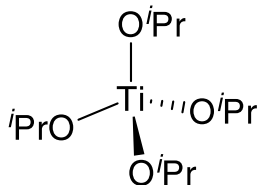


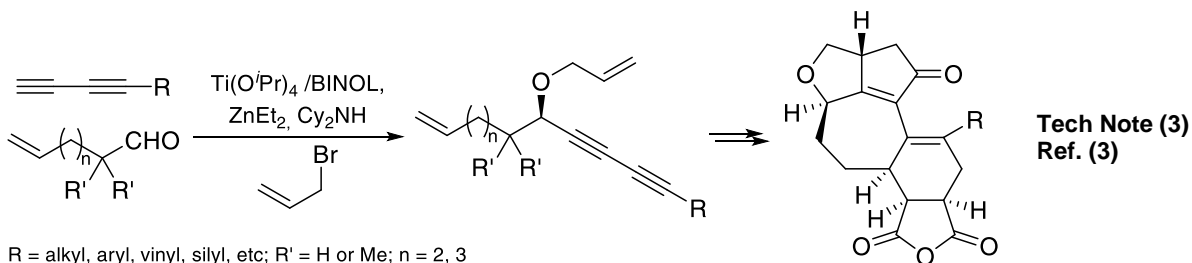
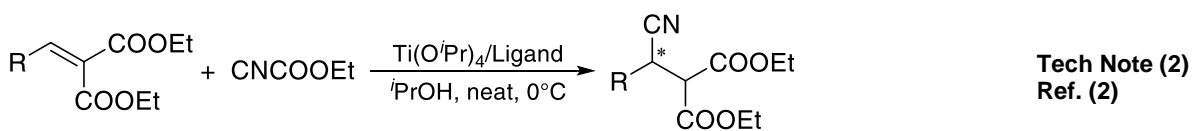
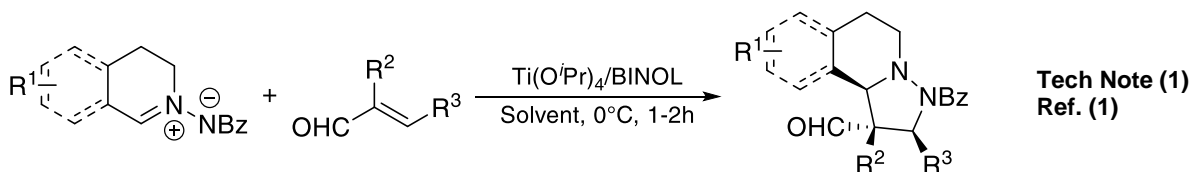
Catalog # 93-2216 Titanium(IV) i-propoxide, min. 98%



