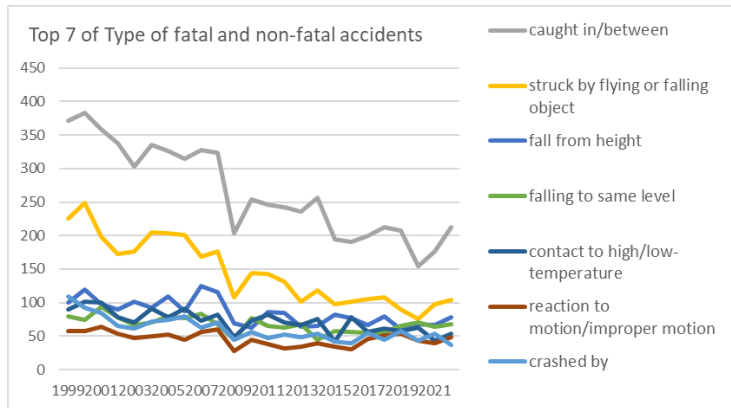
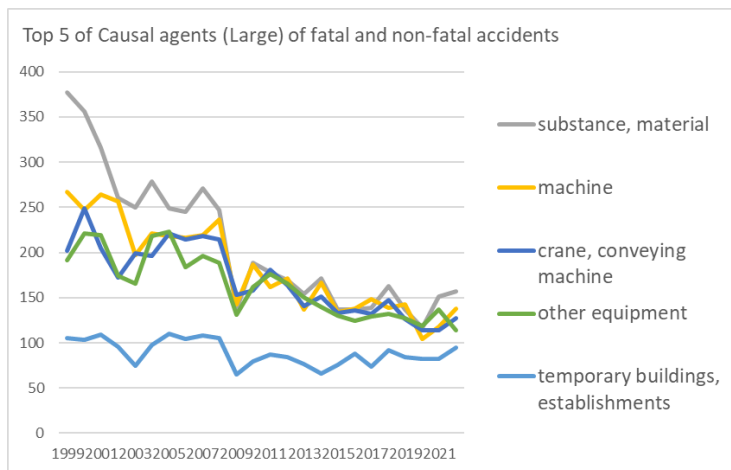


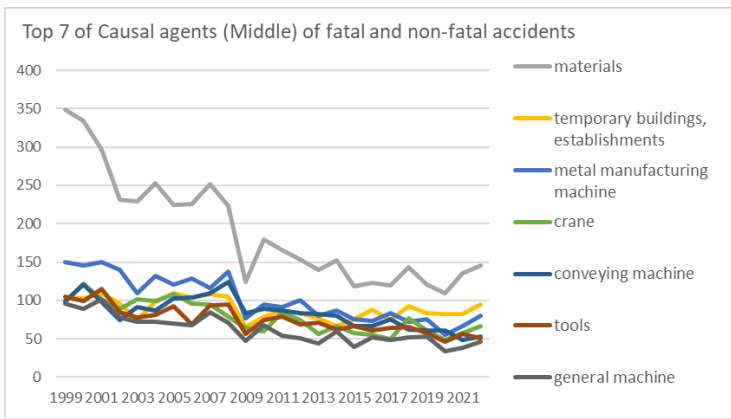
### Transition of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



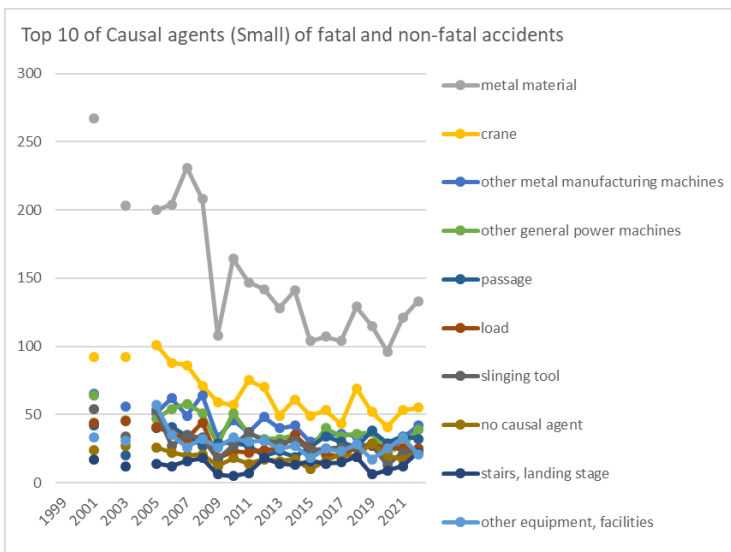
### Transition of Top 7 of Type of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



