sb)

Germanium

Hydrogen

Oxygen

Quartz (pure SiO₂, not glass)

Silicon

Silicon dioxide

Silicon monoxide

Silicon nitride

TRANS-LC ® (trans 1,2-Dichloroethene)

APPROVED MATERIALS

Equipment
Comment

Unaxis 790 RIE

Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Boron A Boron Spin-on Dopant
Boron Nitride
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Cobalt
Copper
Cyclic Olefin Copolymer (substrate film)
Cyclotene 3022-46 advanced electronics resin
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam Resist ZEP
EVGNIL UV/A3 Photoresist
Fomblin®
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Halocarbon 14 (CF₄)
Halocarbon 23 (CHF₃)
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist

APPROVED MATERIALS

Equipment
Comment

Unaxis 790 RIE

KL5300 Series Photoresist
Lanthanum Boride
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
mr-I 8000 Series (polymersolution for Nanoimprinter)
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Oxygen
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (styrene-b-methyl methacrylate)
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)

APPROVED MATERIALS

Equipment
Comment

Unaxis 790 RIE

Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Durimide™ 284
Polyimide HD-8820 (baked or cured)
Polystyrene (not foam)
Polystyrene-block-polyisoprene
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
PVDF PolyVinylidene Fluoride
Pyralin Thinner T-9039
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Spin-on Glass 700F (undoped)
Sulfur hexafluoride
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Zinc oxide

APPROVED MATERIALS

Equipment
Comment

WestBond 747644 Aluminum Wedge Bonder	Al ₂ O ₃ (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum oxide Barium Fluoride substrate (BaF ₂) Bismuth Selenide (Bi ₂ Se ₃) substrate Boron A Boron Spin-on Dopant Boron Nitride Calcium Fluoride (CaF ₂) substrate Carbon (diamond & graphite) Carbon Tape (discuss with staff prior to use) Chromium Circuit Board (Rogers 3XXX series) Cobalt Copper Doped Silicon (As, B, Ge, Ga, P, Sb) Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium-arsenide (substrate) Germanium Glass (not pure SiO ₂ quartz) Gold Gold-Tin Alloy Gold-Tin Die Attach Graphene Hafnium Oxide (substrate) Indium Indium Aluminum Arsenide Indium Arsenide Indium Phosphide Indium/Gallium Phosphide Indium/Gallium/Arsenic Phosphide Iron-Chrome Alloy (Fe-Cr) Lithium Fluoride substrate (LiF) Molybdenum Molybdenum Sulfide Nickel Niobium Niobium Nitride Palladium Phenolic 74033 Butvar Resin Phosphorous Spin-on-Dopant P499-P512 Platinum Polyester PET (Transparency) Film
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APPROVED MATERIALS

Equipment
Comment

WestBond 747644 Aluminum Wedge Bonder	Polyimide Coating HD-4110 (baked or cured) Polyimide Coating PI26XX Series (baked or cured) Polyimide Coating PI27XX Series (baked or cured) Polyimide Durimide™ 284 Polyimide Film Tape 5413 (3M) Pyrex Glass Quartz (pure SiO ₂ , not glass) Schott Glass D263 flexible Silicon Silicon dioxide Silicon monoxide Silicon nitride Silicon-carbide Silver Silver Epoxy/Paste (must be baked prior to vacuum systems) Solder Super glue Tantalum Teflon - thin film Tin Tin Silver Copper Solder Titanium Titanium oxide Tungsten Tungsten Carbide Tungsten Silicide (WSi ₂) Tungsten Sulfide Tungsten/rhenium Zirconium Oxide (ZrO ₂)
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APPROVED MATERIALS

Equipment
Comment

XeF2 Etcher

6061 Aluminum
Aluminum
Aluminum oxide
Carbon (diamond & graphite)
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Gallium Nitride
Germanium
Glass (not pure SiO2 quartz)
Indium Tin Oxide (thin film)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lanthanum Boride
Lead Magnesium Niobate-lead Titanate (PMN-PT)
ma-N 2400 Series Negative Photoresist
Molybdenum
Niobium
Nitrogen
Organosilicate Glass (already coated)
Parylene
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA 495
PMMA 950
Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate)
Polydimethylsiloxane (PDMS)

