

contact to harmful substance	7	1	8	8	7	10	19	9	5	8	5	5	3	7	4	4	6	7	6	6	8	2	7	152	harmful substance
electric shock	4	2	5	2	1	3	4	3	2	2	2	2	4	1	2	2		1		2	1	1	2	48	electric shock
explosion	11	6	1	2	3	4		8	8	9	4	5	1	5		11			2	3	5	6		94	explosion
burst	1	3		1		1		2		2	1	1	1	1					1	1		1		17	burst
fire	3		1	3	5	3	6	4	4	4	2	4	2	3	3	1	5	3	2	3	1	2	5	69	fire
traffic accident (public road)	3	4	4	8	2	7	7	5	7	4	4	7	6	6	6	4	8	14	1	4	3	4	5	123	traffic accident (public road)
traffic accident (others)		1	2		1	1	1	2				1		1				1	1					12	traffic accident (others)
reaction to motion/improper motion	58	58	64	53	47	50	52	44	56	60	28	44	38	31	34	40	34	30	46	51	54	43	40	1,055	reaction to motion/improper motion
others	2	3	6	7	2	5	3	5	1	4	4	1	7	3	5	3	2	4		8	4	7	62	148	others
unclassifiable	1	2	1				1	1	1				2			1	1	1		1	1	1		15	unclassifiable
total	1,251	1,276	1,212	1,049	980	1,105	1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	20,663	total

Causal agents (large) of fatal and non-fatal accidents in steel making in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine	267	247	264	257	197	221	218	216	219	236	143	187	162	171	137	167	134	138	148	139	143	104	118	4,233	machine
crane, conveying machine	202	249	205	172	199	196	221	214	218	214	153	158	181	164	141	151	133	136	132	147	126	114	114	3,940	crane, conveying machine

																									machine
other equipment	191	221	219	174	166	218	223	184	196	189	131	162	176	166	150	140	130	124	129	132	127	119	137	3,804	other equipment
temporary buildings, establishments	105	103	109	96	75	98	110	104	108	105	65	79	87	84	77	66	76	88	74	92	84	82	82	2,049	temporary buildings, establishments
substance, material	377	356	316	260	250	279	249	245	271	247	137	189	178	169	154	171	137	137	139	163	137	117	151	4,829	substance, material
load	62	69	56	51	52	57	51	44	36	50	20	25	27	27	26	36	30	26	23	30	32	29	29	888	load
environment	14	6	12	11	3	10	11	17	8	10	9	18	26	5	10	14	6	14	13	18	10	14	7	266	environment
others	33	25	31	28	38	26	34	29	25	25	16	20	25	25	20	24	14	24	26	27	35	26	78	654	others
total	1,251	1,276	1,212	1,049	980	1,105	1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	20,663	total

Causal agents (middle) of fatal and non-fatal accidents in steel making in 1999-2021

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (M) agents
engine	1	3	2					3						1	1	1			1	1	2			16	engine
power transmission mechanism	11	4	4	18	6	7	13	8	12	12	4	12	9	10	9	8	10	5	10	8	6	4	7	197	power transmission mechanism
woodworking machine	7	3	4	11	3	2	5	2	2	7	6	4	5	3	1	5	4	2	1	1		3	3	84	woodworking machine
construction machine	2	3	3	10	7	8	9	6	4	8	9	8	3	6	2	6	5	6	4	5	6	8	3	131	construction machine

metal manufacturing machine	150	145	150	140	109	132	121	129	116	138	77	95	91	100	80	87	76	73	83	72	76	55	67	2,362	metal manufacturing machine	
general machine	96	89	101	78	72	72	70	68	85	71	47	68	54	51	44	60	39	52	49	52	53	34	38	1,443	general machine	
mobile silviculture machine																										mobile silviculture machine
crane	98	122	102	89	101	99	108	96	95	79	64	60	85	74	56	66	57	55	50	77	61	48	58	1,800	crane	
conveying machine	99	121	98	74	91	87	103	104	109	124	83	89	87	83	82	80	66	66	76	62	61	61	48	1,954	conveying machine	
vehicle	5	6	5	9	7	10	10	14	14	11	6	9	9	7	3	5	10	15	6	8	4	5	8	186	vehicle	
pressure vessel		2	1			2	2	1	1	1			2	1	1				1	3				18	pressure vessel	
chemical facilities					2		1							2								1		6	chemical facilities	
welding equipment	4	7	11	7	5	12	15	10	12	9	11	10	6	13	5	10	2	5	2	3	7	3	9	178	welding equipment	
kiln, caldron	18	26	20	16	21	35	19	29	22	24	20	23	23	21	20	16	14	16	20	13	21	23	8	468	kiln, caldron	
electric equipment	4	3	3	2	4	4	4	3	2	1	1	4	5		2	4	2	2		4		1	1	56	electric equipment	
human power machine, tools	30	47	36	36	25	41	32	37	39	27	17	18	31	29	26	21	27	15	19	16	24	20	30	643	human power machine, tools	
tools	105	99	115	85	78	81	93	69	94	95	56	74	79	69	71	62	67	61	64	65	58	46	56	1,742	tools	
other equipments,	30	37	33	28	31	43	57	35	26	32	26	33	30	31	25	27	18	25	23	28	17	25	33	693	other equipments,	