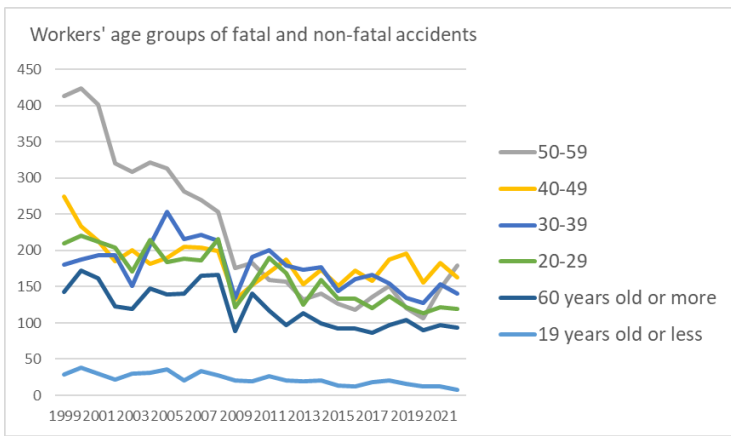
### Transition of Top 5 of Causal agents (Large) of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



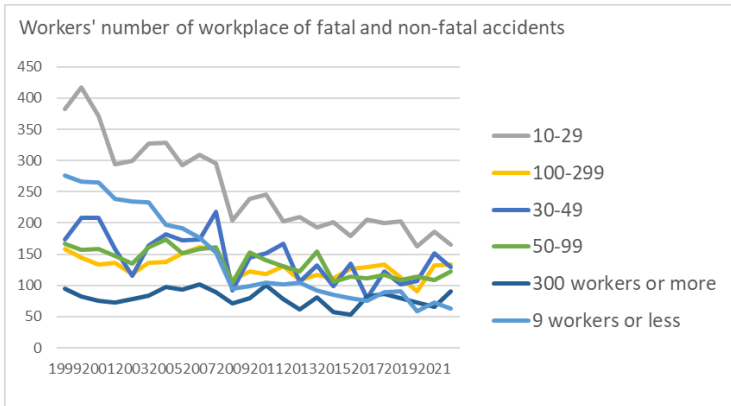
Transition of Top 7 of Causal agents (Middle) of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



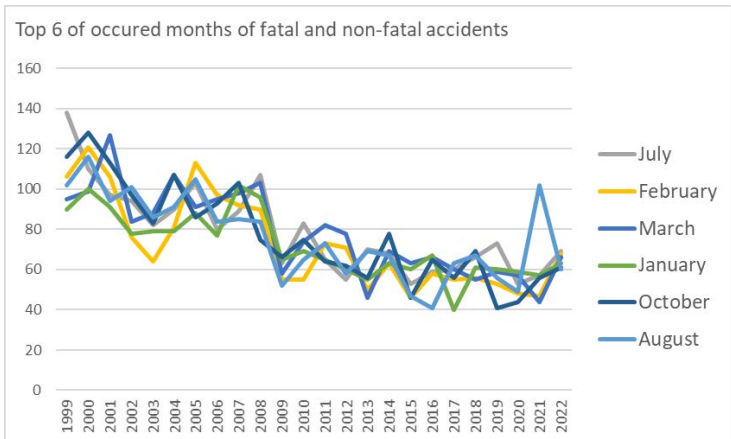
Transition of Top 10 of Causal agents (Small) of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



