Positive-pressure respirators maintain a positive pressure in the facepiece during both inhalation and exhalation.

The two main types of positive-pressure respirators are pressure-demand and continuous flow.

In pressure-demand respirators, a pressure regulator and an exhalation valve on the mask maintain the mask's positive pressure except during high breathing rates.

If a leak develops in a pressure-demand respirator, the regulator sends a continuous flow of clean air into the facepiece, preventing penetration by contaminated ambient air.

Continuous-flow respirators (including some SARs and all powered air-purifying respirators) send a continuous stream of air into the facepiece at all times.

With SARs, the continuous flow of air prevents infiltration by ambient air, but uses the air supply much more rapidly than with pressure-demand respirators.

Negative-pressure respirators draw air into the facepiece via the negative pressure created by user inhalation.

The main disadvantage of negative-pressure respirators is that if any leaks develop in the system (i.e., a crack in the hose or an ill-fitting mask or facepiece), the user draws contaminated air into the facepiece during inhalation.

Powered air-purifying respirators are operated in a positive-pressure, continuous-flow mode utilizing filtered ambient air. (However, at maximal breathing rates, a negative pressure may be created in the facepiece of a PAPR.)

When supplied-air respirators are used, only those operated in the positive-pressure mode are recommended for work at hazardous waste sites.