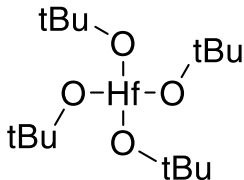


Catalog # 72-5800 Hafnium(IV) t-butoxide (99.9%-Hf, &lt;1.5%-Zr)



## Thermal Behavior:

- Melting point: 8°C
- Boiling point: 90°C at 5 Torr
- Vapor pressure: ~1 Torr/100°C [1]

## Technical Notes:

1. ALD/CVD precursor and dopant for hafnium containing thin film deposition

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
HfO <sub>2</sub>	PE-ALD	70-80°C	-	PL <sub>2</sub> O <sub>2</sub>	200°C	1
	ALD	-	-	O <sub>3</sub>	450°C	2
	ALD	-	-	O <sub>2</sub>	300°C	3
	ALD	-	-	H <sub>2</sub> O	200°C	4
	ALD	80°C	-	RCOOH	50-350°C	5
	phot-ALD	RT	7.5 Torr	-	150-245°C	6
	CVD	150°C	10 Torr	-	250°C	7
Hf <sub>x</sub> Si <sub>1-x</sub> O <sub>2</sub>	ALD	RT	0.5-1.5 Torr	TEMAS, O <sub>3</sub>	100-400°C	8
Hf <sub>x</sub> Al <sub>y</sub> O <sub>z</sub>	ALD	-	-	TMA, H <sub>2</sub> O	250°C	9
Hf:LiNbO <sub>x</sub>	HV-CVD	RT	-	Nb(OEt) <sub>4</sub> (dmae), Li(OtBu)	650°C	10

## References:

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