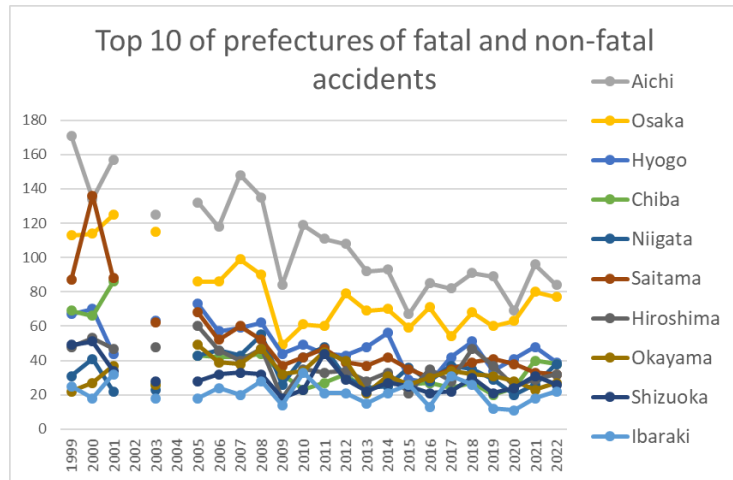
Transition of workers' age groups of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



Transition of workers' number of workplace of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



Transition of Top 6 of occurred months of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)



Transition of Top 10 of prefectures of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)

Transition of Type of fatal and non-fatal accidents in 0110 steel making in Japan (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	Type of accidents
caught in/between	371	383	358	338	303	335	326	315	327	324	204	254	246	242	236	257	195	191	200	213	207	155	176	213	6,369	caught in/between
struck by flying or falling object	226	249	198	172	176	205	204	201	168	176	108	144	143	131	102	118	98	102	105	108	90	76	97	104	3,501	struck by flying or falling object
fall from height	100	119	98	90	102	93	109	87	125	116	69	63	86	85	64	65	82	77	66	80	60	68	67	78	2,049	fall from height
falling to same level	80	74	94	78	66	71	80	77	83	68	44	77	65	63	68	44	57	56	55	56	65	70	64	68	1,623	falling to same level
contact to high/low-temperature	90	102	100	78	70	91	78	91	73	82	49	73	82	71	66	75	42	78	56	62	57	63	43	54	1,726	contact to high/low-temperature
reaction to motion/improper	58	58	64	53	47	50	52	44	56	60	28	44	38	31	34	40	34	30	46	51	54	43	40	48	1,103	reaction to motion/improper

motion																										motion
crashed by	109	92	84	65	62	72	74	79	63	71	45	56	47	52	49	54	42	39	55	44	58	43	54	37	1,446	crashed by
collapse	53	60	59	45	48	50	49	40	46	45	26	34	41	35	19	27	26	24	23	37	29	16	29	29	890	collapse
crash	51	51	52	37	36	49	47	40	55	44	23	27	34	31	25	26	30	26	29	40	26	24	29	29	861	crash
cut	77	62	74	60	46	52	54	39	55	55	53	38	47	40	31	35	30	32	32	27	25	23	36	27	1,050	cut
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	8	131	traffic accident (public road)
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	4	156	contact to harmful substance
others	2	3	6	7	2	5	3	5	1	4	4	1	7	3	5	3	2	4		8	4	7	62	4	152	others
unclassifiable	1	2	1				1	1	1				2			1	1	1		1	1	1		1	16	unclassifiable
explosion	11	6	1	2	3	4		8	8	9	4	5	1	5		11			2	3	5	6			94	explosion
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
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
injury to the sole of the foot	4	4	3	2	2	3	3	1	2	2	3	1	1	3	1	2	2	1	4	2					46	injury to the sole of the foot
burst	1	3		1		1		2		2	1	1	1	1					1	1		1			17	burst
traffic accident (others)		1	2		1	1	1	2				1		1				1	1						12	traffic accident (others)
drown					1							1	6												8	drown
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	704	21,367	total

