

ZnTAC24®

ZnTAC24®, a mixture of Zn-Cluster $[Zn_4(OCOCF_3)_6O]$ developed by Mashima group at Osaka university and its trifluoroacetic acid adduct, catalyzes a wide variety of condensation reactions such as oxazoline syntheses and transesterifications.

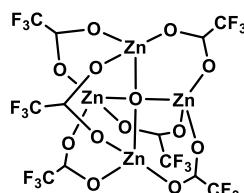
- (1) **Oxazoline synthesis;** Easily available carboxylic acids and esters can be utilized instead of nitrile compounds. In the case that chiral amino alcohols are used, loss of optical purity does not occur.
- (2) **Transesterification;** Less expensive carboxylic acid esters can be used as an acylating reagents. In reactions between amino alcohols and esters, *O*-acylated compounds are obtained with high chemoselectivity.
- (3) **ZnTAC24®** is also employed for protection/deprotection of hydroxyl groups coexisting with acid-sensitive functional groups.

"ZnTAC24" is a registered trademark of Takasago International Corporation in Japan and other countries.

ZnTAC24®

Oxo[hexa(trifluoroacetato)]tetrazinc and its trifluoroacetic acid adduct

CAS No.	906672-87-5 : (n=0), 1299489-47-6 : (n=1)
Formula	$Zn_4(OCOCF_3)_6(O)(CF_3CO_2H)_n$: (n=0-1)
M.W.	955.61 : (n=0), 1069.63 : (n=1)
Specification	Zn content: >24wt%

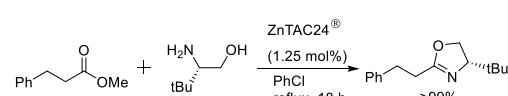


$(CF_3CO_2H)_n$: (n=0-1)

Ohshima, T.; Matsushima, Y.; Mashima, K. *Catalysis Science & Technology*, **2011**, 1, 230.
doi: [10.1039/C0CY00048E](https://doi.org/10.1039/C0CY00048E)
JP5095415B, JP4317261B, EP1958940B, US7888513B, [WO2007066617A](https://www.wipo.int/pctdb/en/pct/2007/066617A.html) & [WO2011030591A](https://www.wipo.int/pctdb/en/pct/2011/030591A.html) (Takasago)

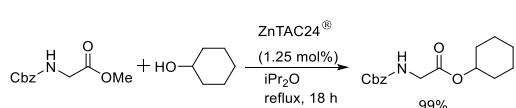
Tech Note

1 Oxazoline Synthesis



Ohshima, T.; Mashima, K. *Chem. Commun.* **2006**, 2711.
doi: [10.1039/B605066B](https://doi.org/10.1039/B605066B)

2 Transesterification



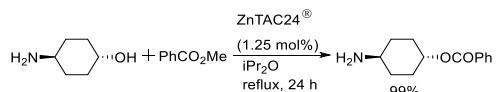
Ohshima, T.; Mashima, K. *J. Org. Chem.* **2008**, *73*, 5147.
doi: [10.1021/jo800625v](https://doi.org/10.1021/jo800625v)

Ohshima, T.; Mashima, K. *ACS Catal.* **2011**, *1*, 1178.
doi: [10.1021/cs200224b](https://doi.org/10.1021/cs200224b)

Ohshima, T.; Mashima, K. *Synlett* **2012**, *1*, 137-141.
doi: [10.1055/s-0031-1290096](https://doi.org/10.1055/s-0031-1290096)

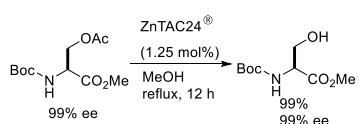
Ohshima, T.; Matsushima, Y. *Green Chem.*, **2016**, *18*, 1524.
doi: [10.1039/C5GC02056E](https://doi.org/10.1039/C5GC02056E)
JP6484876B, US9611279B,
DE112014001645T5, [WO2014157524A](https://wo2014157524a)
(Takasago)

3 High Chemoselectivity Esterification



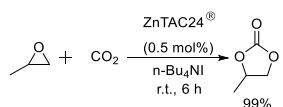
Ohshima, T.; Mashima, K. *J. Am. Chem. Soc.* **2008**, *130*, 2944.
doi: [10.1021/ja711349r](https://doi.org/10.1021/ja711349r)

4 Deacylation



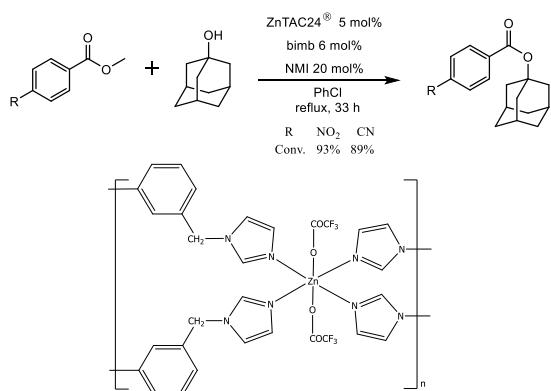
Ohshima, T.; Mashima, K. *Chem. Eur. J.* **2010**, *16*, 11567.
doi: [10.1002/chem.201000960](https://doi.org/10.1002/chem.201000960)

5 Cyclic carbonate synthesis



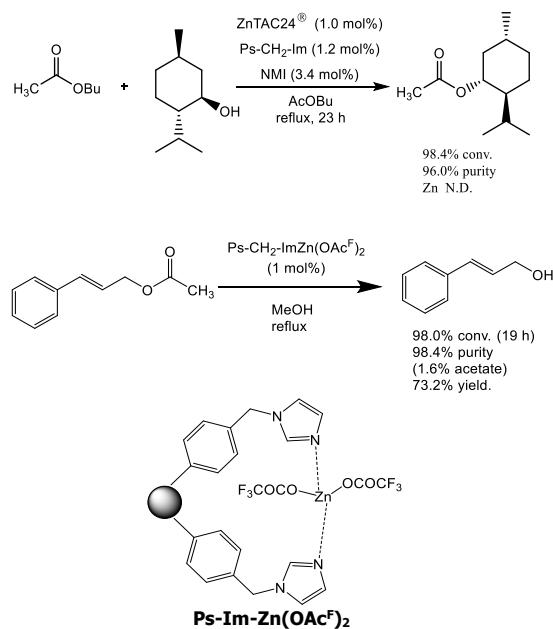
Ohshima, T.; Mashima, K. *Catalysis Science & Technology*, **2012**, *2*, 509.
doi: [10.1039/C1CY00404B](https://doi.org/10.1039/C1CY00404B)
Ohshima, T.; Matsushima, Y.; Mashima, K. *Catalysis Science & Technology*, **2011**, *1*, 230.
doi: [10.1039/C0CY00048E](https://doi.org/10.1039/C0CY00048E)

6 Ladder Zinc catalysts



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7 Recyclable Heterogeneous Zinc/Imidazole Catalysts



Matsushima, Y. ; Ohshima, T. *Adv. Synth. Catal.*

2016, **358**, 2569.

doi: [10.1002/adsc.201600229](https://doi.org/10.1002/adsc.201600229)
[WO2017142028A](https://www.wipo.int/pctdb/en/pct/2017/142028A.html)(Takasago)