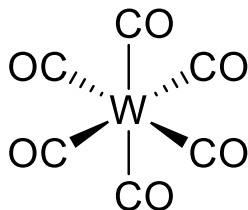


Catalog # 74-2202 Tungsten carbonyl, 99% (99.9+%-W) sublimed



Thermal Behavior:

- Vapor pressure: 0.8 Torr at 40 °C [11]

Technical Notes:

1. Carbonyl precursor for the deposition of tungsten containing materials

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
W	CVD	70 °C	760 Torr	-	350-500 °C	[1]
W	FIBID		4 μTorr	He beam		[14]
WO ₃	ALD	20-23 °C	0.8-2.3 Torr	O ₃	160-250 °C	[3, 4]
WO _x	ALD	80 °C	4.2 Torr	H ₂ O ₂	180-200 °C	[5]
WO ₃	ALD	70 °C	0.3 Torr	H ₂ O	300 °C	[7]
WO _x	ALD			air	200 °C	[12]
W _x Mo _y O _z	CVD	90 °C	760 Torr	Mo(CO) ₆ , O ₂	200 °C	[2]
WN _x	ALD	20 °C	1 Torr	NH ₃	170-220 °C	[6]
WS ₂	ALD		1 Torr	H ₂ S	155-230 °C	[8]
WS ₂	PEALD	40 °C		H ₂ S plasma	350 °C	[11,13]
WSe ₂	CVD	30 °C	728 Torr	Me ₂ Se, H ₂ Se	400-800 °C	[9, 10]

References:

1. [J. Appl. Phys. 1995, 77, 6070.](#)
2. [Chem. Vap. Deposition 2006, 12, 231.](#)
3. [Chem. Vap. Deposition 2012, 18, 245.](#)

4. [Energy Procedia 2014, 54, 782.](#)
5. [AIChE J, 2014, 60: 1278.](#)
6. [Phys. Chem. Chem. Phys., 2015, 17, 17445.](#)
7. [ECS Trans. 2015, 69, 199.](#)
8. [RSC Adv., 2016, 6, 38024.](#)
9. [Journal of Elec. Materi. 2016, 45, 6273.](#)
10. [Journal of Elec. Materi. 2016, 45, 6280.](#)
11. [Appl. Surf. Sci. 2018, 459, 596.](#)
12. [Catalysts 2018, 8, 292.](#)
13. [Electrochim. Acta 2019, 322, 134766.](#)
14. [Appl. Phys. Lett. 2019, 114, 102601.](#)