Samples of EuRu$_4$B$_4$ and of the new boride EuRuB$_4$ were prepared from europium, RuB, and RuB$_4$ precursor alloys, respectively, in sealed tantalum tubes in an induction furnace. EuRu$_4$B$_4$ crystallizes with the LuRu$_4$B$_4$ structure, $a = 748.1(1)$, $c = 1502.3(4)$ pm. The structure of EuRuB$_4$ was refined on the basis of X-ray diffractometer data: $Pbam$, $a = 599.7(1)$, $b = 1160.7(3)$, $c = 358.06(7)$ pm, $wR^2 = 0.0691$, 474 $F^2$ values, and 38 variables. The four crystallographically independent boron sites build up layers which consist of almost regular pentagons and heptagons which sandwich the ruthenium and europium atoms, respectively. Within the two-dimensional [B$_4$] networks each boron atom has a slightly distorted trigonal-planar boron coordination with B–B distances in the range $172–186$ pm. Temperature-dependent $^{151}$Eu Mössbauer spectra show stable trivalent europium for EuRu$_4$B$_4$ and EuRuB$_4$. 

**Key words:** Europium, Borides, Mössbauer Spectroscopy