

Leptons and Quarks

	m [MeV]	mean life [s]	decay
e^-	0.510998928(11)	stable	
ν_e	< 2 eV	stable	
μ^-	105.658372(4)	$2.196981(2) \cdot 10^{-6}$	$e^- \bar{\nu}_e \nu_\mu$
ν_μ	< 2 eV	stable	
τ^-	1776.86(12)	$290.3(5) \cdot 10^{-15}$	$\pi^- \pi^0 \nu_\tau, \ell^- \bar{\nu}_\ell \nu_\tau \dots$
ν_τ	< 2 eV	stable	

	charge	m [MeV] at 2 GeV
u	+2/3	1.8 to 3.0
d	-1/3	4.5 to 5.3
c	+2/3	1275 ± 25
s	-1/3	95 ± 5
t	+2/3	173210 ± 1000
b	-1/3	4180 ± 30

Mesons

	makeup	m [MeV]	mean life [s]	decay	J^P
π^+	$u\bar{d}$	139.5702(4)	$2.6033(5) \cdot 10^{-8}$	$\mu^+ \nu_\mu$	0^-
π^0	$(u\bar{u} + d\bar{d})/\sqrt{2}$	134.9766(6)	$8.52(18) \cdot 10^{-17}$	2γ	0^-
K^+	$u\bar{s}$	493.677(16)	$1.2380(20) \cdot 10^{-8}$	$\mu^+ \nu_\mu, \pi^+ \pi^0$	0^-
K_S^0	$(d\bar{s} + \bar{d}s)/\sqrt{2}$	497.611(13)	$0.8954(4) \cdot 10^{-10}$	$\pi^+ \pi^-, \pi^0 \pi^0$	0^-
K_L^0	$(d\bar{s} - \bar{d}s)/\sqrt{2}$	497.611(13)	$5.116(21) \cdot 10^{-8}$	$\pi^\pm \ell^\mp \nu_\ell, 3\pi$	0^-
η	$(u\bar{u} - d\bar{d})/\sqrt{2}$	547.862(18)	$5.02(20) \cdot 10^{-19}$	$3\pi, 2\gamma$	0^-
$\rho^0 \mid \rho^+$	$u\bar{u} \mid d\bar{d} \mid u\bar{d}$	775.26(25)	$4.41(3) \cdot 10^{-24}$	$\pi\pi$	1^-
ω	$u\bar{u} \mid d\bar{d}$	782.65(12)	$7.75(8) \cdot 10^{-23}$	$\pi^+ \pi^- \pi^0$	1^-
η'	$s\bar{s}$	957.78(6)	$3.32(16) \cdot 10^{-21}$	$\pi\pi\eta, \rho^0\gamma$	0^-
ϕ	$s\bar{s}$	1019.461(19)	$1.543(11) \cdot 10^{-22}$	$KK, 3\pi$	1^-
D^+	$c\bar{d}$	1869.61(9)	$1.040(7) \cdot 10^{-12}$	$K\pi\pi, K^0 \ell^+ \nu_\ell$	0^-
D^0	$c\bar{u}$	1864.84(5)	$0.4101(15) \cdot 10^{-12}$	$K\pi\pi, K^- \ell^+ \nu_\ell$	0^-
D_s^+	$c\bar{s}$	1968.30(10)	$0.500(7) \cdot 10^{-12}$	$\pi\pi \dots, KK\pi, \eta\rho^+$	0^-
J/ψ	$c\bar{c}$	3096.916(11)	$7.09(22) \cdot 10^{-21}$	$\pi, \rho \dots$	1^-
B^-	$b\bar{u}$	5279.37(15)	$1.638(4) \cdot 10^{-12}$	$\bar{D}^0 \dots$	0^-
B^0	$d\bar{b}$	5279.61(15)	$1.520(4) \cdot 10^{-12}$	$K^\pm, \bar{D}^0, D^- \dots$	0^-
B_s^0	$s\bar{b}$	5366.81(23)	$1.510(5) \cdot 10^{-12}$	$D_s^- \dots$	0^-
B_c^+	$c\bar{b}$	6275.1(10)	$0.507(9) \cdot 10^{-12}$	\dots	0^-
Υ	$b\bar{b}$	9460.30(26)	$1.22(3) \cdot 10^{-20}$	$\dots, \ell^+ \ell^- \dots$	1^-

