The invention refers to the inorganic chemistry and radio-chemistry for preparation of hydrogen that is used in the chemical industry and power engineering.

Summary of the invention consists in the lanthanum cobaltate utilization as catalyst of water radiolysis  $LaCoO_3(La_2O_3 \cdot Co_2O_3)$ .

The result of the invention consists in increasing the catalytic activity.

The radiolytic yield of the hydrogen in the case of LaCoO<sub>3</sub> utilization increases by 35,2 times in comparison with the uncatalyzed water and by 1,8 times in comparison with Ni<sub>2</sub>O<sub>3</sub> (the analogue).

Claims: 1 Fig.: 3