WE CLAIM:

1. A rhenium-promoted epoxidation catalyst comprising at least one catalytic species and a promoting amount of rhenium deposited on a shaped porous body, wherein the shaped porous body comprises a minimized percentage of its total pore volume being present in pores having diameters of less than one micron, and a surface area of at least about 1.0 m^2/g.

2. The catalyst of claim 1, further comprising an additional promoter.

3. The catalyst of claim 2, wherein the additional promoter comprises molybdenum, tungsten, lithium, sulfur, manganese, rubidium, cesium, sodium or combinations of these.

4. The catalyst of claim 3, wherein the additional promoter comprises cesium.

5. The catalyst of claim 1, wherein less than about 25% of the total pore volume of the shaped porous body comprises pores having diameters of less than one micron.

6. The catalyst of claim 1, wherein the percentage of the total pore volume of the shaped porous body being present in pores having diameters of between about 1 micron and about 5 microns is maximized.

7. The catalyst of claim 6, wherein the percentage of the total pore volume of the shaped porous body present in pores having diameters of between about 1 micron and about 5 microns is at least about 75%.

8. The catalyst of claim 1, wherein the shaped porous body comprises a surface area of greater than about 1.15 m^2/g.

~~9. The catalyst of claim 8, wherein the shaped porous body comprises a surface area of greater than about 1.3 m^2/g.~~

~~10. The catalyst of claim 1, wherein the shaped porous body comprises alpha-alumina.~~

~~11. The catalyst of claim 9, wherein the alpha-alumina is fluoride affected.~~

~~12. A process for making a rhenium-promoted epoxidation catalyst comprising:~~

~~a) selecting a shaped porous body comprising a minimized percentage of its total pore volume being present in pores having diameters of less than one micron, and a surface area of at least about 1.0 m^2/g; and~~

~~b) depositing at least one catalytic species and a promoting amount of rhenium on the shaped porous body.~~

~~13. The process of claim 12, wherein less than about 25% of the total pore volume of the shaped porous body comprises pores having diameters of less than one micron.~~

~~14. The process of claim 12, wherein the percentage of the total pore volume of the shaped porous body present in pores having diameters of between about 1 micron and about 5 microns is at least about 75%.~~

WE CLAIM:

~~15~~1. An epoxidation process ~~for the epoxidation of an alkylene~~, comprising reacting, under epoxidation conditions, a feed comprising ~~one or more alkylenes~~ethylene and oxygen in the presence of ~~the catalyst of claim 1~~an epoxidation catalyst comprising silver and a promoting amount of rhenium deposited on a shaped porous body, wherein the shaped porous body comprises less than 20% of its total pore volume being present in pores having diameters of less than 1 micron, and a surface area of at least about 1.3 m^2/g, wherein the catalyst exhibits a higher activity and/or selectivity when used in the process than a catalyst supported on shaped porous bodies having a greater percentage of their total pore volume in pores having diameters of less than one micron.

~~16. A process for the epoxidation of an alkylene, comprising reacting a feed comprising one or more alkylenes and oxygen in the presence of the catalyst as produced by the process of claim 12.~~

~~17. A process for preparing a 1,2-diol, a 1,2-diol ether, a 1,2-carbonate, or an alkanolamine comprising converting an alkylene oxide prepared by the process of claim 15 into the 1,2-diol, 1,2-diol ether, a 1,2-carbonate, or alkanolamine.~~

~~18. A process for preparing a 1,2-diol, a 1,2-diol ether, a 1,2-carbonate, or an alkanolamine comprising converting an alkylene oxide prepared by the process of claim 16 into the 1,2-diol, 1,2-diol ether, a 1,2-carbonate, or alkanolamine.~~

2. The process of claim 1, carried out in the gas phase.

3. The process of claim 2, conducted at a temperature of from 200°C to 300°C.

4. The process of claim 2 or 3, conducted at a pressure of from ambient to 3.0 MPa.

5. The process of claim 1, further comprising converting the ethylene oxide produced into a 1,2-diol, 1,2-diol ether, a 1,2-carbonate, or alkanolamine.

6. The process of claim 5, wherein the conversion comprises reacting the ethylene oxide with water and/or alcohol to produce one or more 1,2-diols or 1,2-diol ethers.

7. The process of claim 6, wherein reaction of ethylene oxide and water is conducted in the presence of an acidic or basic catalyst.

8. The process of claim 7, wherein the catalyst is acidic and comprises 0.5 wt% to 1.0 wt% sulfuric acid.

9. The process of 6 or 8, wherein the process is conducted in the liquid phase at a temperature of from 50°C to 70°C.

10. The process of claim 6 or 8, wherein the process is conducted in the gas phase at a temperature of from 130°C to 240°C.

11. The process of claim 5, wherein the conversion comprises reacting the ethylene oxide with ammonia to produce one or more alkanolamines.

12. The process of claim 11, wherein anhydrous ammonia is used and a monoalkanolamine is produced.

13. The process of claim 5, wherein the conversion comprises reacting the ethylene oxide with carbon dioxide to provide a 1,2-carbonate.