circular sawing machine			2		2		3	1	2	4	5	2	4	2	1	3	3	1	1	1		2	2	41	circular sawing machine
band sawing machine										1				1										2	band sawing machine
wood planer machine							1					1					1							3	wood planer machine
hollow chisel mortiser, wood borer			1				1					1		1										4	hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine																									chamfering machine, router, woodworking milling machine
chain saw											1											1	1	3	chain saw
other woodworking machines			1		1			1		2						2		1						8	other woodworking machines
leveling, transporting or loading machine			2		3		3	1		2	3	2	1	4	2	1	2	3	2	2	1	3	1	38	leveling, transporting or loading machine
excavating machine			1		2		4	2	2	3	4	5	1			1	1	1		1		2	1	31	excavating machine
foundation work machine																								2	foundation work machine
hardening machine											1													1	hardening machine
demolition machine								2		1						2		2	1	1	3	2	1	15	demolition machine
vehicle for high lift							2	1	1	1	1						1							7	vehicle for high lift

work																									work
other construction machines				2				1	1		1		2		2	1			1	2	1		14	other construction machines	
lathe			11	8		4	9	6	8	7	2	6	3	4	4	6	3	2	6	2	4	1	96	lathe	
drill press, milling machine			10	6		7	8	6	5	3	7	7	5	9	3	8	3	2	2	5	4	2	102	drill press, milling machine	
grinding machine, buffing machine			35	21		30	28	34	35	14	25	24	28	16	18	20	17	19	15	20	17	14	430	grinding machine, buffing machine	
power press			14	4		12	6	2	8	3	3	6	7	3	5	3	6	10	9	3	7	6	117	power press	
forging pressure hammer			7	7		11	5	9	11	8	9	6	6	4	3	3	4	3	3	3		4	106	forging pressure hammer	
shearing machine			8	7		6	11	10	7	9	3	5	3	4	12	6	6	11	3	6	2	7	126	shearing machine	
other metal manufacturing machines			65	56		51	62	49	64	33	46	37	48	40	42	30	34	36	34	37	21	33	818	other metal manufacturing machines	
centrifugal machine			4							1			1	1	2	1	1				1		12	centrifugal machine	
mixer, grinder			11	10		12	2	7	7	6	8	6	7	3	11	7	3	6	5	6	5	6	128	mixer, grinder	
roll machine (except printingroll machine)			18	14		9	12	19	13	11	9	11	10	8	10	7	7	7	8	10	5	6	194	roll machine (except printingroll machine)	
injection molding machine			2	1		2		1		1		1	1		1		1	2	3				16	injection molding machine	
food manufacturing machine																									food manufacturing machine
printing machine			1																				1	printing machine	

truck			28		30		27	26	29	30	28	20	30	21	26	21	19	20	23	22	19	18	10	447	truck	
forklift			25		18		28	18	32	32	21	21	14	18	11	16	14	13	19	13	20	16	14	363	forklift	
railway equipment			4		1		1	2	4	4	1	3		2	3	5	2	2	1			1		36	railway equipment	
conveyor			34		31		43	44	32	44	25	37	37	33	33	32	26	27	24	20	17	21	17	577	conveyor	
loader			2							1								1	1	2		1	2	10	loader	
straddle carrier												1													1	straddle carrier
rough terrain hauler																										rough terrain hauler
other powered conveying machines			5		11		4	14	12	13	8	7	6	9	9	6	5	3	8	5	5	4	5	139	other powered conveying machines	
cars, bus, motorcycle			3		6		9	14	13	9	6	9	8	6	3	3	9	15	4	8	4	4	4	7	140	cars, bus, motorcycle
railway vehicle			1							1						1			1				1	5	railway vehicle	
other vehicles			1		1		1		1	1			1	1		1	1		1			1		11	other vehicles	
boiler							1						1							1				3	boiler	
pressure vessel														1	1									2	pressure vessel	
other pressure vessels			1				1	1	1	1			1						1	2				9	other pressure vessels	
chemical facilities					2		1							2								1		6	chemical facilities	
gas welding equipment			6		2		8	4	10	4	9	5	5	10	3	4	2	3	2	2	4	2	6	91	gas welding equipment	
arc welding equipment			3		3		6	4	2	1	2	5	1	1	2	4		2				1	2	39	arc welding equipment	
other welding equipment			2				1	2		4				2		2				1	3		1	18	other welding equipment	

