

Deposition Chemical Selection Guide

DEPOSITION PRECURSORS

Inter-metal dielectric precursors

TEOS	Tetraethylorthosilicate
4MS	Tetramethylsilane
OMCTS	Octamethylcyclotetrasiloxane

CVD dopants

TEB	Triethylborate
TEPO	Triethylphosphate
TMB	Trimethylborate
TMP	Trimethylphosphite

Silicon oxide and nitride precursors

BDEAS	Bis (diethylamino)silane
BDMAMS	bis(dimethylamino) methylsilane
SiNCH*	Entegris proprietary
HMDS	Hexamethyldisilane
HCDS	Hexachlorodisilane
C ₅ H ₅ N	Pyridine
H ₂ O	UHP grade water
Precursors for low temperature Si oxides and nitrides*	
TMDSO	Tetramethyldisiloxane

High-κ gate and capacitor precursors

HfCl ₄	Hafnium tetrachloride (standard and UHP grade)
ZrCl ₄	Zirconium tetrachloride
AlCl ₃	Aluminium trichloride
NxTi	Ti dopant
Precursors for alternative high-κ dielectrics and dopants*	
TEMAZ	Tetrakis(ethylmethylamido)zirconium(IV)

Metallization including barrier materials

HP CCTBA*	High Purity dicobalt hexacarbonyl tert-butylacetylene
TDMAT	Tetrakis-dimethylamino Titanium
TiCl ₄	Titanium tetrachloride
WCl ₆	Tungsten hexachloride
WCl ₅	Tungsten pentachloride
Joppa27™	(In collaboration with AMAT)
Precursors for cobalt (selective or non-selective)*	
TBTEMT	(Tert-butylimido)tris(ethylmethylamido)tantalum(V)
Other metal precursors (eg. Ru, Y, Er, Mg, Al, Sn, W, Ir)	

*Currently available at sampling volumes. Scale up to higher volume production would be available, depending on demand.

Other precursors

SiCl ₄	Silicon tetrachloride
PZT cocktails	Lead zirconate titanate
PH ₃	Phosphine in SAGE packaging for TX-4™
TMA	Trimethylaluminium
TMG	Trimethylgallium
TMI	Trimethylindium
Cp ₂ Mg*	Bis(cyclopentadienyl)Magnesium

PRECURSOR DELIVERY SYSTEMS

Unichem™ 3000 series liquid delivery system	Continuous delivery of liquid precursors to deposition tools
BulkFill™ 1700 system	200 liter fab storage system that delivers liquid chemistries to the Unichem 3000 LDS system
ProE-VAP® 100, 200, 300 and 500 solid delivery system	Delivers solid precursor with high level of flux and precursor efficiency

FOR MORE INFORMATION

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Corporate Headquarters

129 Concord Road
Billerica, MA 01821
USA

Customer Service

Tel +1 952 556 4181
Fax +1 952 556 8022
Toll Free 800 394 4083

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