Baryon modes

$B \to$ charmed-baryon anything	(6.4 ± 1.1) %		–
$B \to \overline{\Sigma}_c^{--}$ anything	$(4.8 \pm 2.5) \times 10^{-3}$		–
$B \to \overline{\Sigma}_c^{-}$ anything	< 1.1 %	CL=90%	–
$B \to \overline{\Sigma}_c^{0}$ anything	$(5.3 \pm 2.5) \times 10^{-3}$		–
$B \to \overline{\Sigma}_c^{0} N (N = p$ or $n)$	$< 1.7 \times 10^{-3}$	CL=90%	–
$B \to p$anything + $\overline{p}$anything	(8.0 ± 0.5) %		–
$B \to p$(direct) anything + $\overline{p}$(direct) anything	(5.6 ± 0.7) %		–
$B \to \Lambda$anything + $\overline{\Lambda}$anything	(4.0 ± 0.5) %		–
$B \to \Xi^-$ anything + $\overline{\Xi}^+$ anything	$(2.7 \pm 0.6) \times 10^{-3}$		–
$B \to$ baryons anything	(6.8 ± 0.6) %		–
$B \to p\overline{p}$anything	(2.47 ± 0.23) %		–
$B \to \Lambda\overline{p}$anything + $\overline{\Lambda}p$anything	(2.5 ± 0.4) %		–
$B \to \Lambda\overline{\Lambda}$anything	$< 5 \times 10^{-3}$	CL=90%	–

$\Delta B = 1$ weak neutral current ($B1$) modes

$\overline{b} \to e^+ e^-$ anything	$B1$	[vv] $< 2.4 \times 10^{-3}$		–
$\overline{b} \to \mu^+ \mu^-$ anything	$B1$	[vv] $< 5.0 \times 10^{-5}$	CL=90%	–

B^0

$I(J^P) = \frac{1}{2}(0^-)$

I, J, P need confirmation. Quantum numbers shown are quark-model predictions.

Mass $m_{B^0} = 5279.0 \pm 2.0$ MeV

$m_{B^0} - m_{B^\pm} = 0.34 \pm 0.29$ MeV $\quad (S = 1.1)$

Mean life $\tau = (1.50 \pm 0.11) \times 10^{-12}$ s

$c\tau = 449\ \mu$m

$\tau_{B^+}/\tau_{B^0} = 0.98 \pm 0.09$

B^0-$\overline{B}^0$ mixing parameters

$\chi_d = 0.156 \pm 0.024$

$\Delta m_{B^0} = m_{B^0_H} - m_{B^0_L} = (0.51 \pm 0.06) \times 10^{12}\ \hbar\ s^{-1}$

$x_d = \Delta m_{B^0}/\Gamma_{B^0} = 0.71 \pm 0.06$ [ww]

$\overline{B}^0$ modes are charge conjugates of the modes below. Reactions indicate the weak decay vertex and do not include mixing. Decays in which the charge of the B is not determined are in the $B^\pm$ section.

Only data from $\Upsilon(4S)$ decays are used for branching fractions, with rare exceptions. The branching fractions listed below assume a 50:50 $B^0\overline{B}^0$:B^+B^- production ratio at the $\Upsilon(4S)$. We have attempted to bring older measurements up to date by rescaling their assumed $\Upsilon(4S)$ production ratio to 50:50 and their assumed D, D_s, D^*, and ψ branching ratios to current values whenever this would affect our averages and best limits significantly.

Indentation is used to indicate a subchannel of a previous reaction. All resonant subchannels have been corrected for resonance branching fractions to the final state so the sum of the subchannel branching fractions can exceed that of the final state.