Transition of Causal agents (Large) of fatal and non-fatal accidents in 0110 steel making in Japan (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	Causal (L)
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																											agents
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	157	4,986	substance, material	
machine	267	247	264	257	197	221	218	216	219	236	143	187	162	171	137	167	134	138	148	139	143	104	118	138	4,371	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	127	4,067	crane, conveying 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	114	3,918	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	95	2,144	temporary buildings, establishments	
others	33	25	31	28	38	26	34	29	25	25	16	20	25	25	20	24	14	24	26	27	35	26	78	28	682	others	
load	62	69	56	51	52	57	51	44	36	50	20	25	27	27	26	36	30	26	23	30	32	29	29	27	915	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	18	284	environment	
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	704	21,367	total	

Transition of Causal agents (Middle) of fatal and non-fatal accidents in 0110 steel making in Japan (1999-2022)

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	2022	total	Causal (M) agents
materials	349	334	297	231	229	253	224	226	252	223	124	179	166	154	140	152	119	123	120	143	121	110	135	146	4,550	materials
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	95	2,144	temporary buildings, establishments
metal manufacturing	150	145	150	140	109	132	121	129	116	138	77	95	91	100	80	87	76	73	83	72	76	55	67	80	2,442	metal manufacturing

machine																											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	66	1,866	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	53	2,007	conveying machine	
tools	105	99	115	85	78	81	93	69	94	95	56	74	79	69	71	62	67	61	64	65	58	46	56	51	1,793	tools	
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	46	1,489	general machine	
load	62	69	56	51	52	57	51	44	36	50	20	25	27	27	26	36	30	26	23	30	32	29	29	27	915	load	
no causal agent	13	15	24	23	27	11	26	22	20	21	12	18	14	17	16	17	10	16	21	19	29	20	17	22	450	no causal agent	
other equipments, facilities	30	37	33	28	31	43	57	35	26	32	26	33	30	31	25	27	18	25	23	28	17	25	33	21	714	other equipments, facilities	
natural environment	14	6	12	11	3	10	11	17	8	10	9	18	26	5	10	14	6	14	13	18	10	14	7	18	284	natural environment	
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	17	660	human power machine, tools	
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	14	482	kiln, caldron	
hazards, harmful substances	28	22	19	29	21	26	25	19	19	24	13	10	12	15	14	19	18	14	19	20	16	7	16	11	436	hazards, harmful substances	
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	9	187	welding equipment	
vehicle	5	6	5	9	7	10	10	14	14	11	6	9	9	7	3	5	10	15	6	8	4	5	8	8	194	vehicle	
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	6	137	construction machine	

																										machine	
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	4	201	power transmission mechanism	
other causal agent	19	9	6	5	10	14	7	7	5	3	4	2	8	6	3	6	3	6	5	7	4	6	61	3	209	other causal agent	
unclassifiable	1	1	1		1	1	1			1			3	2	1	1	1	2		1	2			3	23	unclassifiable	
woodworking machine	7	3	4	11	3	2	5	2	2	7	6	4	5	3	1	5	4	2	1	1		3	3	2	86	woodworking machine	
electric equipment	4	3	3	2	4	4	4	3	2	1	1	4	5		2	4	2	2		4		1	1	2	58	electric equipment	
pressure vessel		2	1			2	2	1	1	1			2	1	1				1	3					18	pressure vessel	
engine	1	3	2					3						1	1	1			1	1	2				16	engine	
chemical facilities					2		1							2								1			6	chemical facilities	
mobile silviculture machine																											mobile silviculture machine
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	704	21,367	total	

Transition of Causal agents (Small) of fatal and non-fatal accidents in 0110 steel making in Japan (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	Causal (S) agents
metal material			267		203		200	204	231	208	108	164	147	142	128	141	104	107	104	129	115	96	121	133	3,052	metal material
crane			92		92		101	88	86	71	59	57	75	70	49	61	49	53	43	69	52	41	53	55	1,316	crane
other metal manufacturing			65		56		51	62	49	64	33	46	37	48	40	42	30	34	36	34	37	21	33	42	860	other metal manufacturing