APPROVED MATERIALS

Equipment
Comment

XeF2 Etcher

Polyester PET (Transparency) Film
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon nitride
Silver
Strontium Ruthenate SrRuO₃
Strontium Titanate SrTiO₃
Titanium
Titanium Nitride
Titanium oxide
Tungsten
UVN 2300-0.5 Negative DUV Photoresist
Xenon Difluoride (XeF₂)

APPROVED MATERIALS

Equipment
Comment

YES Asher

6061 Aluminum
Al₂O₃
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Bismuth Ferrite BiFeO₃
Bismuth Selenide (Bi₂Se₃) substrate
Boron A Boron Spin-on Dopant
Calcium fluoride
Calcium Fluoride (CaF₂) substrate
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Cytop (cured thin film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
E-Beam Resist Calixarene
E-beam resist XR-1541
EVGNIL UV/A3 Photoresist
Fluorolink MD 700 (cured)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium Oxide
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Gold
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium tin oxide coated PET sheet
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide

APPROVED MATERIALS

Equipment
Comment

YES Asher

Iron
Iron-Chrome Alloy (Fe-Cr)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)
Lithium Niobate (substrate)
Magnesium Iron Silicate
Magnesium Oxide Single Crystal
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Oxygen
Palladium
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist HD-4110
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Photoresist XR-1541 E-Beam Resist in MIBK
Platinum
PMMA (solid piece)
PMMA 495

APPROVED MATERIALS

Equipment
Comment

YES Asher

PMMA 950
PMMA w/terminal_OH
Poly (styrene-b-methyl methacrylate)
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)
Polycarbonate
Polydimethylsiloxane (PDMS)
Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide HD-8820 (baked or cured)
Polymer Elvamide 8061
Printed Circuit Board (generic)
PVDF PolyVinylidene Fluoride
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Spin-on Glass 700F (undoped)
Stainless Steel
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Trichloro(1,1,2,2-perfluorooctyl)silane
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)
Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Yttrium
Yttrium Oxide
Zinc oxide
Zirconium
Zirconium Oxide (ZrO₂)

APPROVED MATERIALS

Equipment
Comment

YES Asher

Zirconium Silicide (ZrSi₂)

APPROVED MATERIALS

Equipment
Comment

YES Vacuum Oven

6061 Aluminum
ADEX Series TDFS (SU8 Laminate)
Al₂O₃ (sapphire substrate)
Aluminum
Aluminum Gallium Arsenide
Aluminum Nitride
Aluminum oxide
Apiezon Wax W
Carbon (diamond & graphite)
Carbon nanotubes
Chromium
Circuit Board (Rogers 3XXX series)
Circuit Board laminate Ultralam 38XX
Cobalt
Copper
Crystal Bond 500 Series
Cyclic Olefin Copolymer (substrate film)
Doped Silicon (As, B, Ge, Ga, P, Sb)
Epoxy Mount (Allied High Tech)
Fused Silica (amorphous quartz) Substrate
Gallium Antimonide
Gallium Arsenide + (S passivation) substrate
Gallium Nitride
Gallium-arsenide (substrate)
Germanium
Germanium-tin (GeSn) (pre-deposited film)
Glass (not pure SiO₂ quartz)
Glycol Phthalate Wax
Gold
Gold-Tin Die Attach
Graphene
Indium Aluminum Arsenide
Indium Arsenide
Indium Gallium Arsenide
Indium Phosphide
Indium Tin Oxide (thin film)
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface
Indium/Gallium Phosphide
Indium/Gallium/Arsenic Phosphide
Iron
Iron-Chrome Alloy (Fe-Cr)
Kapton Solid Film (not tape)
KL1600 Series Photoresist
KL5300 Series Photoresist
Lead Magnesium Niobate-lead Titanate (PMN-PT)
Lead Zirconium Titanate (PZT)