kiln, caldron			19		20		17	27	19	21	16	23	22	18	17	15	12	13	18	12	21	21	8	339	kiln, caldron	
industrial dryer							1		1	1	2			3	1				1					10	industrial dryer	
other kiln, caldron			1		1		1	2	2	2	2		1		2	1	2	3	1	1		2		24	other kiln, caldron	
transmission					1		2	2	1				1		1									8	transmission	
electric power facilities			1		1			1	1	1		2	1			1	1				3		1	1	15	electric power facilities
other electrical equipment			2		2		2					1	2	3		1	3	1	2		1				20	other electrical equipment
human power cranes			3		2		2	1		1		1	3	1	1		3	1				2	1	1	23	human power cranes
human power hauling equipment			8		7		6	12	12	6	5	6	10	8	12	9	7	3	4	9	8	8	13	153	human power hauling equipment	
human power machine			3					2	2	2			2			1	2		3		2	1		20	human power machine	
hand tool			22		16		24	22	25	18	12	11	16	20	13	11	15	11	12	7	12	10	16	293	hand tool	
ladder			23		20		12	18	29	28	17	16	16	10	14	10	15	10	18	12	9	18	14	309	ladder	
slinging tool			54		34		53	27	35	33	17	27	37	31	29	31	24	25	26	27	28	13	22	573	slinging tool	
other tools			38		24		28	24	30	34	22	31	26	28	28	21	28	26	20	26	21	15	20	490	other tools	
other equipment, facilities			33		31		57	35	26	32	26	33	30	31	25	27	18	25	23	28	17	25	33	555	other equipment, facilities	
scaffolding					2		3	4	4	1	2	2	2	1	2		3	1	3	1	1			32	scaffolding	
timbering									1															1	timbering	
stairs, landing stage			17		12		14	12	16	18	6	5	7	18	14	13	16	14	15	19	6	9	12	243	stairs, landing stage	
opening			5		3		6	4	6	7	2	4	8	7	2	1	5	7	1	4	2	3	3	80	opening	

roof, beam, haze, crossbeam, principal rafter					4		4	2	3		3		3		1	1	2	1	3	4		1	1	33	roof, beam, haze, crossbeam, principal rafter
working platform, boot board			16		11		16	15	19	25	7	15	22	18	17	14	11	16	7	13	17	16	13	288	working platform, boot board
passage			42		20		40	41	34	27	29	29	27	20	23	19	26	34	30	26	38	29	34	568	passage
building, establishment			22		16		7	12	18	18	9	14	10	9	9	10	9	2	8	13	11	14	12	223	building, establishment
other temporary buildings, establishments			7		7		20	14	7	9	7	10	8	11	9	8	4	13	7	12	9	10	7	179	other temporary buildings, establishments
explosive substance					1		1			2						2		1				2	9	explosive substance	
inflammable substance			5		6		11	9	5	9	6	6	5	3	4	4	5	7	3	2	5	3	5	103	inflammable substance
inflammable gas			2		1		1		5	3	1		1		2	9	2		3	1	1	1		33	inflammable gas
harmful substance			3		3		8	4	4	6	4	2	3	6	3	3	5	3	5	3	6	1	3	75	harmful substance
radiation																							2	2	radiation
other hazards, harmful substances			9		10		4	6	5	4	2	2	3	6	5	3	4	4	7	14	4	2	4	98	other hazards, harmful substances
metal material			267		203		200	204	231	208	108	164	147	142	128	141	104	107	104	129	115	96	121	2,919	metal material
lumber, bamboo			4		8		6	3	3	4	4	3	3	1	3	3	5	7	3	3	2	6	4	75	lumber, bamboo
stone, sand, substance			8		6		9	6	5	5	3	2	2	4	2	3	6	2	5	2			3	73	stone, sand, substance
other materials			18		12		9	13	13	6	9	10	14	7	7	5	4	7	8	9	4	8	7	170	other materials
load			44		45		41	36	32	44	18	23	22	24	25	35	25	21	19	26	27	26	25	558	load