B^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
Semileptonic and leptonic modes			
$\ell^+ \nu_\ell$ anything	[ii] (9.5 ± 1.6) %		–
$D^- \ell^+ \nu_\ell$	[ii] (1.9 ± 0.5) %		–
$D^*(2010)^- \ell^+ \nu_\ell$	[ii] (4.4 ± 0.4) %		–
$\rho^- \ell^+ \nu_\ell$	[ii] $< 4.1 \times 10^{-4}$	90%	–
$\pi^- \mu^+ \nu_\mu$	seen		2636
D, D^*, or D_s modes			
$D^- \pi^+$	$(3.0 \pm 0.4) \times 10^{-3}$		2306
$D^- \rho^+$	$(7.8 \pm 1.4) \times 10^{-3}$		2236
$\overline{D}^0 \pi^+ \pi^-$	$< 1.6 \times 10^{-3}$	90%	2301
$D^*(2010)^- \pi^+$	$(2.6 \pm 0.4) \times 10^{-3}$		2254
$D^- \pi^+ \pi^+ \pi^-$	$(8.0 \pm 2.5) \times 10^{-3}$		2287
$(D^- \pi^+ \pi^+ \pi^-)$ nonresonant	$(3.9 \pm 1.9) \times 10^{-3}$		2287
$D^- \pi^+ \rho^0$	$(1.1 \pm 1.0) \times 10^{-3}$		2207
$D^- a_1(1260)^+$	$(6.0 \pm 3.3) \times 10^{-3}$		2121
$D^*(2010)^- \pi^+ \pi^0$	(1.5 ± 0.5) %		2247
$D^*(2010)^- \rho^+$	$(7.3 \pm 1.5) \times 10^{-3}$		2181
$D^*(2010)^- \pi^+ \pi^+ \pi^-$	(1.19 ± 0.27) %		2235
$(D^*(2010)^- \pi^+ \pi^+ \pi^-)$ nonresonant	$(0.0 \pm 2.5) \times 10^{-3}$		2235
$D^*(2010)^- \pi^+ \rho^0$	$(5.7 \pm 3.1) \times 10^{-3}$		2151
$D^*(2010)^- a_1(1260)^+$	(1.5 ± 0.7) %		2061
$D^*(2010)^- \pi^+ \pi^+ \pi^- \pi^0$	(3.4 ± 1.8) %		2218
$\overline{D}_2^*(2460)^- \pi^+$	$< 2.2 \times 10^{-3}$	90%	2065
$\overline{D}_2^*(2460)^- \rho^+$	$< 4.9 \times 10^{-3}$	90%	1980
$D^- D_s^+$	$(8 \pm 4) \times 10^{-3}$		1812
$D^*(2010)^- D_s^+$	(1.2 ± 0.6) %		1735
$D^- D_s^{*+}$	(2.1 ± 1.5) %		1733
$D^*(2010)^- D_s^{*+}$	(2.0 ± 1.2) %		1650
$D_s^+ \pi^-$	$< 2.9 \times 10^{-4}$	90%	2270
$D_s^{*+} \pi^-$	$< 5 \times 10^{-4}$	90%	2215
$D_s^+ \rho^-$	$< 7 \times 10^{-4}$	90%	2198
$D_s^{*+} \rho^-$	$< 8 \times 10^{-4}$	90%	2140
$D_s^+ a_1(1260)^-$	$< 2.7 \times 10^{-3}$	90%	2079
$D_s^{*+} a_1(1260)^-$	$< 2.2 \times 10^{-3}$	90%	2015
$D_s^- K^+$	$< 2.4 \times 10^{-4}$	90%	2242
$D_s^{*-} K^+$	$< 1.8 \times 10^{-4}$	90%	2186
$D_s^- K^*(892)^+$	$< 1.0 \times 10^{-3}$	90%	2172
$D_s^{*-} K^*(892)^+$	$< 1.2 \times 10^{-3}$	90%	2113
$D_s^- \pi^+ K^0$	$< 6 \times 10^{-3}$	90%	2221
$D_s^{*-} \pi^+ K^0$	$< 3.2 \times 10^{-3}$	90%	2164
$D_s^- \pi^+ K^*(892)^0$	$< 4 \times 10^{-3}$	90%	2136
$D_s^{*-} \pi^+ K^*(892)^0$	$< 2.1 \times 10^{-3}$	90%	2075
$\overline{D}^0 \pi^0$	$< 4.8 \times 10^{-4}$	90%	2308
