61. The silicon precursor composition supply package of claim 59, wherein said storage medium comprises an ionic liquid storage medium.

62. The silicon precursor composition supply package of claim 58, wherein said gas storage and dispensing vessel comprises a pressure-regulated vessel including a pressure-regulating assembly in an interior volume of the vessel.

63. A gas mixture for ion implantation of silicon and/or silicon ions, comprising silicon tetrafluoride and hydrogen, wherein the amount of hydrogen in the gas mixture is from 0.01% to 30% by volume, based on total volume of silicon tetrafluoride and hydrogen.

64. The gas mixture of claim 63, wherein the amount of hydrogen in the gas mixture is from 2% to 20% by volume, based on total volume of silicon tetrafluoride and hydrogen.

65. The gas mixture of claim 63, as provided in a gas supply vessel.

66. The gas mixture of claim 63, wherein the silicon tetrafluoride is isotopically enriched above natural abundance in at least one isotope of silicon.

67. A method of implanting silicon and/or silicon ions in a substrate, comprising ionizing silicon tetrafluoride in a gas mixture comprising silicon tetrafluoride and hydrogen, and implanting silicon and/or silicon ions from said ionizing in the substrate, wherein the amount of hydrogen in the gas mixture is from 0.01% to 30% by volume, based on total volume of silicon tetrafluoride and hydrogen.

68. The method of claim 67, wherein the amount of hydrogen in the gas mixture is from 2% to 20% by volume, based on total volume of silicon tetrafluoride and hydrogen.

69. The method of claim 67, wherein the silicon tetrafluoride is isotopically enriched above natural abundance in at least one isotope of silicon.

61. The silicon precursor composition supply package of claim 59, wherein said storage medium comprises an ionic liquid storage medium.

62. The silicon precursor composition supply package of claim 58, wherein said gas storage and dispensing vessel comprises a pressure-regulated vessel including a pressure-regulating assembly in an interior volume of the vessel.

63. A gas mixture for ion implantation of silicon and/or silicon ions, comprising silicon tetrafluoride and hydrogen, wherein the amount of hydrogen in the gas mixture is from 0.01% to 30% by volume, based on total volume of silicon tetrafluoride and hydrogen.

64. The gas mixture of claim 63, wherein the amount of hydrogen in the gas mixture is from 2% to 20% by volume, based on total volume of silicon tetrafluoride and hydrogen.

65. The gas mixture of claim 63, as provided in a gas supply vessel.

66. The gas mixture of claim 63, wherein the silicon tetrafluoride is isotopically enriched above natural abundance in at least one isotope of silicon.

67. A method of implanting silicon and/or silicon ions in a substrate, comprising ionizing silicon tetrafluoride in a gas mixture comprising silicon tetrafluoride and hydrogen, and implanting silicon and/or silicon ions from said ionizing in the substrate, wherein the amount of hydrogen in the gas mixture is from 0.01% to 30% by volume, based on total volume of silicon tetrafluoride and hydrogen.

68. The method of claim 67, wherein the amount of hydrogen in the gas mixture is from 2% to 20% by volume, based on total volume of silicon tetrafluoride and hydrogen.

69. The method of claim 67, wherein the silicon tetrafluoride is isotopically enriched above natural abundance in at least one isotope of silicon.