machine/equipment as load			12		7		10	8	4	6	2	2	5	3	1	1	5	5	4	4	5	3	4	91	machine/equipment as load
natural ground, rock						1			1	1		1		1						2				7	natural ground, rock
standing tree							1		1										1	1				4	standing tree
water			1					1			1	9					1	1				1	15	water	
abnormal environment						1	2			1			1		1				1		1			8	abnormal environment
high/cold temperature environment			4		3		6	12	4	8	5	13	10	3	7	9	4	10	10	12	8	10	4	142	high/cold temperature environment
other environments			7			3	2	3		2	4	6	1	2	4	2	3	2	2	1	3	2	49	other environments	
other causal agent			6		10		7	7	5	3	4	2	8	6	3	6	3	6	5	7	4	6	61	159	other causal agent
no causal agent			24		27		26	22	20	21	12	18	14	17	16	17	10	16	21	19	29	20	17	366	no causal agent
unclassifiable			1		1		1			1			3	2	1	1	1	2		1	2			17	unclassifiable
total			1,212		980		1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	15,982	total

Workers age of fatal and non-fatal accidents in steel making in 1999-2021

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age
19 years old or less	29	38	30	22	30	31	36	21	34	28	20	19	26	21	19	20	13	12	18	21	16	12	12	528	19 years old or less
20-29	210	220	212	204	171	215	184	189	186	216	122	153	190	169	125	159	134	133	120	137	122	113	122	3,806	20-29
30-39	181	188	193	194	151	208	254	216	222	213	135	191	200	179	173	177	144	160	166	155	135	128	154	4,117	30-39

40-49	275	234	213	185	200	182	190	205	204	199	132	152	170	188	153	173	151	172	158	187	196	156	183	4,258	40-49
50-59	413	424	402	321	309	322	314	282	270	254	176	183	159	157	132	141	126	118	136	151	121	106	148	5,165	50-59
60 years old or more	143	172	162	123	119	147	139	140	165	166	89	140	117	97	113	99	92	92	86	97	104	90	97	2,789	60 years old or more
total	1,251	1,276	1,212	1,049	980	1,105	1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	20,663	total

Workers' number of workplace of fatal and non-fatal accidents in steel making in 1999-2021

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Workers scale
9 workers or less	276	266	265	239	234	233	197	192	177	153	95	99	105	102	105	92	85	79	76	89	90	59	72	3,380	9 workers or less
10-29	382	417	371	294	299	327	329	292	309	296	204	239	246	203	210	193	201	179	205	200	203	162	186	5,947	10-29
30-49	173	208	208	159	116	164	182	172	173	218	92	144	152	166	106	132	99	135	79	122	101	107	152	3,360	30-49
50-99	167	157	159	148	135	161	173	151	159	161	104	153	141	131	123	154	106	114	112	117	108	114	108	3,156	50-99
100-299	158	145	133	136	118	136	138	152	161	159	108	123	118	131	109	117	111	127	129	134	113	91	132	2,979	100-299
300 workers or more	95	83	76	73	78	84	98	94	102	89	71	80	100	78	62	81	58	53	83	86	79	72	66	1,841	300 workers or more
total	1,251	1,276	1,212	1,049	980	1,105	1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	20,663	total

Month of fatal and non-fatal accidents in steel making in 1999-2021

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January	90	100	91	78	79	79	88	77	102	96	65	69	65	60	55	63	60	67	40	61	60	59	57	1,661	January
February	106	121	106	76	64	81	113	97	92	90	55	55	73	71	50	63	46	58	55	56	53	48	47	1,676	February
March	95	99	127	84	88	107	91	95	98	103	58	74	82	78	46	69	63	66	60	55	59	57	44	1,798	March

April	104	80	119	84	95	98	85	84	78	99	50	57	67	62	69	48	58	65	57	66	73	70	64	1,732	April
May	81	116	96	78	67	102	85	91	96	94	52	55	74	72	62	67	61	56	63	71	63	36	58	1,696	May
June	103	110	120	79	79	91	92	88	90	91	52	91	75	87	65	54	65	37	54	67	63	46	59	1,758	June
July	138	110	97	94	82	90	103	80	89	107	63	83	65	55	70	68	53	59	60	66	73	53	57	1,815	July
August	102	116	94	101	86	91	105	84	85	84	52	65	73	58	69	67	47	41	63	67	56	49	102	1,757	August
September	104	104	101	91	98	95	110	95	89	88	61	77	101	70	57	78	68	58	68	60	56	52	65	1,846	September
October	116	128	113	97	83	107	86	93	103	75	66	75	64	62	56	78	46	65	56	69	41	44	56	1,779	October
November	113	102	77	95	82	82	94	85	85	82	39	71	67	73	49	57	50	69	48	49	49	53	58	1,629	November
December	99	90	71	92	77	82	65	84	74	67	61	66	56	63	67	57	43	46	60	61	48	38	49	1,516	December
total	1,251	1,276	1,212	1,049	980	1,105	1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	20,663	total

