WHAT IS CLAIMED IS:

1. A method of controlling a vaporization system, comprising:

(a) supplying a liquid precursor into a vaporization container;

(b) regulating a pressure in the vaporization container to reduce the pressure at a time point when (a) is completed or after a first predetermined time has elapsed since the time point;

(c) after (b), maintaining a state in which the regulation of the pressure in the vaporization container is stopped while vaporizing the liquid precursor; and

(d) after (c), supplying a vaporized gas generated by vaporizing the liquid precursor in the vaporization container into a process container in which a substrate is processed.

2. The method of Claim 1, further comprising: (e) between (c) and (d), regulating the pressure in the vaporization container to reduce the pressure.

3. The method of Claim 2, wherein a time period for which pressure regulation is performed in (b) is longer than the time period for which pressure regulation is performed in (e).

4. The method of Claim 2, wherein an exhaust speed of the vaporization container in (b) is lower than the exhaust speed of the vaporization container in (e).

5. The method of any one of Claims 2 to 4, further comprising: (f) between (e) and (d), maintaining a state in which the regulation of the pressure in the vaporization container is stopped.

6. The method of any one of Claims 1 to 5, wherein the supply of the vaporized gas into the process container is not performed from a start of (a) to a start of (d).

7. The method of any one of Claims 1 to 6, wherein in (b), the pressure in the vaporization container is regulated so that the pressure becomes less than a saturated vapor pressure of the liquid precursor in the vaporization container.

8. The method of any one of Claims 1 to 6, wherein in (b), the pressure in the vaporization container is regulated so that the pressure is reduced to a first predetermined pressure.

9. A method of manufacturing a semiconductor device, comprising:

(a) supplying a liquid precursor into a vaporization container;

(b) regulating a pressure in the vaporization container to reduce the pressure at a time point when (a) is completed or after a first predetermined time has elapsed since the time point;

(c) after (b), maintaining a state in which the regulation of the pressure in the vaporization container is stopped while vaporizing the liquid precursor; and

(d) after (c), supplying a vaporized gas generated by vaporizing the liquid precursor in the vaporization container into a process container in which a substrate is processed.

10. The method of Claim 9, further comprising:

(e) before (d), loading the substrate into the process container; and

(f) after (d), unloading the substrate from the process container,

wherein for each time (e) and (f) are performed, (a), (b) and (c) are performed at least once.

11. The method of Claim 9, further comprising:

(e) before (d), loading the substrate into the process container; and

(f) after (d), unloading the substrate from the process container,

wherein for each time (e) is performed multiple times and for each time (f) is performed multiple times, (a), (b) and (c) are performed at least once.

12. A vaporization system, comprising:

a vaporization container configured to vaporize a liquid precursor therein;

a liquid precursor supply system configured to supply the liquid precursor into the vaporization container;

a vaporized gas supply system configured to supply a vaporized gas generated by vaporization of the liquid precursor in the vaporization container into a process container in which a substrate is processed;

a pressure regulator configured to regulate a pressure in the vaporization container;

a heater configured to heat the liquid precursor in the vaporization container; and

a controller configured to control the liquid precursor supply system, the vaporized gas supply system, the pressure regulator, and the heater so as to execute:

(a) supplying the liquid precursor into the vaporization container;

(b) regulating a pressure in the vaporization container to reduce the pressure at a time point when (a) is completed or after a first predetermined time has elapsed since the time point;

(c) after (b), maintaining a state in which the regulation of the pressure in the vaporization container is stopped while vaporizing the liquid precursor; and

(d) after (c), supplying the vaporized gas into the process container.

13. The vaporization system of Claim 12, wherein the liquid precursor supply system includes a liquid precursor supply pipe having one end connected to the vaporization container and the other end connected to a supply source of the liquid precursor, and

wherein an orifice is provided in at least one selected from the group of an interior of the liquid precursor supply pipe and a tip of the one end of the liquid precursor supply pipe.

14. A substrate processing apparatus comprising:

a vaporization container configured to vaporize a liquid precursor therein;

a liquid precursor supply system configured to supply the liquid precursor into the vaporization container;

a vaporized gas supply system configured to supply a vaporized gas generated by vaporization of the liquid precursor in the vaporization container into a process container in which a substrate is processed;

a pressure regulator configured to regulate a pressure in the vaporization container;

a heater configured to heat the liquid precursor in the vaporization container; and

a controller configured to control the liquid precursor supply system, the vaporized gas supply system, the pressure regulator, and the heater so as to execute:

(a) supplying the liquid precursor into the vaporization container;

(b) regulating a pressure in the vaporization container to reduce the pressure at a time point when (a) is completed or after a first predetermined time has elapsed since the time point;

(c) after (b), maintaining a state in which the regulation of the pressure in the vaporization container is stopped while vaporizing the liquid precursor; and

(d) after (c), supplying the vaporized gas into the process container.

15. A program that causes, by a computer, a substrate processing apparatus to perform a process comprising:

(a) supplying a liquid precursor into a vaporization container;

(b) regulating a pressure in the vaporization container to reduce the pressure at a time point when (a) is completed or after a first predetermined time has elapsed since the time point;

(c) after (b), maintaining a state in which the regulation of the pressure in the vaporization container is stopped while vaporizing the liquid precursor; and

(d) after (c), supplying a vaporized gas generated by vaporizing the liquid precursor in the vaporization container into a process container in which a substrate is processed.