

Fatal and non-fatal accidents in nonferrous metal making in Japan in 1999-2022

nonferrous metal making industry Code No.0111

Type of accidents in nonferrous metal making in 1999-2022

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	2022	total
fall from height	36	43	43	38	29	39	40	41	35	41	40	28	24	29	29	31	26	31	37	33	29	25	23	31	801
falling to same level	42	35	46	49	37	40	36	41	42	44	40	31	28	45	31	26	36	28	27	36	42	33	43	47	905
crash	22	19	23	19	15	19	14	26	19	21	12	16	9	14	13	6	10	11	12	23	10	18	13	9	373
struck by flying or falling object	63	73	59	47	42	65	48	52	59	46	34	33	36	38	34	34	34	38	32	29	21	24	34	28	1,003
collapse	12	14	13	6	14	3	11	12	21	14	10	10	5	14	10	6	15	8	5	6	10	5	6	11	241
crashed by	30	26	25	32	16	20	17	29	28	23	19	15	26	20	13	22	9	26	9	17	14	20	14	15	485
caught in/between	192	181	188	211	173	184	151	146	165	180	117	117	134	109	124	107	104	121	104	120	113	85	97	101	3,324
cut	43	44	42	42	34	36	44	38	25	25	24	20	28	28	23	27	24	25	22	20	16	19	17	21	687
injury to the sole of the foot	4	1	3	1	2	1	1	2	2	1		2		2		1	2	1		1		1	1		29
drown			1									1				1									3
contact to high/low-	59	68	59	48	51	65	51	59	60	47	37	54	38	38	42	38	40	30	41	52	30	30	21	35	1,093

temperature																									
contact to harmful substance	10	8	6	9	11	6	15	10	6	6	10	6	12	7	4	3	3	6	3	11	3	2	6	4	167
electric shock		3	2	1		1				1	1	2										1			12
explosion	12	11	11	4	5	4	5	4	13	7	6	3	4	5	3	1	4	5	3			2	5	4	121
burst				7	2			1	2					1				3	1	2					19
fire		1				1		2	1	1		1	1	1		3	2			2	2		2	2	22
traffic accident (public road)	3	7	5	2	5	5	8	1	3	2		3	2	2	4	4	2	6	1	1	2	2			70
traffic accident (others)									1			1				1	3								6
reaction to motion/improper motion	30	36	36	30	21	18	42	43	37	42	22	23	20	19	28	13	15	21	27	29	38	41	44	55	730
others	2	3	1		5	2	1	2	1	1		3	2	3	2		3	1	2		3	1	11	2	51
unclassifiable		1			2	1	1			1						2	1	1				1			11
total	560	574	563	546	464	510	485	509	520	503	372	369	369	375	360	326	333	362	326	382	333	310	337	365	10,153

Causal agents (large) of fatal and non-fatal accidents in nonferrous metal making in 1999-2022

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	2022	total
machine	185	164	176	179	163	161	141	147	160	157	106	105	110	109	103	103	106	108	100	103	99	94	85	86	3,050

construction machine	2	2	3		2	2	1		2		2	2	2	2	2	1	2	2	1	1	3	2	2	1	39
metal manufacturing machine	112	87	89	99	77	81	73	87	92	78	61	57	65	58	50	62	55	61	52	52	48	44	52	42	1,634
general machine	58	56	70	67	73	64	59	53	58	68	37	41	37	40	46	32	45	39	39	40	40	39	29	38	1,168
mobile silviculture machine																									
crane	16	22	20	22	14	18	20	18	17	16	15	16	16	18	13	12	14	17	16	16	14	7	10	14	381
conveying machine	55	58	43	69	51	57	41	40	46	43	34	32	33	31	47	32	29	38	34	32	33	23	31	24	956
vehicle	2	3	5	3	5	5	10	2	5	4	2	3	2	2	1	4	3	5		4	3	1			74
pressure vessel	1	1	2				1		2	1				2		1		1							12
chemical facilities	1	2		2	1		3	2	2	1					1			4	2	3			1		25
welding equipment	1	3	1		1	1			1		2	1	1	4	1	1		4			1			1	24
kiln, caldron	20	24	23	16	21	23	18	18	31	24	15	20	12	14	14	12	15	9	16	12	11	13	16	11	408
electric equipment	2	3	4	2	1	3	1		1	1	3	3					1			1	2	2			30
human power machine, tools	16	21	25	13	20	27	19	19	21	20	12	12	13	17	16	17	5	11	6	12	12	11	14	17	376
tools	27	31	33	31	27	25	32	35	38	29	20	20	26	33	19	19	28	28	23	27	22	27	22	19	641
other equipments,	20	15	13	25	8	10	15	13	18	18	18	8	13	10	11	14	8	8	12	15	13	12	6	14	317