Prefecture of fatal and non-fatal accidents in steel making in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture
Hokkaido	19	17	33		22		20	25	23	18	15	26	26	23	13	21	24	22	24	27	18	18	17	451	Hokkaido
Aomori	2	3	6		1		5	3	11	4	4	4	2	8	2	6	5	4	6	4	4	2	5	91	Aomori
Iwate	18	14	16		11		17	16	11	20	11	6	6	8	6	9	5	7	5	9	2	7	13	217	Iwate
Miyagi	6	5	12		11		12	7	9	9	7	5	11	5	5	4	4	3	9	7	8	8	10	157	Miyagi
Akita	4	8	7		7		10	11	8	8	6	9	5	5	5		6	5	5	7	2	6	7	131	Akita
Yamagata	22	25	20		14		23	20	16	15	13	13	18	14	15	10	8	15	5	9	12	11	6	304	Yamagata
Fukushima	18	16	15		17		20	23	13	12	5	10	8	11	6	9	14	13	9	9	9	11	13	261	Fukushima
Ibaraki	25	18	32		18		18	24	20	28	14	33	21	21	15	21	26	13	31	26	12	11	18	445	Ibaraki
Tochigi	22	22	14		13		15	10	14	17	11	11	9	12	16	11	4	5	10	13	13	7	7	256	Tochigi
Gunma	32	20	18		14		23	25	16	23	18	16	14	18	22	16	13	15	11	18	20	6	12	370	Gunma

Saitama	87	136	88		62		68	52	60	52	37	42	47	39	37	42	35	30	35	39	41	38	33	1,100	Saitama
Chiba	69	66	86		26		43	42	42	44	32	23	27	32	22	28	26	27	24	27	20	24	40	770	Chiba
Tokyo	35	38	37		25		24	15	27	18	18	14	17	12	13	9	11	13	9	9	11	9	8	372	Tokyo
Kanagawa	41	40	33		30		32	44	32	28	15	23	20	21	14	20	17	15	35	24	21	13	21	539	Kanagawa
Niigata	31	41	22		23		43	46	43	55	26	42	48	30	24	25	36	28	37	35	29	20	26	710	Niigata
Toyama	29	19	27		12		11	29	16	27	10	20	10	5	17	11	11	8	5	11	11	13	9	311	Toyama
Ishikawa	13	14	12		7		13	16	14	14	8	11	24	15	11	15	12	10	6	17	10	6	13	261	Ishikawa
Fukui	6	5	8		7		3	5	5	4	8	3	4	6	4	4	5	4	7	5	8	2	4	107	Fukui
Yamanashi	10	3	1		2		3	4	3	9	1	2	7		6	8	2	4		3	4	2		74	Yamanashi
Nagano	14	13	16		3		9	13	10	14	4	10	4	8	8	6	6	6	4	5	7	3	4	167	Nagano
Gifu	14	24	16		22		30	24	32	21	17	16	20	15	19	20	12	17	15	14	17	12	10	387	Gifu
Shizuoka	49	51	34		28		28	32	33	32	18	23	44	29	22	27	25	21	22	30	21	24	31	624	Shizuoka
Aichi	171	134	157		125		132	118	148	135	84	119	111	108	92	93	67	85	82	91	89	69	96	2,306	Aichi
Mie	37	41	43		39		27	27	29	24	18	23	22	28	22	20	20	15	18	19	16	14	21	523	Mie
Shiga	7	10	7		23		15	17	19	9	7	7	11	4	11	7	9	13	10	4	8	3	8	209	Shiga
Kyoto	17	9	7		11		14	9	11	9	4	10	12	5	5	7	9	8	6	4	6	6	4	173	Kyoto
Osaka	113	114	125		115		86	86	99	90	49	61	60	79	69	70	59	71	54	68	60	63	80	1,671	Osaka
Hyogo	67	70	44		63		73	57	59	62	44	49	44	43	48	56	29	27	42	51	34	41	48	1,051	Hyogo
Nara	12	21	20		6		15	15	5	9	4	13	12	11	13	10	9	11	8	7	13	8	8	230	Nara
Wakayama	13	20	19		16		10	15	16	16	12	9	12	6	8	8	7	2	5	10	8	7	9	228	Wakayama
Tottori	5	2	2				4	2	4	1	2	2	2	1	3	2	3	4	1	2	1	1	1	45	Tottori
Shimane	18	19	24		14		11	33	17	18	9	18	18	14	11	15	4	12	16	14	8	14	11	318	Shimane
Okayama	22	27	37		26		49	39	38	47	32	34	45	40	21	31	26	30	34	32	31	28	23	692	Okayama