APPROVED MATERIALS

Equipment
Comment

YES Vacuum Oven

Lithium Fluoride substrate (LiF)
Lithium Niobate (substrate)
ma-N 2400 Series Negative Photoresist
Manganese
Molybdenum
Molybdenum Sulfide
Nickel
Nickel-Chromium
Niobium
Niobium Nitride
Nitrogen
Organosilicate Glass (already coated)
Palladium
Parylene
Phosphorous Spin-on-Dopant P499-P512
Photoresist AZ 12XT-20PL series
Photoresist AZ 5214-E IR
Photoresist AZ nLOF 2020
Photoresist AZ nLOF 2035
Photoresist AZ nLOF 2070
Photoresist AZ P4620
Photoresist Intervia BPN
Photoresist KMPR Series
Photoresist LOR A Series
Photoresist MMA(8.5)MAA Copolymer Series
Photoresist S1805
Photoresist S1813
Photoresist S1827
Photoresist SPR 220
Photoresist SPR 505A
Photoresist SPR 955
Photoresist STR 1045
Photoresist SU-8 2000 Series
Photoresist SU-8 Series
Platinum
PMMA (solid piece)
PMMA 495
PMMA 950
PMMA w/terminal_OH
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular
Poly (DL-Lactide)
Poly (DL-Lactide-CO-Glycolide)
Poly (styrene-b-methyl methacrylate)
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)
Polycarbonate
Polydimethylsiloxane (PDMS)

APPROVED MATERIALS

Equipment Comment

YES Vacuum Oven

Polyester PET (Transparency) Film
Polyimide 41176 (baked or cured)
Polyimide 41176 (liquid or unbaked)
Polyimide Coating HD-4110 (baked or cured)
Polyimide Coating HD-4110 (liquid or unbaked)
Polyimide Coating PI25XX Series (baked or cured)
Polyimide Coating PI25XX Series (liquid or unbaked)
Polyimide Coating PI26XX Series (baked or cured)
Polyimide Coating PI26XX Series (liquid or unbaked)
Polyimide Coating PI27XX Series (baked or cured)
Polyimide Coating PI27XX Series (liquid or unbaked)
Polyimide Durimide™ 284
Polyimide Film Tape 5413 (3M)
Polyimide HD-8820 (baked or cured)
Polyimide HD-8820 (liquid or unbaked)
ProTek B3 Si Etch Coating
ProTek PSB Patterned Si Etch Coating
ProTEK™ B1-18
PVDF PolyVinylidene Fluoride
Pyralux AP (polyimide double sided copper clad tape)
Pyrex Glass
Quartz (pure SiO₂, not glass)
Schott Glass D263 flexible
Silicon
Silicon dioxide
Silicon monoxide
Silicon nitride
Silicon-carbide
Silicon-germanium (substrate or film)
Silver
Silver Epoxy/Paste (must be baked prior to vacuum systems)
Silver paint
Spin-on Glass 700F (undoped)
Strontium Ruthenate SrRuO₃
Strontium Titanate Nb Doped (SrTiO₃+Nb)
Strontium Titanate SrTiO₃
SUEX Series TDFS (SU8 Laminate)
Tantalum
Teflon - thin film
Tin
Titanium
Titanium Nitride
Titanium oxide
Tungsten
Tungsten Carbide
Tungsten Silicide (WSi₂)

APPROVED MATERIALS

Equipment
Comment

YES Vacuum Oven

Tungsten Sulfide
Tungsten/rhenium
UVN 2300-0.5 Negative DUV Photoresist
Wafer-mount 562 Thermoplastic Film Adhesive
Yttrium
Yttrium Oxide
Zinc oxide
Zirconium
Zirconium Alloy - Zircaloy-4 (substrate)
Zirconium Oxide (ZrO₂)
Zirconium Silicide (ZrSi₂)