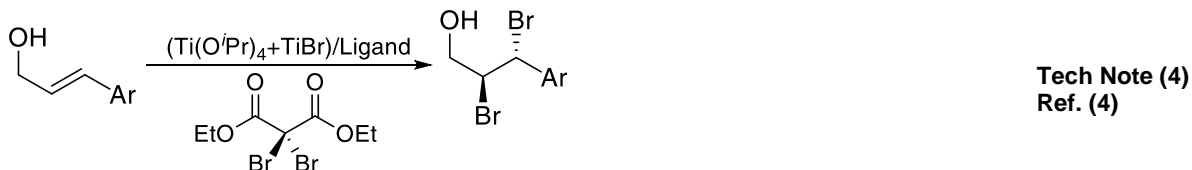
Catalysis Applications

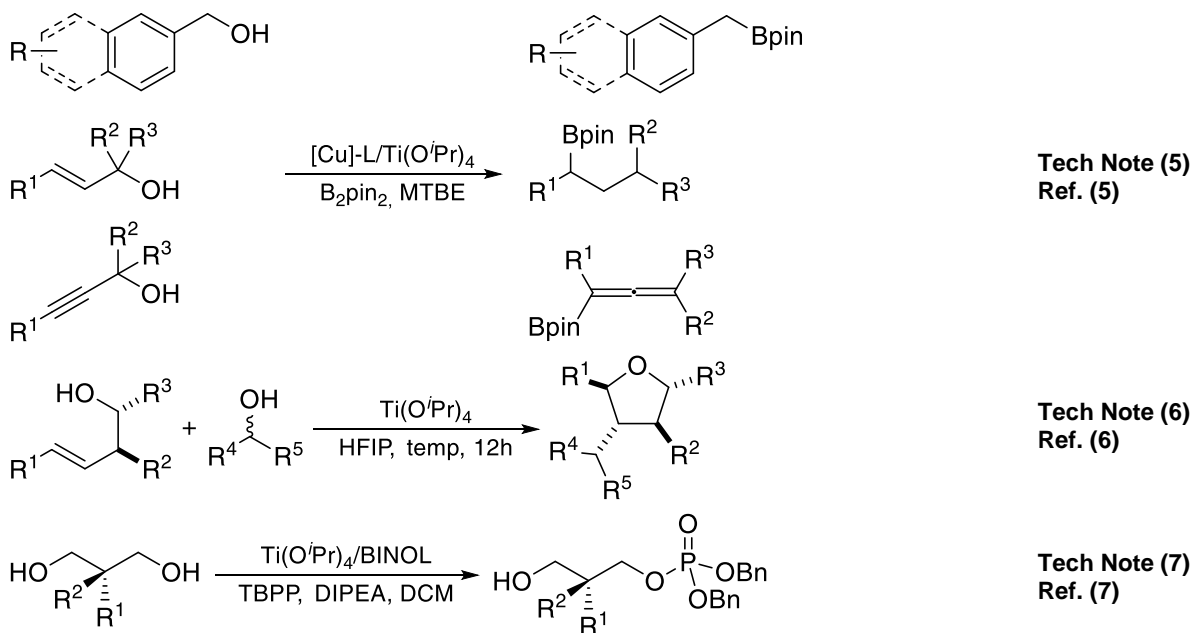
Technical Notes:

1. Used in catalytic enantioselective 1,3-dipolar cycloaddition of C,N-cyclic azomethine imines with α,β -unsaturated aldehydes.
2. Catalyst for the asymmetric cyanation of activated olefins with ethyl cyanoformate.
3. Catalyst used for highly enantioselective (83-95% ee) addition of various 1,3-diyne with aldehydes to generate various polycyclic compounds.
4. Used in catalytic enantioselective dibromination of allylic alcohols.
5. Co-catalyst used in the synthesis of menzyl-, allyl-, and allenyl-boronates via Cu-catalyzed borylation of alcohols.
6. Used for the stereoselective synthesis of highly functionalized oxygen heterocycles using allyl or benzyl alcohols as alkylating agents.
7. Catalyst used for desymmetrization of diols by phosphorylation.



R = alkyl, aryl, vinyl, silyl, etc; R' = H or Me; n = 2, 3





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CVD/ALD Applications

Thermal Behavior:

- Melting point: 16-20°C
- Boiling point: 232°C, 58°C/1 Torr, 101-104°C/10 Torr
- Vapor pressure: 0.075 Torr/20°C, 1 Torr/63°C

Technical Notes:

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

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
TiO ₂	ALD	RT	2 Torr	H ₂ O	80-200°C	1
	ALD	-	-	H ₂ O	150°C	2
	ALD	80°C	-	H ₂ O	200°C	3
	PE-ALD	RT	-	H ₂ O or ^{PL} O ₂	400°C	4
	PE-ALD	45°C	-	^{PL} O ₂	25-400°C	5
	-	-	-	3 Torr	N ₂ O or ^{PL} O ₂	250°C

	ALD	-	-	O ₃	250°C	7
	ALD	-	3 Torr	NH ₃ /O ₂	140°C	8
	ALD	80°C	-	RCOOH	50-350°C	9
	Photo-ALD	60°C	7.5 Torr	Photons	150-300°C	10
BaTiO ₃	PE-ALD	55°C	-	Ba(Pr ₃ Cp) ₂ , ^{PL} O ₂	250-300°C	11
SrTiO ₃	ALD	50°C	-	Sr(thd) ₂ , H ₂ O or ^{PL} H ₂ O	190-270°C	12
BpTiO ₃	ALD	40°C	1.5-2.25 Torr	Ph ₄ Pb, O ₃ or H ₂ O	250-300°C	13
Li _x Ti _y O _z	ALD	RT	2.25 Torr	LiO ^{Bu} ,	225°C	14
NiTiO ₃	ALD	-	2.25 Torr	Ni(acac) ₂ /O ₃ , H ₂ O	175-275°C	15
In _x Ti _y O	PE-ALD	RT	2 Torr	InMe ₃ , ^{PL} O ₂	200°C	16
Ga _x Ti _y O	PE-ALD	-	-	GaEt ₃ / ^{PL} O ₂ , H ₂ O	120°C	17

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