Quantum Numbers of Known Particles

Fundamental Quantum Numbers

Quantum Number	Symbol	Meaning
Electric Charge	Q	Electromagnetic charge
Spin	s	Intrinsic angular momentum
Weak Isospin	T	SU(2)L representation
Third Weak Isospin	T3	Component of weak isospin
Weak Hypercharge	Y	U(1)Y quantum number
Color Charge	r,g,b	Strong interaction (SU(3)C)
Chirality	L,R	Left- or right-handed field
Helicity	h	Spin projection along momentum
Mass	m	Rest mass
Generation	1,2,3	Fermion family

Conserved Quantum Numbers

Quantum Number	Symbol
Baryon Number	B
Lepton Number	L
Electron Number	Le
Muon Number	Lμ
Tau Number	Lτ

Flavor Quantum Numbers

Quantum Number	Symbol
Strangeness	S
Charm	C
Bottomness (Beauty)	B'
Topness (Truth)	T'

Discrete Quantum Numbers

Quantum Number	Symbol
Parity	P
Charge Conjugation	C
Time Reversal	T
CP Eigenvalue	CP
CPT	CPT

Example Standard Model Particle Quantum Numbers

Particle	Q	Spin	T3	Y	Color	B	L
Electron	-1	1/2	-1/2	-1	None	0	1
Neutrino	0	1/2	+1/2	-1	None	0	1
Up quark	+2/3	1/2	+1/2	+1/3	RGB	1/3	0
Down quark	-1/3	1/2	-1/2	+1/3	RGB	1/3	0
Photon	0	1	0	0	None	0	0
Gluon	0	1	0	0	Color-anticolor	0	0
W+	1	1	-	-	None	0	0
Z0	0	1	-	-	None	0	0
Higgs	0	0	+1/2	+1	None	0	0

Standard Model Gauge Group: $SU(3)_C \times SU(2)_L \times U(1)_Y$

Reference: Review of Particle Physics (Particle Data Group).