Hiroshima	48	53	47		48		60	46	40	47	18	35	33	34	28	33	21	35	28	47	37	25	29	792	Hiroshima
Yamaguchi	23	16	11		19		22	22	15	18	6	11	4	16	9	4	12	10	7	7	11	12	6	261	Yamaguchi
Tokushima	2	3	5				3	4	7	2	1	3	3	3		5	1	1		2	1		4	50	Tokushima
Kagawa	7	9	7		5		5	4	7	11	9	12	8	6	2	8	1	1	5		6	4	4	121	Kagawa
Ehime	10	15	6		10		11	5	13	16	3	6	7	8	6	14	11	15	6	2	2	10	11	187	Ehime
Kochi	19	16	15		12		18	10	15	14	10	18	7	10	10	12	5	8	8	9	10	3	5	234	Kochi
Fukuoka	56	57	48		37		43	31	36	36	31	30	34	30	25	19	23	36	21	17	30	20	23	683	Fukuoka
Saga	5	11	4		5		8	4	9	5	3	1	1	3	5	3	3	2	4	2	4	7	2	91	Saga
Nagasaki	7	6	7		5		10	4	4	5	6	1	3	6	8	7	5	5	3	1	5		1	99	Nagasaki
Kumamoto	6	8	14		8		13	8	12	8	7	8	5	8	7	5	12	5	5	3	2	4	3	151	Kumamoto
Oita	6	7	3		12		10	2	8	12	9	3	11	7	7	7	8	5	5	4	4	6	2	138	Oita
Miyazaki	7	3	4		6		2	2	7	3	3			1	1		4		1	1	6	3	1	55	Miyazaki
Kagoshima	4	3	1				3	3	1	2	1			1			1			2				22	Kagoshima
Okinawa	3	4	2				3	4	4	5	4	3	5	2	2	11	4	1	1	1	2	4	9	74	Okinawa
total	1,251	1,276	1,212		980		1,117	1,053	1,081	1,076	674	838	862	811	715	769	660	687	684	748	694	605	716	18,509	total

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more. Data of 2011 year include fatal and non-fatal accidents caused by Great East Japan Earthquake in 2011.

Data sources: <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.htm> (MHLW, Japan)

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Fatal accidents in steel making in Japan in 1999-2021

Type of fatal accidents in steel making in 1999-2021

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Type of accidents
fall from height	2	1	5	4		2	1	1	1	4	1	2	2	4		1	2	3		3	1			40	fall from height
falling to same level		1	1				1				1		1		1							1		7	falling to same level
crash										1														1	crash
struck by flying or falling object	1		2	1	4	2	2	2	2	2	1	4	2				1	2	2	1	1		2	34	struck by flying or falling object
collapse	3	1	3	2	1		1	3	1	1			2	1	1	2	1	1		2				26	collapse
crashed by	6		1	1	1	3		2	2	3		1	3	1	2	4	2	2	3	1	2	2	2	44	crashed by
caught in/between	9	5	4	11	11	4	4	13	9	6	4	4	2	7	4	6	5	8	7	4	3	3	6	139	caught in/between
cut					1								1											2	cut
injury to the sole of the foot					1																			1	injury to the sole of the foot
drown					1							1	5											7	drown
contact to high/low-temperature	2	1	5	3	5	1	3		3					1	2		1	1		1			1	30	contact to high/low-temperature
contact to harmful substance	2		1	1	1	1	5	3						2	1				1	2	3		2	25	contact to harmful substance

electric shock			1			1		1	1	1			2						1	1			9	electric shock		
explosion	1							2	1	1			1		1	2			1		1			11	explosion	
burst														1										1	burst	
fire				1	2										1					1				5	fire	
traffic accident (public road)																								3	traffic accident (public road)	
traffic accident (others)																									traffic accident (others)	
reaction to motion/improper motion																									reaction to motion/improper motion	
others								1							2								1	1	6	others
unclassifiable																									unclassifiable	
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total	

