CLAIMS

What is claimed is:

1. A manufacturing apparatus for depositing a material on a carrier body, said manufacturing apparatus comprising:

a base plate;

a housing having a flange for coupling with said base plate to define a reaction chamber;

an inlet defined by said housing for introducing a deposition composition, which comprises the material or a precursor thereof into said reaction chamber; and

at least one gasket disposed between said base plate and said housing for sealing between said housing and said base plate for preventing the deposition composition from escaping said reaction chamber;

wherein said gasket comprises a flexible graphite material for preventing said gasket from contaminating the material within said reaction chamber.

2. A manufacturing apparatus as set forth in claim 1 wherein said flexible graphite material contributes less than 10 parts per million atomic of impurities to the material deposited on the carrier body.

3. A manufacturing apparatus as set forth in any preceding claim wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

4. A manufacturing apparatus as set forth in any preceding claim wherein said flexible graphite material is purified with chlorine to remove phosphorous from said flexible graphite material.

5. A manufacturing apparatus as set forth in any preceding claim wherein said flexible graphite material consists essentially of graphite.

6. A manufacturing apparatus as set forth in any preceding claim wherein said base plate defines a groove and wherein a finger extends from said flange of said housing for engaging said groove of said base plate.

7. A manufacturing apparatus as set forth in claim 6 wherein said gasket is disposed within said groove of said base plate with said finger contacting said gasket to compress said gasket for sealing between said housing and said base plate.

8. A manufacturing apparatus as set forth in claim 6 wherein said gasket is disposed on said base plate adjacent said groove within said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

9. A manufacturing apparatus as set forth in claim 6 wherein said gasket is disposed on said base plate adjacent said groove outside of said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

10. A manufacturing apparatus as set forth in claim 6 wherein said at least one gasket is further defined as a first gasket disposed within said groove and a second gasket disposed on said base plate adjacent said groove outside said reaction chamber with said finger contacting said first gasket to compress said first gasket for sealing between said housing and said base plate and with said flange contacting said second gasket to compress said second gasket to further seal between said housing and said base plate.

11. A manufacturing apparatus as set forth in any preceding claim wherein said gasket comprises a plurality of segments with each of said segments contacting each other to form said gasket.

12. A manufacturing apparatus as set forth in claim 11 wherein each of said segments overlap one another for forming said gasket.

13. A manufacturing apparatus as set forth in claim 11 wherein each of said segments comprise a first end defining a recess and a second end having a leg with said leg of one of said segments engaging said recess of another one of said segments for interlocking said segments to form said gasket.

14. A manufacturing apparatus as set forth in claim 11 wherein each of said segments comprise a first end and a second end with each of said ends defining a notch on opposing sides of said segment with said first end of one of said segments engaging said notch of another one of said segments for interlocking said segments to form said gasket.

15. A gasket for use in a manufacturing apparatus which deposits a material on a carrier body, wherein the manufacturing apparatus includes a housing and a base plate defining a reaction chamber with said gasket sealing between the housing and the base plate of the manufacturing apparatus to prevent a deposition composition, which comprises the material or a precursor thereof, from escaping the reaction chamber, said gasket comprising a flexible graphite material that contributes less than 10 parts per million atomic of impurities to the material deposited on the carrier body.

16. A gasket as set forth in claim 15 wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

17. A gasket as set forth in any of claims 15 and 16 wherein said flexible graphite material is purified with chlorine to remove phosphorous from said flexible graphite material.

18. A gasket as set forth in any of claims 15-17 wherein said flexible graphite material consists essentially of graphite.

19. A gasket as set forth in any of claims 15-18 comprising a plurality of segments with each of said segments contacting each other to form said gasket.

20. A gasket as set forth in claim 19 wherein each of said segments overlap one another for forming said gasket.

21. A gasket as set forth in claim 19 wherein each of said segments comprise a first end defining a recess and a second end having a leg with said leg of one of said segments engaging said recess of another one of said segments for interlocking said segments to form said gasket.

22. A gasket as set forth in claim 19 wherein each of said segments comprise a first end and a second end with each of said ends defining a notch on opposing sides of said segment with said first end of one of said segments engaging said notch of another one of said segments for interlocking said segments to form said gasket.

