Claims

1. A ~~M~~method for producing silicon wafers, comprising
melting polysilicon in a crucible,
pulling a single crystal in a Czochralski pulling system,
dividing the single crystal into crystal pieces and
cutting the crystal pieces into wafers,
the pulling system being purged with a purge gas, characterized in that
the following relationship applies to the flow rate of the purge gas f and the pressure in the pulling system p during the melting of the polysilicon:
flow rate f [l/h] > 720~~400~~ x pressure p [mbar]
wherein the pressure p in the pulling system is less than 7 mbar.

~~2. Method according to Claim 1, characterized in that~~
~~the following relationship at least partially applies to the flow rate of the purge gas f and the pressure in the pulling system p during the melting of the polysilicon:~~
~~flow rate f [l/h] > 720 x pressure p [mbar].~~

~~3.~~2. The ~~M~~method according to ~~any of the preceding~~ claim~~s~~ 1, characterized in that the crucible is set up with polysilicon having, on average, a mass-based specific surface area of less than 2 cm^2/g.

~~4.~~3. The ~~M~~method according to any of the preceding claims, characterized in that the polysilicon used has a chlorine content of greater than 1 ppba.

~~5.~~4. A ~~S~~silicon single crystal having an oxygen concentration of greater than
2×10^{17} at/cm^3
and having a concentration of pinholes having a diameter of greater than 100 µm of less than 1.0×10^{-5} $1/cm^3$ and
a carbon concentration of less than 5.5×10^{14} at/cm^3, preferably less than 4×10^{14} at/cm^3,
and an iron concentration of less than 5.0×10^{9} at/cm^3, preferably less than 1.0×10^{9} at/cm^3,
and a COP concentration of fewer than 1000 defects/cm^3 and
a concentration of agglomerates composed of interstitial silicon atoms of fewer

than 1 defect/cm²
and a crystal diameter of greater than 200 mm, preferably greater than 300 mm.

~~6.~~5. The ~~S~~single crystal according to Claim ~~4~~5, characterized in that the concentration of pinholes having a diameter of greater than 50 µm is less than 1.0×10^{-5} 1/cm³.