Baryons

	makeup	m [MeV]	mean life [s]	decay	J^P
p	uud	938.272046(21)	stable		$1/2^+$
n	udd	939.565379(21)	880.3(11)	$pe^- \bar{\nu}_e$	$1/2^+$
Λ	uds	1115.683(6)	$2.632(20) \cdot 10^{-10}$	$p\pi^-, n\pi^0$	$1/2^+$
Σ^+	uus	1189.37(7)	$0.8018(26) \cdot 10^{-10}$	$p\pi^0, n\pi^+$	$1/2^+$
Σ^0	uds	1192.642(24)	$7.4(7) \cdot 10^{-20}$	$\Lambda\gamma$	$1/2^+$
Σ^-	dds	1197.449(30)	$1.479(11) \cdot 10^{-10}$	$n\pi^-$	$1/2^+$
Δ	$uuu \dots ddd$	1232	$5.6 \cdot 10^{-24}$	$N\pi$	$3/2^+$
Ξ^0	uss	1314.86(20)	$2.90(9) \cdot 10^{-10}$	$\Lambda\pi^0$	$1/2^+$
Ξ^-	dss	1321.71(7)	$1.639(15) \cdot 10^{-10}$	$\Lambda\pi^-$	$1/2^+$
Ω^-	sss	1672.45(29)	$0.821(11) \cdot 10^{-10}$	$\Lambda K^-, \Xi\pi$	$3/2^+$
Λ_c^+	udc	2286.46(14)	$0.200(6) \cdot 10^{-12}$	$pK \dots, \Lambda\pi \dots$	$1/2^+$
Σ_c^{++}	uuc	2453.97(14)	$3.5(3) \cdot 10^{-22}$	$\Lambda_c^+ \pi^+$	$1/2^+$
Σ_c^+	udc	2452.9(4)	$2 \cdot 10^{-22}$	$\Lambda_c^+ \pi^0$	$1/2^+$
Σ_c^0	ddc	2453.75(14)	$3.6(4) \cdot 10^{-22}$	$\Lambda_c^+ \pi^-$	$1/2^+$
Ξ_c^+	usc	2467.9(4)	$0.442(26) \cdot 10^{-12}$	$\Xi \dots, \Sigma K \dots$	$1/2^+$
Ξ_c^0	dsc	2470.8(4)	$0.112(13) \cdot 10^{-12}$	$\Xi^- \dots, \Lambda K \dots$	$1/2^+$
Ω_c^0	ssc	2695.2(17)	$0.069(12) \cdot 10^{-12}$	$\Omega^- \pi^+, \dots$	$1/2^+$
Λ_b^0	udb	5619.51(23)	$1.466(10) \cdot 10^{-12}$	$\Lambda_c^+ \dots, \dots$	$1/2^+$

$$|V_{CKM}| = \begin{pmatrix} 0.97427(14) & 0.2254(6) & 0.00355(15) \\ 0.2252(6) & 0.97343(15) & 0.0414(12) \\ 0.0089(3) & 0.0405(12) & 0.99914(5) \end{pmatrix}$$

$ud \quad us \quad ub$
 $cd \quad cs \quad cb$
 $td \quad ts \quad tb$

$$e = 1.6021766 \cdot 10^{-19} \text{ C}$$

$$m_u = 931.4941 \text{ MeV}$$

$$G_F/(\hbar c)^3 = 1.166379 \cdot 10^{-5} \text{ GeV}^{-2}$$

$$h = 6.626070 \cdot 10^{-34} \text{ J.s}$$

$$\alpha = e^2/4\pi\epsilon_0\hbar c = 1/137.0359991$$

$$\sin^2 \theta_W = 0.23155(5)$$

$$\hbar = 1.0545718 \cdot 10^{-34} \text{ J.s}$$

$$N_A = 6.022141 \cdot 10^{23} \text{ mol}^{-1}$$

$$m_{W,Z} = 80.385(15), 91.1876(21) \text{ GeV}$$

$$\hbar c = 197.32698 \text{ MeV.fm}$$

$$k = 1.380649 \cdot 10^{-23} \text{ J.K}^{-1}$$

$$m_H = 125.09(24) \text{ GeV}$$