23. A Siemens type chemical vapor deposition reactor for depositing silicone on a silicon slim rod for producing high purity polycrystalline silicon, said Siemens type chemical vapor deposition reactor:

a base plate;

a housing having a flange for coupling with said base plate to define a reaction chamber;

an inlet defined by said housing for introducing a deposition composition, which comprises the silicon or a precursor thereof into said reaction chamber; and

at least one gasket disposed between said base plate and said housing for sealing between said housing and said base plate for preventing the deposition composition from escaping said reaction chamber;

wherein said gasket comprises a flexible graphite material for preventing said gasket from contaminating the silicon deposited on the silicon slim rod within said reaction chamber.

24. A Siemens type chemical vapor deposition reactor as set forth in claim 23 wherein said flexible graphite material contributes less than 10 parts per million atomic of impurities to the silicon deposited on the silicon slim rod.

25. A Siemens type chemical vapor deposition reactor as set forth in any of claims 23 and 24 wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

26. A Siemens type chemical vapor deposition reactor as set forth in any of claim 23-25 wherein said flexible graphite material is purified with chlorine to remove phosphorous from said flexible graphite material.

27. A Siemens type chemical vapor deposition reactor as set forth in any of claims 23-26 wherein said flexible graphite material consists essentially of graphite.

28. A Siemens type chemical vapor deposition reactor as set forth in any of claims 23-27 wherein said base plate defines a groove and wherein a finger extends from said flange of said housing for engaging said groove of said base plate.

29. A Siemens type chemical vapor deposition reactor as set forth in claim 28 wherein said gasket is disposed within said groove of said base plate with said finger

contacting said gasket to compress said gasket for sealing between said housing and said base plate.

30. A Siemens type chemical vapor deposition reactor as set forth in claim 28 wherein said gasket is disposed on said base plate adjacent said groove within said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

31. A Siemens type chemical vapor deposition reactor as set forth in claim 28 wherein said gasket is disposed on said base plate adjacent said groove outside of said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

32. A Siemens type chemical vapor deposition reactor as set forth in claim 28 wherein said at least one gasket is further defined as a first gasket disposed within said groove and a second gasket disposed on said base plate adjacent said groove outside said reaction chamber with said finger contacting said first gasket to compress said first gasket for sealing between said housing and said base plate and with said flange contacting said second gasket to compress said second gasket to further seal between said housing and said base plate.

33. A Siemens type chemical vapor deposition reactor as set forth in any of claims 23-32 wherein said gasket comprises a plurality of segments with each of said segments contacting each other to form said gasket.

34. A Siemens type chemical vapor deposition reactor as set forth in claim 33 wherein each of said segments overlap one another for forming said gasket.

35. A Siemens type chemical vapor deposition reactor as set forth in claim 33 wherein each of said segments comprise a first end defining a recess and a second end

having a leg with said leg of one of said segments engaging said recess of another one of said segments for interlocking said segments to form said gasket.

36. A Siemens type chemical vapor deposition reactor as set forth in claim 33 wherein each of said segments comprise a first end and a second end with each of said ends defining a notch on opposing sides of said segment with said first end of one of said segments engaging said notch of another one of said segments for interlocking said segments to form said gasket.

CLAIMS

What is claimed is:

1. A manufacturing apparatus for depositing a material on a carrier body, said manufacturing apparatus comprising:

a base plate;

a housing having a flange for coupling with said base plate to define a reaction chamber;

an inlet defined by said housing for introducing a deposition composition, which comprises the material or a precursor thereof into said reaction chamber; and

at least one gasket disposed between said base plate and said housing for sealing between said housing and said base plate for preventing the deposition composition from escaping said reaction chamber;

wherein said gasket comprises a flexible graphite material for preventing said gasket from contaminating the material within said reaction chamber.

2. A manufacturing apparatus as set forth in claim 1 wherein said flexible graphite material contributes less than 10 parts per million atomic of impurities to the material deposited on the carrier body.

3. A manufacturing apparatus as set forth in any preceding claim wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

4. A manufacturing apparatus as set forth in any preceding claim wherein said flexible graphite material consists essentially of graphite.

