Claims.

1. A catalyst combination comprising a precious metal ammonia oxidation catalyst gauze on a supporting framework and a particulate catalyst disposed in a catalyst containment unit comprising two concentric perforate members defining an annular space in which a particulate catalyst may be placed, and process fluid-impermeable end members mounted on the ends of the perforate members, wherein one end member extends across the unit to provide a closed end and the other end member closes the annular space thereby providing an open end through which gases may enter or exit the unit, and suspending means attached to one or both end members ~~by which the unit may be secured within a reactor~~.

2. A catalyst combination according to claim 1 wherein the perforate members are cylindrical steel meshes, or one or both perforate members comprise one or more platinum catalyst gauzes and/or one or more palladium catchment gauzes.

3. A catalyst combination according to claim 1 or claim 2 wherein the perforate members are cylindrical, the closed end member is circular with a diameter at least that of the outer perforate member, and the open end member is ring shaped with a central hole of diameter at most equal to that of the inner perforate member.

4. A catalyst combination according to any one of claims 1 to 3 wherein the suspending means are provided by extending the end member forming the open end of the unit.

5. A catalyst combination according to any one of claims 1 to 4 containing a particulate ammonia oxidation catalyst, a particulate nitrous oxide abatement catalyst or a mixture or layered combination thereof.

6. A catalyst combination according to any one of claims 1 to 5 wherein the precious metal ammonia oxidation catalyst is platinum (Pt) or a platinum alloy, such as an alloy of platinum with rhodium (Rh) and/or palladium (Pd) containing ≥85% preferably ≥90% Pt by weight.

7. A catalyst combination according to any one of claims 1 to 6 wherein a palladium catchment gauze is provided underneath the precious metal catalyst.

8. A catalyst combination according to any one of claims 1 to 7 wherein the supporting framework for the gauzes comprises a girder support arrangement or is a basket in which the precious metal gauzes are supported on the base of a cylindrical unit.

9. A catalyst combination according to any one of claims 1 to 8 wherein the containment unit is separate from the supporting framework for the precious metal gauzes, or is fixed to the precious metal supporting framework using the suspending means.

10. An ammonia oxidation process comprising the step of passing a gas mixture comprising ammonia, an oxygen containing gas ~~such as air~~ and optionally a methane containing gas through a catalyst combination comprising a precious metal ammonia oxidation catalyst gauze on a supporting framework and then through a particulate catalyst disposed in a catalyst containment unit comprising two concentric perforate members defining an annular space in which a particulate catalyst may be placed, and process fluid-impermeable end members mounted on the ends of the perforate members, wherein one end member extends across the unit to provide a closed end and the other end member closes the annular space thereby providing an open end through which gases may enter or exit the unit, and suspending means attached to one or both end members~~according to any one of claims 1 to 9~~.

~~11. An ammonia oxidation process according to claim 10 comprising passing a gas mixture comprising ammonia, an oxygen containing gas such as air and optionally a methane containing gas through a precious metal catalyst gauze on a supporting framework and then through a particulate catalyst disposed in the catalyst containment unit.~~

~~12.~~11. An ammonia oxidation process according to claim 10 ~~or claim 11~~ operated at temperatures of 750-1000°C, pressures of 1 to 15 bar abs., with ammonia in air concentrations of 7-13% by volume.

~~13.~~12. A process according to ~~any one of claims 10 to 12~~claim 10 or claim 11 operated at pressures in the range 6-15 bar abs.

~~14.~~13. A method of retrofitting an ammonia oxidation vessel comprising suspending a catalyst containment unit beneath an existing precious metal catalyst gauze support frame, the catalyst containment unit comprising two concentric perforate members defining an annular space in which a particulate catalyst may be placed, and process fluid-impermeable end members mounted on the ends of the perforate members, wherein one end member extends across the unit to provide a closed end and the other end member closes the annular space thereby providing an open end through

which gases may enter or exit the unit, and suspending means attached to one or both end members ~~by which the unit may be secured within a reactor, beneath an existing precious metal catalyst gauze support frame~~.

~~15.~~14. A method according to claim ~~14~~ 13 comprising fixing the catalyst containment unit to the existing precious metal catalyst gauze support frame.