Causal agents (large) of fatal accidents in steel making in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine	3	2	8	4	9	4	2	4	5	7	3	4	2	4	2	4	3	4	5	1	2	2	4	88	machine
crane, conveying machine	11	5	7	6	7	4	3	11	7	7	3	3	5	7	3	9	2	10	3	4	3	2	4	126	crane, conveying machine
other equipment	2		3	7	4	4	1	5	6	3	1	2	2	3	3		3	3	4	4	3	2	1	66	other

																										equipment
temporary buildings, establishments	3		3	3	1	1	2	1		1		2	3	1			1			2					24	temporary buildings, establishments
substance, material	6			3	4	2	5	3	2	1		1	4	1	2	3	1		2	4	3		3	50	substance, material	
load	1	1	1	1	2		2	2									2						1	13	load	
environment		1	1		1		2	1				1	7	1	2					1	1			19	environment	
others						1									1	1						1	1	5	others	
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total	

Causal agents (middle) of fatal accidents in steel making in 1999-2021

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (M) agents	
engine																										engine
power transmission mechanism		1						1										1						1	4	power transmission mechanism
woodworking machine													1												1	woodworking machine
construction machine						1	1		1	2		1			1				1				1		9	construction machine
metal manufacturing			2	2	3		1	2	2	2	2	2		2	1	1	1			1	1		2		27	metal manufacturing

temporary buildings, establishments	3		3	3	1	1	2	1		1		2	3	1		1			2				24	temporary buildings, establishments	
hazards, harmful substances	2			1	3	2	4	3	1	1			1	1	1	1			1	2	3		2	29	hazards, harmful substances
materials	4			2	1		1		1			1	3		1	2	1		1	2			1	21	materials
load	1	1	1	1	2		2	2								2							1	13	load
natural environment		1	1		1		2	1				1	7	1	2					1	1			19	natural environment
other causal agent						1																	1	2	other causal agent
no causal agent																1							1	2	no causal agent
unclassifiable															1									1	unclassifiable
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total

Causal agents (small) of fatal accidents in steel making in 1999-2021

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (S) agents	
engine																										engine
power transmission mechanism		1						1										1					1	4	power transmission mechanism	
circular sawing machine													1											1		circular sawing machine

machines											1											1	machines	
lathe			1							1												2	lathe	
drill press, milling machine										1												1	drill press, milling machine	
grinding machine, buffing machine					1					1												2	grinding machine, buffing machine	
power press																							power press	
forging pressure hammer				1			1		2													4	forging pressure hammer	
shearing machine					1			1						1							1	4	shearing machine	
other metal manufacturing machines			1	1	1			1		1		2		2	1		1			1	1	1	14	other metal manufacturing machines
centrifugal machine			4													1						5	centrifugal machine	
mixer, grinder			1											1			1			1		4	mixer, grinder	
roll machine (except printingroll machine)	1				2	2			1			1		2		1	2					12	roll machine (except printingroll machine)	
injection molding machine			1														1					2	injection molding machine	
food manufacturing machine																							food manufacturing machine	
printing machine																							printing machine	
industrial robot					1																	1	industrial robot	

other general power machines	2	1		2	3	1		1	1	3	1		1		1	2	2		1		1	23	other general power machines		
felling machine																							felling machine		
mobile logging machine																							mobile logging machine		
skyline yarding machine																							skyline yarding machine		
other mobile silviculture machine																							other mobile silviculture machine		
crane	5	1	4	4	4		2	4	2	2		1	1		1	1		6		1	2	1	4	46	crane
mobile crane						1					1													2	mobile crane
derrick crane																								derrick crane	
elevator, lift																								elevator, lift	
cargo lifting appliance																								cargo lifting appliance	
gondola														1										1	gondola
lumberyard equipment, logging cableway																								lumberyard equipment, logging cableway	
simple skyline yarding equipment																								simple skyline yarding equipment	
other powered crane																								other powered crane	
truck		1		1	1					2			1		1	2		1						10	truck
forklift	1	1	2			1		1	1		1	1	2	1		2	2			1	1	1		19	forklift

other kiln, caldron				1																			1	other kiln, caldron	
transmission						1		1																2	transmission
electric power facilities				1																				1	electric power facilities
other electrical equipment													1											1	other electrical equipment
human power cranes																									human power cranes
human power hauling equipment																									human power hauling equipment
human power machine																									human power machine
hand tool																									hand tool
ladder				1						1	1													3	ladder
slinging tool				1	1	1					1						2	2	2	1				11	slinging tool
other tools	2																							2	other tools
other equipment, facilities				3	1	1		2		2	1	1				3		1	1	1	2			19	other equipment, facilities
scaffolding																									scaffolding
timbering																									timbering
stairs, landing stage				1																				1	stairs, landing stage
opening				1						1	1	1							1					5	opening
roof, beam, haze, crossbeam, principal																								2	roof, beam, haze, crossbeam,

