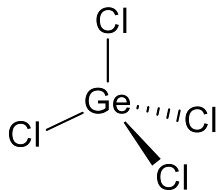
Catalog # 32-0650 Germanium(IV) chloride (99.99%-Ge) PURATREM



Thermal Behavior:

- Melting point: -49.8°C [1]
- Boiling point: 86.55°C [1]
- Vapor pressure: 76 Torr/20°C; data is also available in [1]

Technical Notes:

1. ALD/CVD precursor for Ge thin film deposition

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
Ge	ALD	-	-	H· radicals	300°C	2
Ge_xSi_{1-x}	CVD	RT	-	$SiF_4 \rightarrow SiF_2$	450-700°C	3
$GeSe_2$	PECVD	-	2.5 Torr	Me_2Se, H_2; Et_2Se	125-140°C 120-150°C	4 5
GeS_2	PECVD	-	2.5 Torr	H_2S, Et_2S	120-150°C	5
$GeTe_2$	ALD	-	-	$Te(GeMe_3)_2$	-	6
$Si_xGe_{1-x}O_2$	PECVD	-	2.5 Torr	$SiCl_4$, CO_2	-	7

References:

1. *Chem. Vap. Deposition* **2007**, *13*, 199.
2. *Jpn. J. Appl. Phys.* **2000**, *39*, 2536.
3. *J. Mater. Chem.*, **2001**, *11*, 687.
4. *Plasma Chem. Plasma Process*, **2011**, *31*, 251.
5. *Plasma Chem. Plasma Process*, **2014**, *34*, 755.
6. *J. Nanosci. Nanotechnol.* **2017**, *17*, 3472.
7. *J. Non-Crystalline Solids* **2012**, *358*, 1538.