environment																									environment	
hand tool			22		16		24	22	25	18	12	11	16	20	13	11	15	11	12	7	12	10	16	10	303	hand tool
building, establishment			22		16		7	12	18	18	9	14	10	9	9	10	9	2	8	13	11	14	12	9	232	building, establishment
other powered crane			4		3		5	7	6	3	2	2	2	1	3	1	5	1	3	5	6	1	2	8	70	other powered crane
cars, bus, motorcycle			3		6		9	14	13	9	6	9	8	6	3	3	9	15	4	8	4	4	7	7	147	cars, bus, motorcycle
other powered conveying machines			5		11		4	14	12	13	8	7	6	9	9	6	5	3	8	5	5	4	5	7	146	other powered conveying machines
human power hauling equipment			8		7		6	12	12	6	5	6	10	8	12	9	7	3	4	9	8	8	13	6	159	human power hauling equipment
forging pressure hammer			7		7		11	5	9	11	8	9	6	6	4	3	3	4	3	3	3		4	6	112	forging pressure hammer
drill press, milling machine			10		6		7	8	6	5	3	7	7	5	9	3	8	3	2	2	5	4	2	6	108	drill press, milling machine
roll machine (except printingroll machine)			18		14		9	12	19	13	11	9	11	10	8	10	7	7	7	8	10	5	6	5	199	roll machine (except printingroll machine)
power press			14		4		12	6	2	8	3	3	6	7	3	5	3	6	10	9	3	7	6	5	122	power press
gas welding equipment			6		2		8	4	10	4	9	5	5	10	3	4	2	3	2	2	4	2	6	5	96	gas welding equipment
lumber, bamboo			4		8		6	3	3	4	4	3	3	1	3	3	5	7	3	3	2	6	4	5	80	lumber, bamboo
other materials			18		12		9	13	13	6	9	10	14	7	7	5	4	7	8	9	4	8	7	4	174	other materials
power transmission mechanism			4		6		13	8	12	12	4	12	9	10	9	8	10	5	10	8	6	4	7	4	161	power transmission mechanism







industrial robot			1		1									1									3	industrial robot	
boiler								1					1											3	boiler
band sawing machine										1			1											2	band sawing machine
foundation work machine													1											2	foundation work machine
pressure vessel														1	1									2	pressure vessel
radiation																							2	2	radiation
hardening machine											1													1	hardening machine
printing machine			1																					1	printing machine
gondola															1									1	gondola
straddle carrier																1								1	straddle carrier
timbering																								1	timbering
chamfering machine, router, woodworking milling machine																									chamfering machine, router, woodworking milling machine
food manufacturing machine																									food manufacturing machine
felling machine																									felling machine
mobile logging machine																									mobile logging machine
skyline yarding machine																									skyline yarding machine
other mobile silviculture machine																									other mobile silviculture machine

derrick crane																											derrick crane	
cargo lifting appliance																												cargo lifting appliance
lumberyard equipment, logging cableway																												lumberyard equipment, logging cableway
simple skyline yarding equipment																												simple skyline yarding equipment
rough terrain hauler																												rough terrain hauler
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	704	21,367	total		

Transition of workers' age groups of fatal and non-fatal accidents in 0110 steel making in Japan (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	Age
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	179	5,344	50-59
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	163	4,421	40-49
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	141	4,258	30-39
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	119	3,925	20-29
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	94	2,883	60 years old or more
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	8	536	19 years old or less
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	704	21,367	total

Transition of workers' number of workplace of fatal and non-fatal accidents in 0110 steel making in Japan (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	Workers scale
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	165	6,112	10-29

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	134	3,113	100-299
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	129	3,489	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	122	3,278	50-99
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	91	1,932	300 workers or more
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	63	3,443	9 workers or less
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	704	21,367	total