60 years old or more	1	1	4	3	5	3	2	5		7	2		4	1	2	4	1	3	1	1			2	52	60 years old or more
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total

Workers' number of workplace of fatal accidents in steel making in 1999-2021

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Workers scale
9 workers or less	4		2		6	3	2	6	1	2	1	1	3	1	2		1	2		3	1		1	42	9 workers or less
10-29	1	2	3	2	5		4	2	2	1		1	4	1	3	4	3	1	5	1	2	1	1	49	10-29
30-49	1	1	2	5	4		1	3	2	3		2	2	2		1	2	2	1	1	2	2	1	40	30-49
50-99	2		8	1	4	2		5	2	6	2	2	7	1	1	3	1	2	3	4	2		4	62	50-99
100-299	9	2	4	3	3	5	2	4	2	3	3	3	3	4	5	6	3	6	4	3	1	4	5	87	100-299
300 workers or more	9	4	4	13	6	6	8	7	11	4	1	4	4	8	2	3	2	4	1	4	4		2	111	300 workers or more
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total

Month of fatal accidents in steel making in 1999-2021

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January	2		5	1	7	1	3	1	1	3	1	2	1	2	1	1	2	3	1		2	2	1	43	January
February	1	1	2	1	3			1	1		2		3		1	2	1	4	1	2		1	1	28	February
March	3	3	2	1	1		2	3	2	2		1	9	1		1	1		1	2	1			36	March
April	2	1	2	2	1	1	5		2	1	1	1	1	2		4	1		3	4		1	1	36	April
May			2	2	3	2	3	5		1	2		2	3	1	1	1	1	2		4		3	38	May
June	4		1	3	1	2	1	2	3	2		4	3	2	2			1				1	3	35	June
July	2	2	2	1	4	1	1	3		5		1	1		4	2	3	1		1	2			36	July

August	2		3	1	1	4		1	2	1			1		1	1	1		1	1			1	22	August
September	3		1	3		2		2	3				1			1	1		1	3	1			22	September
October	2	1	1	4	1	2		5	1	2			1	1	1	1		1		2		1		27	October
November	2			2	6	1	1	2	4		1	2		2	1	1	1	3	3	2			2	36	November
December	3	1	2	3			1	2	1	2		2	1	3	1	3		2	2	1			2	32	December
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total

Prefecture of fatal accidents in steel making in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture	
Hokkaido			2		1	1		2									1		2	1	1			11	Hokkaido	
Aomori									3															3	Aomori	
Iwate													2					1					1	4	Iwate	
Miyagi			1										5						1	1	1	1		10	Miyagi	
Akita												1												1	Akita	
Yamagata								1																1	Yamagata	
Fukushima							1		1							1								3	Fukushima	
Ibaraki	3	1	2			2	1			1					1		1	1	1		1		1	16	Ibaraki	
Tochigi													1								1			1	3	Tochigi
Gunma			1	2										1	1								2	7	Gunma	
Saitama		1		1	3	1	1	1				1	1	2		1			1				1	15	Saitama	
Chiba	3	2	1	5	1	3		3	1			1	1	2	1	4	2	2		1		1		34	Chiba	
Tokyo	1				1	1	1																	4	Tokyo	
Kanagawa	1			2	1										1			1	1	1				8	Kanagawa	

Ehime																1	1						2	Ehime	
Kochi									1															1	Kochi
Fukuoka	1		1		6	1		3			1	1	1		2		1				1	2	1	22	Fukuoka
Saga																				1				1	Saga
Nagasaki											1													1	Nagasaki
Kumamoto																									Kumamoto
Oita					1		1			1			2		1	1		2	1					10	Oita
Miyazaki																								1	Miyazaki
Kagoshima																									Kagoshima
Okinawa													1											1	Okinawa
total	26	9	23	24	28	16	17	27	20	19	7	13	23	17	13	17	12	17	14	16	12	7	14	391	total

Data sources: <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.htm> (MHLW, Japan)

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