PCT CLAIMS

1. A process for producing phenol and cyclohexanone, the process comprising:

(a) contacting a feed comprising cyclohexylbenzene hydroperoxide and 1 ppm to 15,000 ppm of water, based upon total weight of the feed, with a cleavage catalyst comprising an aluminosilicate of the FAU type under cleavage conditions effective to convert at least a portion of the cyclohexylbenzene hydroperoxide into phenol and cyclohexanone.

2. The process of claim 1, wherein the water is present in said feed in an amount ranging from 10 to 10,000 ppm based upon total weight of feed.

3. The process of claim 1 or claim 2, wherein water is present in said feed in an amount ranging from 100 to 5,000 ppm based upon total weight of feed.

4. The process of any one of the preceding claims, wherein the feed comprises from 0.5 wt% to 49.5 wt% cyclohexylbenzene hydroperoxide, based upon total weight of the feed.

5. The process of any one of the preceding claims, wherein the feed comprises at least 50 wt% cyclohexylbenzene, based upon total weight of the feed.

6. The process of any one of the preceding claims, wherein the FAU type zeolite has a unit cell size less than or equal to 24.35 Å.

7. The process of any one of the preceding claims, wherein the FAU type zeolite has a unit cell size less than or equal to 24.30 Å.

8. The process of any one of the preceding claims, wherein the cleavage conditions include a temperature of about 20°C to about 200°C and a pressure of about 100 kPa, gauge to about 2000 kPa, gauge.

9. The process of any one of the preceding claims, wherein the contacting step (a) is conducted in at least one fixed bed reactor.

10. The process of any one of the preceding claims, wherein the contacting step (a) is conducted in at least a first reactor and a second reactor connected in series.

11. The process of any one of the preceding claims, wherein the contacting step (a) is conducted in at least a first reactor and a second reactor connected in parallel.

12. The process of any one of the preceding claims, comprising a cleavage catalyst loading of greater than 0.1 wt%, the percentage being expressed as an amount of cleavage catalyst per amount of feed.

13. The process of any one of the preceding claims, wherein the cleavage catalyst is continuously or periodically added to the contacting step (a) to maintain conversion at a given