$\overline{D}^0 \rho^0$	$< 5.5 \times 10^{-4}$	90%	2238
$\overline{D}^0 \eta$	$< 6.8 \times 10^{-4}$	90%	2274
$\overline{D}^0 \eta'$	$< 8.6 \times 10^{-4}$	90%	2197
$\overline{D}^0 \omega$	$< 6.3 \times 10^{-4}$	90%	2235
$\overline{D}^*(2007)^0 \pi^0$	$< 9.7 \times 10^{-4}$	90%	2256
$\overline{D}^*(2007)^0 \rho^0$	$< 1.17 \times 10^{-3}$	90%	2182
$\overline{D}^*(2007)^0 \eta$	$< 6.9 \times 10^{-4}$	90%	2220
$\overline{D}^*(2007)^0 \eta'$	$< 2.7 \times 10^{-3}$	90%	2140
$\overline{D}^*(2007)^0 \omega$	$< 2.1 \times 10^{-3}$	90%	2180
Charmonium modes			
$J/\psi(1S) K^0$	$(7.5 \pm 2.1) \times 10^{-4}$		1682
$J/\psi(1S) K^+ \pi^-$	$(1.2 \pm 0.6) \times 10^{-3}$		1652
$J/\psi(1S) K^*(892)^0$	$(1.58 \pm 0.28) \times 10^{-3}$		1569
$\psi(2S) K^0$	$< 8 \times 10^{-4}$	90%	1283
$\psi(2S) K^+ \pi^-$	$< 1 \times 10^{-3}$	90%	1238
$\psi(2S) K^*(892)^0$	$(1.4 \pm 0.9) \times 10^{-3}$		1113
$\chi_{c1}(1P) K^0$	$< 2.7 \times 10^{-3}$	90%	1410
$\chi_{c1}(1P) K^*(892)^0$	$< 2.1 \times 10^{-3}$	90%	1263
K or K^* modes			
$K^+ \pi^-$	$< 2.6 \times 10^{-5}$	90%	2615
$K^+ K^-$	$< 7 \times 10^{-6}$	90%	2593
$K^0 \pi^+ \pi^-$	$< 4.4 \times 10^{-4}$	90%	2609
$K^0 \rho^0$	$< 3.2 \times 10^{-4}$	90%	2559
$K^0 f_0(980)$	$< 3.6 \times 10^{-4}$	90%	2523
$K^*(892)^+ \pi^-$	$< 3.8 \times 10^{-4}$	90%	2562
$K_2^*(1430)^+ \pi^-$	$< 2.6 \times 10^{-3}$	90%	2445
$K^0 K^+ K^-$	$< 1.3 \times 10^{-3}$	90%	2522
$K^0 \phi$	$< 4.2 \times 10^{-4}$	90%	2516
$K^*(892)^0 \pi^+ \pi^-$	$< 1.4 \times 10^{-3}$	90%	2556
$K^*(892)^0 \rho^0$	$< 4.6 \times 10^{-4}$	90%	2504
$K^*(892)^0 f_0(980)$	$< 1.7 \times 10^{-4}$	90%	2467
$K_1(1400)^+ \pi^-$	$< 1.1 \times 10^{-3}$	90%	2451
$K^*(892)^0 K^+ K^-$	$< 6.1 \times 10^{-4}$	90%	2465
$K^*(892)^0 \phi$	$< 3.2 \times 10^{-4}$	90%	2459
$K_1(1400)^0 \rho^0$	$< 3.0 \times 10^{-3}$	90%	2388
$K_1(1400)^0 \phi$	$< 5.0 \times 10^{-3}$	90%	2339
$K_2^*(1430)^0 \rho^0$	$< 1.1 \times 10^{-3}$	90%	2380
$K_2^*(1430)^0 \phi$	$< 1.4 \times 10^{-3}$	90%	2330
$K^*(892)^0 \gamma$	$(4.0 \pm 1.9) \times 10^{-5}$		2563
$K_1(1270)^0 \gamma$	$< 7.0 \times 10^{-3}$	90%	2486
$K_1(1400)^0 \gamma$	$< 4.3 \times 10^{-3}$	90%	2453
$K_2^*(1430)^0 \gamma$	$< 4.0 \times 10^{-4}$	90%	2445
$K^*(1680)^0 \gamma$	$< 2.0 \times 10^{-3}$	90%	2361
$K_3^*(1780)^0 \gamma$	< 1.0 %	90%	2343
$K_4^*(2045)^0 \gamma$	$< 4.3 \times 10^{-3}$	90%	2243