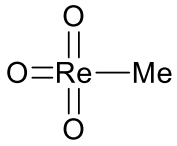
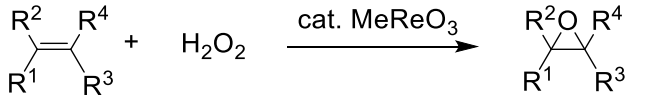
Catalog # 75-2375 Methyltrioxorhenium (VII), 98%



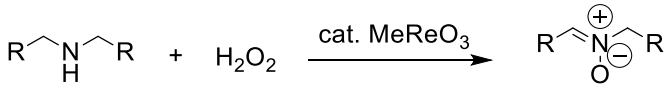
Catalysis Applications

Technical Notes:

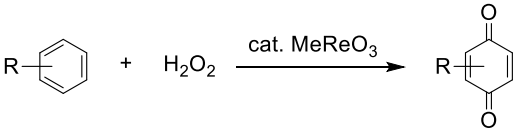
1. Catalyst used with H_2O_2 for oxidation of a variety of substrates.
2. (a) Alkenes
3. (b) Secondary amines
4. (c) Arenes
5. (d) Silyl enol ethers/Silyl ketene acetals
6. (e) Sulfides
7. (f) Bayer-Villager-Type oxidation
8. (g) Amine oxidation
9. (h) Phenol oxidation



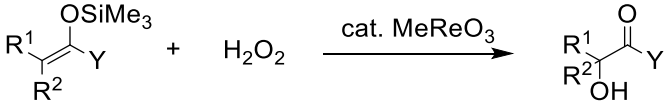
Tech Note (1a)
Ref. (1-3)



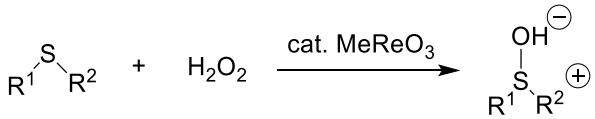
Tech Note (1b)
Ref. (4-6)



Tech Note (1c)
Ref. (7)

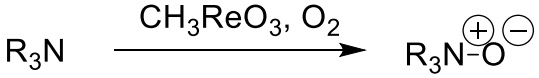


Tech Note (1d)
Ref. (8,9)

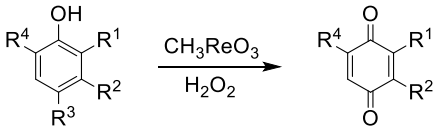


Tech Note (1e)
Ref. (10)

Tech Note (1f)
Ref. (11)



Tech Note (1g)
Ref. (12)



Tech Note (1h)
Ref. (13)

References:
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2. *Tetrahedron Lett.*, **1999**, *40*, 3991.
3. *J. Org. Chem.*, **2000**, *65*, 8651.
4. *Tetrahedron Lett.*, **1996**, *37*, 6025.
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10. *Tetrahedron Lett.*, **1994**, *50*, 13121.
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CVD/ALD Applications

Thermal Behavior:

- Melting point: 110 °C [1]
- TGA data available in [2] and [3]
- Thermal decomposition (under CVD conditions) above 300 °C [2]

Technical Notes:

1. Mixed alkyl-oxide precursor for the deposition of **rhenium containing** thin films by CVD and ALD with high volatility and high thermal stability.

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
ReOx (1<x<2)	CVD	70 °C	0.8 mTorr	MTO only	350-450 °C	[2]
Re	PECVD	70 °C	0.2 Torr	H2 plasma	300-450 °C	[2]
ReAlxOy	ALD	70 °C		TMA	100-180 °C	[3]
ReAl2O3CH3	ALD	63 °C	0.9 Torr	TMA	75-300 °C	[4]

References:
1. *Inorg. Chem.* **1979**, *18*, 8, 2318
2. *J. Organomet. Chem.*, **1998**, *553*, 443.
3. *ACS Appl. Mater. Interfaces*, **2017**, *9*, 35067.

4. *Chem. Mater.*, **2019**, *31*, 7821.