facilities																									
temporary buildings, establishments	44	53	52	49	42	41	38	54	31	59	45	38	40	40	38	32	35	30	40	49	32	31	43	57	1,013
hazards, harmful substances	19	15	16	13	13	13	17	17	10	12	12	9	20	13	8	11	8	11	6	16	8	5	9	10	291
materials	101	99	87	83	69	72	80	91	87	68	45	68	58	47	54	43	50	54	40	50	32	34	46	57	1,515
load	29	31	34	20	15	26	23	22	27	28	23	14	12	13	13	9	16	17	11	14	21	23	24	20	485
natural environment	10	9	6	8	4	13	4	8	6	6	9	7	3	9	9	6	7	4	8	11	7	3	6	12	175
other causal agent	4	3	6	2	2	3	5	6	3	3		4	2	2	1	3	2	3	4	4	3	2	11	4	82
no causal agent	7	17	17	8	6	9	15	15	14	12	11	9	8	11	10	6	5	9	8	13	20	22	13	19	284
unclassifiable				1	1	3	2	2		1					1	1	1	1							14
total	560	574	563	546	464	510	485	509	520	503	372	369	369	375	360	326	333	362	326	382	333	310	337	365	10,153

Causal agents (small) of fatal and non-fatal accidents in nonferrous metal making in 1999-2022

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	2022	total
engine														1					1						2
power transmission mechanism			8		4		4	4	5	8	4	3	3	4	3	4	1	4	4	7	7	3	1	3	84
circular sawing			4		2		2	3		1		2	2	1	1	2	1	1			1	3		1	27

machine																									
band sawing machine			2		1		2		1	2			1	1	1	1	2	1	1	2		1	1		20
wood planer machine					1				1													1			3
hollow chisel mortiser, wood borer					1															1					2
chamfering machine, router, woodworking milling machine													1												1
chain saw																		1				1			2
other woodworking machines					2				1		2		1		1			1						1	9
leveling, transporting or loading machine			2		2							1		1		1					2	1		1	11
excavating machine							1		1		2	2	1	2	1		1		1		1				13
foundation work machine																									
hardening machine																							1		1
demolition machine									1							1		2		1			1		6

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane				2		3	2	1		2	1	1	1	2	1	2	1			1		1		21	
truck			12	7		11	7	11	7	9	6	6	7	13	4	6	10	9	6	5	2	6	2	146	
forklift			16	25		20	22	23	26	10	10	17	15	12	13	14	20	12	19	16	12	11	12	325	
railway equipment									1	1									1	1			4		
conveyor			12	16		10	8	7	6	11	13	9	6	19	10	9	6	11	5	7	7	11	8	191	
loader			1				1				1		1	1	2				1				8		
straddle carrier																									
rough terrain hauler																									
other powered conveying machines			2	3			2	5	3	3	2	1	2	2	3		2	2	1	4	1	3	2	43	
cars, bus, motorcycle			4	5		10	2	5	2	2	3	2	2	1	4	3	4		4	3	1			57	
railway vehicle																									
other vehicles			1						2								1							4	
boiler								1							1									2	
pressure vessel			1										2				1							4	

other pressure vessels			1			1		1	1														4		
chemical facilities				1		3	2	2	1				1			4	2	3			1		20		
gas welding equipment								1		2	1	1	3									1	9		
arc welding equipment				1									1			4							6		
other welding equipment			1											1	1					1			4		
kiln, caldron			21		19		17	17	27	23	15	20	11	13	13	12	12	6	14	12	9	9	16	11	297
industrial dryer			2					2							2					1				7	
other kiln, caldron				2		1	1	2	1			1	1	1		1	3	2		1	4			21	
transmission				1						2	1								1	2	1			8	
electric power facilities			2					1	1		2													6	
other electrical equipment			2			1				1					1						1			6	
human power cranes				1		1	1	1				1			1			1	1		2	2	1	13	
human power hauling equipment			9		9		8	3	8	9	3	6	4	10	6	4	3	7	2	6	4	3	7	7	118
human power			2		1		1	1		1		2			2					1		1	2	14	

