

Method for filling a multi-stage carrier rocket with liquid oxygen is based on consecutive filling two tanks, one of which is thermo-insulated, with liquid oxygen, with different temperature, through one filling pipeline, with valves, is comprises of operations of feeding liquid oxygen at high and low rate and power consumption on the signals of the level control system (LCS), and overcooling of liquid oxygen by a ground-based system of filling up to a low temperature and discharge of it. Liquid oxygen is supplied to non-thermoinsulated tank during given time period, till the filling pipeline is cooled, with switching to high rate after it, and liquid oxygen is supplied in turns to the thermo-insulated tank during period of time up to 1 minute. At that quantity of liquid oxygen with low temperature being given to the non-thermoinsulated tank before and after filling the thermo-insulated tank is not larger than 1 volume of filling pipeline.