

## Review of recent advances in inorganic photoresists

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Table S1. Selective examples of inorganic based photoresists and their lithographic performance.<sup>a</sup>

Photoresist Major Composition	Method	Dose	Developer	Positive/Negative	Resolution	Ref
HfO <sub>2</sub>	E-beam	103 μC/cm <sup>2</sup>	Isopropyl Alcohol	Negative	50 nm line	1
HfO <sub>2</sub>	E-beam	--	tert-Amyl Alcohol	Negative	35 nm line	1
HfO <sub>2</sub>	E-beam	30 μC/cm <sup>2</sup>	Organic Solvent	Negative	40 nm line	2
HfO <sub>2</sub>	DUV	--	Organic Solvent	Negative	50 nm h/p line	2
ZrMAA	EUV	5.6 mJ/cm <sup>2</sup>	Organic Developer	Negative	32 nm line	3
ZrMAA	EUV	4.2 mJ/cm <sup>2</sup>	Organic Developer	Negative	26 nm line	3
ZircSO <sub>x</sub>	E-beam	999 μC/cm <sup>2</sup>	TMAH	Negative	15 nm isolate line	4
ZircSO <sub>x</sub>	E-beam	810 μC/cm <sup>2</sup>	TMAH	Negative	36 nm dense line	4
[(PhSn) <sub>12</sub> O <sub>14</sub> (OH) <sub>6</sub> ]Cl <sub>2</sub>	EUV	350 mJ/cm <sup>2</sup>	66% aqueous isopropanol	Negative	18 nm dense line	5
Tin oxo cage with acetate anion	EUV	68 mJ/cm <sup>2</sup>	2/1 isopropanol/H <sub>2</sub> O	Negative	30 nm h/p line	6
Inpria Y-Series	EUV	35 mJ/cm <sup>2</sup>	a proprietary organic developer	Negative	13 nm h/p line/space	7
3-methyl-phenyl-modified Zn-mTA cluster	EUV	47 mJ/cm <sup>2</sup>	Decahydronaphthalene	Negative	15 nm h/p line/space	8
Zn (MA)(TFA)	EUV	27 mJ/cm <sup>2</sup> or 37 mJ/cm <sup>2</sup>	Diluted propionic acid in chloroform	Negative	30 nm h/p line/space	9
Tri(phenyl)antimony diacrylate	EUV	5.6 mJ/cm <sup>2</sup>	Hexane	Negative	35 nm dense line	10
(dppm)Pd(C <sub>2</sub> O <sub>4</sub> )	EUV	50 mJ/cm <sup>2</sup>	20% MIBK/Toluene	Positive	30 nm dense line	11
[PPh <sub>3</sub> (CH <sub>2</sub> Ph)][Co(2,2'-bipyridine)(oxalate) <sub>2</sub> ]	EUV	30 mJ/cm <sup>2</sup>	Methyl ethyl ketone	Negative	20 nm h/p line	12

<sup>a</sup> Abbreviations: MA: methacrylate; MAA: methacrylate acid; TFA: trifluoroacetate; TMAH: tetramethylammonium hydroxide; R: aliphatic or aromatic group; dppm: 1,1-Bis(diphenylphosphino)methane; MIBK: methyl isobutyl ketone.

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