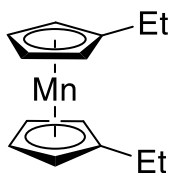


Catalog # 25-0210 Bis(ethylcyclopentadienyl)manganese, min. 98%



Thermal Behavior:

- Decomposition temperature: >500°C [1]
- Sublimation temperature: 50-65°C/0.1 Torr [2]
- Vapor pressure: 0.4 Torr/80°C [2]

Technical Notes:

1. ALD/CVD precursor for Mn containing thin film deposition

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
MnO _x	ALD	75°C	-	H ₂ O or O ₃	150-300°C	3
	ALD	80-90°C	0.03 Torr	H ₂ O	100-300°C	4
	ALD	80°C	1 Torr	^{PL} N ₂ /H ₂ , H ₂ O	40-250°C	5-6
Mn ₅ O ₈	ALD	80°C	1 Torr	O ₃	150-180°C	7
TiMn _x O _y	ALD	80°C	-	Ti(O ⁱ Pr) ₄ , H ₂ O	200°C	8
MnS	ALD	100°C	0.2-0.3 Torr	H ₂ S	100-225°C	9
MnF ₂	ALD	100°C	-	HF·Py	150°C	10
MnO _x N _y	PEALD	130°C	9 Torr	^{PL} NH ₃	200-350°C	11

References:

1. [Appl. Phys. Lett. 2008, 93, 032106.](#)
2. [IEEE Trans. Device Mater. Reliab. 2011, 11, 295.](#)
3. [J. Cryst. Growth 2008, 310, 5464.](#)
4. [Thin Solid Films 2009, 517, 5658.](#)
5. [ACS Appl. Nano Mater. 2019, 2, 267.](#)
6. [ACS Appl. Energy Mater. 2020, 3, 603.](#)
7. [ACS Appl. Mater. Interfaces 2016, 8, 18560.](#)
8. [ACS Catal. 2015, 5, 1609.](#)
9. [ACS Appl. Mater. Interfaces 2016, 8, 2774.](#)
10. [Chem. Mater. 2016, 28, 2022.](#)
11. [ACS Appl. Electron. Mater. 2020, 2, 1653.](#)