machine																										
hand tool			14		9		9	14	12	10	9	4	8	7	10	10	2	4	3	5	7	6	4	7	154	
ladder			9		3		12	14	11	9	10	11	9	7	3	5	8	9	10	11	10	7	7	8	173	
slinging tool			7		5		8	5	6	3	3	5	7	4	4	5	2	3	1	3	1	2	3	2	79	
other tools			17		19		12	16	21	17	7	4	10	22	12	9	18	16	12	13	11	18	12	9	275	
other equipment, facilities			13		8		15	13	18	18	18	8	13	10	11	14	8	8	12	15	13	12	6	14	247	
scaffolding							1	1						1			1	1		1				1	7	
timbering																								1	1	
stairs, landing stage			8		6		8	6	5	9	12	2	3	6	6	6	8	6	11	11	7	4	8	13	145	
opening			2				1	4	2		2		1	1	1			1	2			1	2	1	21	
roof, beam, haze, crossbeam, principal rafter			1		1			1	1	2			2			1	1		1			1	1	1	14	
working platform, boot board			10		8		5	14	7	14	3	9	7	6	6	3	6	5	6	7	7	2	7	7	139	
passage			21		15		12	19	10	20	22	16	15	18	17	14	12	14	14	13	12	15	15	22	316	
building, establishment			9		6		8	4	6	9	2	6	10	4	5	5	4	2	5	10	3	4	5	6	113	
other temporary buildings, establishments			1		6		3	5		5	4	5	2	4	3	3	3	1	1	7	3	4	4	6	70	

explosive substance			5						1	5		1	1	1	1			2			2	19			
inflammable substance				1			5	1	3		3	3		1	5			2	3			1	1	29	
inflammable gas			1	1			2						1			1			2	4		2		14	
harmful substance			6	5		13	3	3	4	4	3	9	4	4	4	3	6		4		1	4	2	82	
radiation																									
other hazards, harmful substances			4	6		4	7	6	4	3	3	7	7	2	1	4	5	4	5	4	4	2	5	87	
metal material			80	56		74	81	77	55	42	61	54	39	49	34	45	49	33	49	28	29	41	43	1,019	
lumber, bamboo			1	1			1	1	3	1			3	2						1	2	1	3	20	
stone, sand, substance			1	3					2				1		1	1	2	2	1	1		1	1	1	18
other materials			5	9		6	9	7	10	2	7	3	5	2	8	3	3	6		3	2	3	10	103	
load			23	15		22	19	26	27	20	11	11	10	12	9	15	14	7	13	18	19	22	17	330	
machine/equipment as load			11			1	3	1	1	3	3	1	3	1		1	3	4	1	3	4	2	3	49	
natural ground, rock													1					1				3		5	
standing tree																					1			1	
water			1								2	2						1						6	
abnormal environment							1	1		3									1					6	

high/cold temperature environment			3		2		2	5	4	3	5	4		6	7	4	5	2	4	9	5	1	2	10	83
other environments			2		2		2	2	1	3	1	1	1	2	2	2	2	2	2	1	2	1	1	2	34
other causal agent			6		2		5	6	3	3		4	2	2	1	3	2	3	4	4	3	2	11	4	70
no causal agent			17		6		15	15	14	12	11	9	8	11	10	6	5	9	8	13	20	22	13	19	243
unclassifiable					1		2	2		1					1	1	1	1							10
total	560	574	563	546	464	510	485	509	520	503	372	369	369	375	360	326	333	362	326	382	333	310	337	365	10,153

Workers age of fatal and non-fatal accidents in nonferrous metal making in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less	19	20	14	23	17	20	17	14	13	16	9	9	13	8	10	2	10	11	8	11	8	6	4	11	293
20-29	108	128	112	88	96	106	103	96	100	108	78	65	68	82	62	67	66	77	70	71	61	42	48	66	1,968
30-39	97	105	106	114	108	114	111	114	113	109	88	92	97	84	85	62	84	82	62	66	66	70	74	70	2,173
40-49	119	114	119	96	78	96	78	103	122	94	66	88	95	78	85	86	71	88	85	108	84	73	91	70	2,187
50-59	161	162	163	165	119	114	110	121	110	112	83	70	54	70	70	55	57	52	61	83	65	77	76	104	2,314
60 years old or more	56	45	49	60	46	60	66	61	62	64	48	45	42	53	48	54	45	52	40	43	49	42	44	44	1,218
total	560	574	563	546	464	510	485	509	520	503	372	369	369	375	360	326	333	362	326	382	333	310	337	365	10,153