5. A manufacturing apparatus as set forth in any preceding claim wherein said base plate defines a groove and wherein a finger extends from said flange of said housing for engaging said groove of said base plate.

6. A manufacturing apparatus as set forth in claim 5 wherein said gasket is disposed within said groove of said base plate with said finger contacting said gasket to compress said gasket for sealing between said housing and said base plate.

7. A manufacturing apparatus as set forth in claim 5 wherein said gasket is disposed on said base plate adjacent said groove within said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

8. A manufacturing apparatus as set forth in claim 5 wherein said gasket is disposed on said base plate adjacent said groove outside of said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

9. A manufacturing apparatus as set forth in any preceding claim wherein said gasket comprises a plurality of segments with each of said segments contacting each other to form said gasket.

10. A gasket for use in a manufacturing apparatus which deposits a material on a carrier body, wherein the manufacturing apparatus includes a housing and a base plate defining a reaction chamber with said gasket sealing between the housing and the base plate of the manufacturing apparatus to prevent a deposition composition, which comprises the material or a precursor thereof, from escaping the reaction chamber, said gasket comprising a flexible graphite material that contributes less than 10 parts per million atomic of impurities to the material deposited on the carrier body.

11. A gasket as set forth in claim 10 wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

12. A gasket as set forth in any of claims 10 and 11 wherein said flexible graphite material consists essentially of graphite.

13. A gasket as set forth in any of claims 10, 11 and 12 comprising a plurality of segments with each of said segments contacting each other to form said gasket.

14 A gasket as set forth in claim 13 wherein each of said segments overlap one another for forming said gasket.

15. A gasket as set forth in claim 13 wherein each of said segments comprise a first end defining a recess and a second end having a leg with said leg of one of said segments engaging said recess of another one of said segments for interlocking said segments to form said gasket.

16. A gasket as set forth in claim 13 wherein each of said segments comprise a first end and a second end with each of said ends defining a notch on opposing sides of said segment with said first end of one of said segments engaging said notch of another one of said segments for interlocking said segments to form said gasket.

17. A Siemens type chemical vapor deposition reactor for depositing silicone on a silicon slim rod for producing high purity polycrystalline silicon, said Siemens type chemical vapor deposition reactor:

a base plate;

a housing having a flange for coupling with said base plate to define a reaction chamber;

an inlet defined by said housing for introducing a deposition composition, which comprises the silicon or a precursor thereof into said reaction chamber; and

at least one gasket disposed between said base plate and said housing for sealing between said housing and said base plate for preventing the deposition composition from escaping said reaction chamber;

wherein said gasket comprises a flexible graphite material for preventing said gasket from contaminating the silicon deposited on the silicon slim rod within said reaction chamber.

18. A Siemens type chemical vapor deposition reactor as set forth in claim 17 wherein said flexible graphite material contributes less than 10 parts per million atomic of impurities to the silicon deposited on the silicon slim rod.

19. A Siemens type chemical vapor deposition reactor as set forth in any of claims 17 and 18 wherein said flexible graphite material contains an amount of phosphorous that is less than 10 parts per million atomic.

20. A Siemens type chemical vapor deposition reactor as set forth in any of claims 17-19 wherein said flexible graphite material consists essentially of graphite.

21. A Siemens type chemical vapor deposition reactor as set forth in any of claims 17-19 and 20 wherein said base plate defines a groove and wherein a finger extends from said flange of said housing for engaging said groove of said base plate.

22. A Siemens type chemical vapor deposition reactor as set forth in claim 21 wherein said gasket is disposed within said groove of said base plate with said finger contacting said gasket to compress said gasket for sealing between said housing and said base plate.

23. A Siemens type chemical vapor deposition reactor as set forth in claim 21 wherein said gasket is disposed on said base plate adjacent said groove within said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

24. A Siemens type chemical vapor deposition reactor as set forth in claim 21 wherein said gasket is disposed on said base plate adjacent said groove outside of said reaction chamber with said flange contacting said gasket to compress said gasket for sealing between said housing and said base plate.

25. A Siemens type chemical vapor deposition reactor as set forth in any of claims 17-19 and 20-24 wherein said gasket comprises a plurality of segments with each of said segments contacting each other to form said gasket.