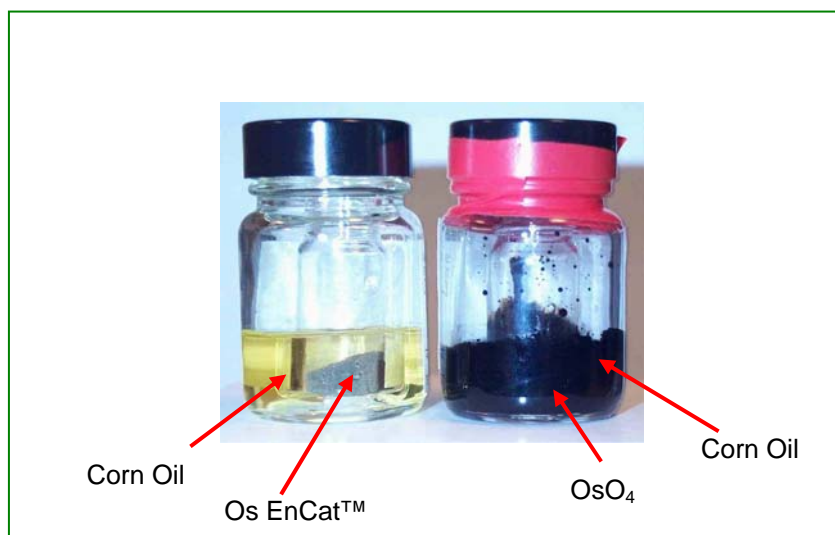


Os EnCat™

Encapsulated osmium tetroxide catalyst

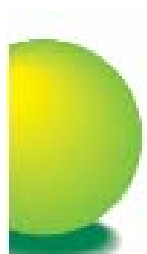
Reaxa's Os EnCat™ catalyst incorporates osmium tetroxide within a porous polymer bead resulting in safer handling with low levels of osmium contamination in oxidation reactions



In the above picture, a sample of Os EnCat™ 40 does not decompose in corn oil, indicating no release of volatile osmium in the headspace, whereas a sample of osmium tetroxide quickly gives decomposition in corn oil to a black tar

| | |
|----------------------------------|--|
| Cleaner products | typically less than 20 ppm Os in crude reaction products |
| Cleaner waste streams | minimal metal losses in Os EnCat™ processes |
| Fast, efficient processes | EnCat™ beads filter easily |
| No plant contamination | metal remains trapped within the polymer bead |
| Improved processes | high activity and selectivity in many types of reduction reactions |
| Process intensification | EnCat™ can be used in batch and continuous flow processes |

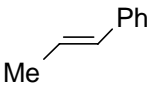
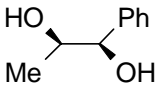
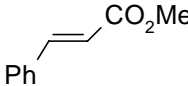
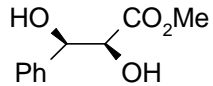
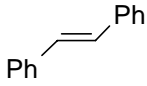
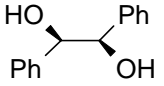
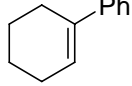
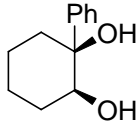
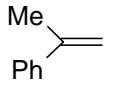
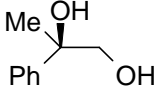
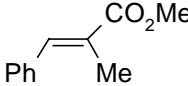
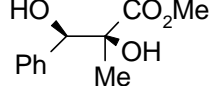
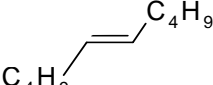
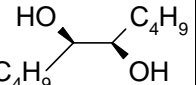
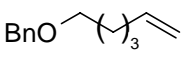
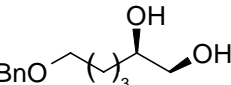
| Product | Sigma-Aldrich Catalogue # | Os Metal Content % w/w | OsO ₄ Loading mmol/g | Particle Size Range μm (average) |
|--------------|---------------------------|------------------------|---------------------------------|----------------------------------|
| Os EnCat™ 40 | 658685 | 4.8 - 5.7 | 0.25 - 0.30 | 40 - 300 (165) |



Os EnCat™

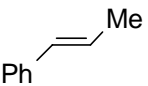
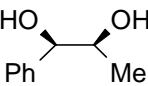
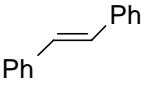
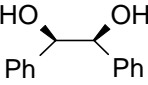
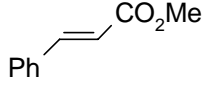
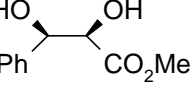
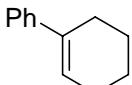
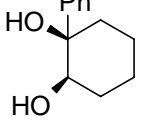
Applications

Dihydroxylation reactions:

| Substrate | Product | Yield (%) | Substrate | Product | Yield (%) |
|---|---|-----------|---|---|-----------|
|  |  | 80 |  |  | 83 |
|  |  | 84 |  |  | 82 |
|  |  | 90 |  |  | 85 |
|  |  | 84 |  |  | 73 |

Olefin (1 mmol), NMO (1.3 mmol), 5 mol% Os EnCat™, acetone/water, RT, 12-20 h

Asymmetric dihydroxylation reactions:

| Substrate | Product | Yield (%) | ee (%) |
|---|---|-----------|--------|
|  |  | 98 | 94 |
|  |  | 88 | >99 |
|  |  | 94 | >99 |
|  |  | 91 | 97 |

5 mol% Os EnCat™/(DHQD)₂PHAL, MeSO₂NH₂, K₃Fe(CN)₆, K₂CO₃, THF/water, RT, 24-48 h

For more information about EnCat™ catalysts please visit: www.reaxa.com/encat
For EnCat™ samples and test kits please visit: www.reaxa.com/samples
For bulk quotations on EnCat™ products contact: info@reaxa.com

