

QUARKS

LEPTONS

1st

2nd

3rd

2.2 M
 $u^{+2/3}_{1/2}$
up

1.28 G
 $c^{+2/3}_{1/2}$
charm

173.1 G
 $t^{+2/3}_{1/2}$
top

4.7 M
 $d^{-1/3}_{1/2}$
down

96 M
 $s^{-1/3}_{1/2}$
strange

4.18 G
 $b^{-1/3}_{1/2}$
bottom

0.51 M
 $e^{-1}_{1/2}$
electron

105.66 M
 $\mu^{-1}_{1/2}$
muon

1.78 G
 $\tau^{-1}_{1/2}$
tau

< 2
 $\nu_e^0_{1/2}$
 e neutrino

< 0.19 M
 $\nu_\mu^0_{1/2}$
 μ neutrino

< 18.2 M
 $\nu_\tau^0_{1/2}$
 τ neutrino

Mass: eV/c²
Charge
Spin
Name

0
 g^0_1
gluon

0
 γ^0_1
photon

80.38 G
 $W^{\pm 1}_1$
W boson

125.09 G
 H^0_0
higgs

0
 Z^0_1
Z boson

0
 Z^0_1
Z boson

0
 Z^0_1
Z boson

strong nuclear force

electromagnetic force

weak nuclear force

FERMIONS

BOSONS