Properties of particles with lifetime $\gg 10^{-23}$s - 'semi-stable' and stable.

(Tailored to analysis of bubble chamber pictures.)

	Particle name	Mass in MeV/c^2	Main decays	%	Mean life in seconds	$c\tau$ (cm)	Comment
γ	gamma	0	e^+e^-		stable		Strictly not a decay, but a 'materialisation' in the field of a nucleus.
ν	neutrino	0			stable		Neutrinos show up in final states as unseen partners in decays: eg. of μ and π.
e^-	electron	0.511	stable				Curls up characteristically in bubble chamber.
e^+	positron	0.511					• Annihilates with electron. • Also curls up characteristically in bubble chamber
μ^-	mu minus	105.7	$e^-\bar{\nu}_e\nu_\mu$	100	2.2×10^{-6}	$\sim 10^5$	Usually escapes; sometimes kinks.
μ^+	mu plus	105.7	$e^+\nu_e\bar{\nu}_\mu$	100	2.2×10^{-6}	$\sim 10^5$	Usually escapes; sometimes kinks.
π^-	pi minus	139.6	$\mu^-\bar{\nu}_\mu$	100	2.6×10^{-8}	780	May kink or 'pimue'
π^+	pi plus	139.6	$\mu^+\nu_\mu$	100	2.6×10^{-8}	780	May kink or 'pimue'
π^0	pi zero	135.0	$\gamma\gamma$	98.80	8.4×10^{-17}		May give e^+e^- pair(s)
			γe^+e^-	1.20			When e^+e^- come directly from interaction, it is called a Dalitz pair.
$K^\pm$	kaon	493.7	$\mu\nu$	63.51	1.2×10^{-8}	371	May kink.
			$\pi\pi^0$	21.16			May kink.
			$\pi^\pm\pi^+\pi^-$	5.59			May give 'trident'.
K^0	kay zero	497.7	$\pi^+\pi^-$	68.61	0.9×10^{-10}	2.68	This is K^0_S; may give 'vee'.
p	proton	938.3	stable				Low energy p often stops in bubble chamber - characteristic dark track.
n	neutron	939.6	$pe^-\bar{\nu}$	100	887		Sometimes identified via a proton it collides with.
Λ	lambda	1116	$p\pi^-$	63.9	2.6×10^{-10}	7.89	May give 'vee'.
Σ^+	sigma plus	1189	$p\pi^0$	52	0.8×10^{-10}	2.4	May kink.
			$n\pi^+$	48			May kink
Σ^0	sigma zero	1193	$\Lambda\gamma$	100	7.4×10^{-20}		May give Λ and γ.
Σ^-	sigma minus	1197	$n\pi^-$	99.85	1.5×10^{-10}	4.4	May kink
Ξ^0	xi zero	1315	$\Lambda\pi^0$	99.5	2.9×10^{-10}	8.7	$\Lambda + \gamma$s to downstream point
Ξ^-	xi minus	1321	$\Lambda\pi^-$	100	1.6×10^{-10}	4.9	Λ from kink possible.
Ω^-	omega minus	1672	ΛK^-	67.8	0.8×10^{-10}	2.5	Λ from kink possible
			$\Xi^0\pi^-$	23.6			$\Lambda + \gamma$s to downstream point
			$\Xi^-\pi^0$	8.6			Λ to 2^{nd} kink possible.