Workers' number of workplace of fatal and non-fatal accidents in nonferrous metal making in 1999-2022

Chiba	17	14	13		9		8	12	10	15	11	12	21	11	12	12	13	13	13	12	12	11	15	13	279
Tokyo	28	12	17		14		10	14	10	14	10	3	6	7	10	10	6	8	3	11	7	8	2	7	217
Kanagawa	19	17	20		11		19	14	16	15	7	7	20	9	11	10	12	18	8	11	15	4	11	11	285
Niigata	6	14	11		7		10	13	8	13	7	8	10	15	9	5	13	7	7	5	11	10	7	13	209
Toyama	34	27	13		20		24	30	22	22	22	15	17	26	12	18	15	19	20	16	17	14	18	11	432
Ishikawa		5	2		3		1		1	1	1	2	3	2	2		3	1	1		1	1	2	1	33
Fukui	5	9	4		8		2	4	6	4	7	7	2	6	4	3	2	6	4	5	2	4	3	3	100
Yamanashi	2	6	6		6		5	4	1	3	3	3	3	2	2	2	1	4	3	1	2	1	2	5	67
Nagano	14	24	12		22		14	14	14	12	7	11	13	10	11	8	9	11	8	11	6	7	14	6	258
Gifu	15	18	16		17		22	18	14	22	10	10	7	12	12	9	12	10	9	14	9	18	18	6	298
Shizuoka	34	36	34		15		27	27	40	29	23	18	11	16	18	25	14	17	13	25	15	18	24	16	495
Aichi	39	52	59		34		39	43	43	32	38	30	35	28	29	22	30	36	27	26	27	28	27	32	756
Mie	17	19	16		21		13	8	15	16	6	15	6	13	13	8	9	9	9	4	9	11	13	14	264
Shiga	8	8	11		10		16	13	11	21	4	6	9	13	6	7	5	10	6	9	7	3	6	7	196
Kyoto	13	13	15		14		13	14	19	14	9	9	14	9	9	6	10	7	3	7	10	6	7	7	228
Osaka	65	50	52		40		45	56	51	58	35	35	42	41	34	28	41	33	34	47	28	26	29	49	919
Hyogo	24	22	22		21		19	17	23	22	29	13	20	18	17	16	13	13	9	14	12	10	11	10	375
Nara	1	1	1		2		3	5	1	2	6	5	1	1	2	5	2	3	3	4	1		1		50
Wakayama	1	1	1				1	1	2		1			1			1	1	1	1					13
Tottori		2			2		1	2	1			1	2				2	1	1			1		2	18
Shimane							2	1				2					2				1				8

Okayama	9	12	17		7		8	13	7	11	11	12	5	8	10	10	7	13	18	20	8	7	11	13	237
Hiroshima	9	6	9		11		14	16	10	10	8	13	6	8	11	2	5	9	5	1	10	7	11	13	194
Yamaguchi	10	10	4		1		6	5	9	8	5	3	4	3	6	4	3	7	5	5	8	5	4	4	119
Tokushima	1	3			2		2	3	1	1			1			1			1	1		1	1		19
Kagawa	5	4	7		8		2	1	4	4	3	1	4	4	3	2		3		3		2	1	3	64
Ehime	2	2	6		5		6	4	3	4	3	4	6	1		7	1	6	3	3	3	1	2	6	78
Kochi																	1		2			2	1	1	7
Fukuoka	13	13	22		15		8	11	14	14	14	14	10	11	17	13	12	11	13	15	13	9	12	16	290
Saga		1	3				4	1						1	1				1				1	2	15
Nagasaki	4		6		3		1	1	1	2	1	1	2		2	1	1	2	1	2	3			2	36
Kumamoto	5	21	5		7		6	7	2	4	2	1	3	4		5	3	2	5	4	7	4	4	3	104
Oita	4	2	2		2		3	2	4	5	6	3	1	2	2	1	2	2	4	3	1	2	1		54
Miyazaki		1	1		4		3	4	3	3		1	3	3	3	1		2		3					35
Kagoshima		1	2				2		1	1	1	2	3	1	1		2		1	1	4	1		1	25
Okinawa	1		1				2			1				1				1			1	2		1	11
total	560	574	563	546	464	510	485	509	520	503	372	369	369	375	360	326	333	362	326	382	333	310	337	365	10,153

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more.

Data of 2022 year do not include Covid-19 cases. Data of 2020 & 2021 year include Covid-19 cases. Fatal and non-fatal data are same situation.

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.html> (MHLW, Japan)

metal manufacturing machine			1					4	1					1	1	1			1		1			11	
general machine	3	1	5	1	1	3	2	2	2	3		1	4	1	1	3	2				1			36	
mobile silviculture machine																									
crane		1		1									1	1				1						5	
conveying machine	2	3	1	3	1		1		1		1			1	2	1		1	1				1	1	21
vehicle			1					1								1								3	
pressure vessel																									
chemical facilities															1			2						3	
welding equipment																									
kiln, caldron	1			1					2						2									6	
electric equipment										1														1	
human power machine, tools				1		1																		2	
tools									1			1									1			3	
other equipments, facilities	2														1							1		4	
temporary buildings, establishments	2	2			1					1		1				1							1	9	
hazards, harmful substances	2	1	1		1	1		1			2										1			10	

machine																								
skyline yarding machine																								
other mobile silviculture machine																								
crane											1	1				1							3	
mobile crane																								
derrick crane																								
elevator, lift		1																					1	
cargo lifting appliance																								
gondola																								
lumberyard equipment, logging cableway																								
simple skyline yarding equipment																								
other powered crane				1																				1
truck		1												1										2
forklift	1		1	2			1						1	1							1			8
railway equipment																								
conveyor	1			1											1			1						4

20-29	1	2	2			1		1			1	1	1		1	2	2	1	1			1		1	19
30-39	1	2	2		2	2	1	2	2		1			2	3	2		1			1				24
40-49	5	3	4	2	1	1		2		2	2	1	1		2			2	1	1	1		1		32
50-59	6	2	4	3	1	2	3	3	3	1	1	1	2	2	3	1				1			1		40
60 years old or more	1		2	1		1		1	2	2	1		1	1		2	1	1					1		18
total	15	9	14	7	4	7	4	9	8	5	7	3	5	5	9	7	3	5	2	2	2	1	3	1	137

Workers' number of workplace of fatal accidents in nonferrous metal making in 1999-2022

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	2022	total
9 workers or less				1			1	1	1			1													5
10-29	4	1	3		1	1		1	2					2	2			1	1			1	2		22
30-49	1		2	1		2	1	2	1				1	2		2	2	1							18
50-99	2	1	3	1		2		4		1	2		2		2	1	1			1	1				24
100-299	4	3	2	1	3	2		1	1	1	4	1	2	1	4	2		3	1					1	37
300 workers or more	4	4	4	3			2		3	3	1	1			1	2				1	1		1		31
total	15	9	14	7	4	7	4	9	8	5	7	3	5	5	9	7	3	5	2	2	2	1	3	1	137

Month of fatal accidents in nonferrous metal making in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	1		1						2						1		1	2	1						9

February	1	1	2					1	1	1					3	1	1						1	13	
March		1	1	1				2	1				1	1	1	1		1			1			12	
April		2	2	1				2		1			1	1	3	1								14	
May	3	3				2		1		1		2	1	2		1							1	17	
June				1			1	1		1	4	1				1			1					11	
July	4		1	1	1				1						1								1	10	
August	1	1	1	1	1	1	1				1		1	1				1			1		1	13	
September	1	1	1		1	3	1	1		1			1											11	
October	1		2		1	1									2		1			1				9	
November	2		3	1			1	1	3						1							1		13	
December	1			1							2									1				5	
total	15	9	14	7	4	7	4	9	8	5	7	3	5	5	9	7	3	5	2	2	2	1	3	1	137

Prefecture of fatal accidents in nonferrous metal making in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido																									
Aomori												1													1
Iwate																				1					1
Miyagi																									
Akita																			1						1

total	15	9	14	7	4	7	4	9	8	5	7	3	5	5	9	7	3	5	2	2	2	1	3	1	137
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Data sources: <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html> (MHLW, Japan)

Return to https://www.jisha.or.jp/english/statistics/2022e_industry.html