Transition of occurred months of fatal and non-fatal accidents in 0110 steel making in Japan (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	Month
July	138	110	97	94	82	90	103	80	89	107	63	83	65	55	70	68	53	59	60	66	73	53	57	69	1,884	July
February	106	121	106	76	64	81	113	97	92	90	55	55	73	71	50	63	46	58	55	56	53	48	47	68	1,744	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	66	1,864	March
January	90	100	91	78	79	79	88	77	102	96	65	69	65	60	55	63	60	67	40	61	60	59	57	63	1,724	January
October	116	128	113	97	83	107	86	93	103	75	66	75	64	62	56	78	46	65	56	69	41	44	56	61	1,840	October
August	102	116	94	101	86	91	105	84	85	84	52	65	73	58	69	67	47	41	63	67	56	49	102	60	1,817	August
November	113	102	77	95	82	82	94	85	85	82	39	71	67	73	49	57	50	69	48	49	49	53	58	59	1,688	November
April	104	80	119	84	95	98	85	84	78	99	50	57	67	62	69	48	58	65	57	66	73	70	64	55	1,787	April
September	104	104	101	91	98	95	110	95	89	88	61	77	101	70	57	78	68	58	68	60	56	52	65	54	1,900	September
June	103	110	120	79	79	91	92	88	90	91	52	91	75	87	65	54	65	37	54	67	63	46	59	54	1,812	June
May	81	116	96	78	67	102	85	91	96	94	52	55	74	72	62	67	61	56	63	71	63	36	58	52	1,748	May
December	99	90	71	92	77	82	65	84	74	67	61	66	56	63	67	57	43	46	60	61	48	38	49	43	1,559	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	704	21,367	total

Transition of prefectures of fatal and non-fatal accidents in 0110 steel making in Japan (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	Prefecture
Aichi	171	134	157		125		132	118	148	135	84	119	111	108	92	93	67	85	82	91	89	69	96	84	2,390	Aichi
Osaka	113	114	125		115		86	86	99	90	49	61	60	79	69	70	59	71	54	68	60	63	80	77	1,748	Osaka
Hyogo	67	70	44		63		73	57	59	62	44	49	44	43	48	56	29	27	42	51	34	41	48	39	1,090	Hyogo
Chiba	69	66	86		26		43	42	42	44	32	23	27	32	22	28	26	27	24	27	20	24	40	38	808	Chiba
Niigata	31	41	22		23		43	46	43	55	26	42	48	30	24	25	36	28	37	35	29	20	26	38	748	Niigata
Saitama	87	136	88		62		68	52	60	52	37	42	47	39	37	42	35	30	35	39	41	38	33	32	1,132	Saitama
Hiroshima	48	53	47		48		60	46	40	47	18	35	33	34	28	33	21	35	28	47	37	25	29	32	824	Hiroshima
Okayama	22	27	37		26		49	39	38	47	32	34	45	40	21	31	26	30	34	32	31	28	23	27	719	Okayama
Shizuoka	49	51	34		28		28	32	33	32	18	23	44	29	22	27	25	21	22	30	21	24	31	26	650	Shizuoka
Ibaraki	25	18	32		18		18	24	20	28	14	33	21	21	15	21	26	13	31	26	12	11	18	22	467	Ibaraki
Fukuoka	56	57	48		37		43	31	36	36	31	30	34	30	25	19	23	36	21	17	30	20	23	20	703	Fukuoka
Gifu	14	24	16		22		30	24	32	21	17	16	20	15	19	20	12	17	15	14	17	12	10	18	405	Gifu
Kanagawa	41	40	33		30		32	44	32	28	15	23	20	21	14	20	17	15	35	24	21	13	21	17	556	Kanagawa
Mie	37	41	43		39		27	27	29	24	18	23	22	28	22	20	20	15	18	19	16	14	21	17	540	Mie
Hokkaido	19	17	33		22		20	25	23	18	15	26	26	23	13	21	24	22	24	27	18	18	17	17	468	Hokkaido
Fukushima	18	16	15		17		20	23	13	12	5	10	8	11	6	9	14	13	9	9	9	11	13	15	276	Fukushima
Shimane	18	19	24		14		11	33	17	18	9	18	18	14	11	15	4	12	16	14	8	14	11	13	331	Shimane
Ishikawa	13	14	12		7		13	16	14	14	8	11	24	15	11	15	12	10	6	17	10	6	13	12	273	Ishikawa
Saga	5	11	4		5		8	4	9	5	3	1	1	3	5	3	3	2	4	2	4	7	2	12	103	Saga
Gunma	32	20	18		14		23	25	16	23	18	16	14	18	22	16	13	15	11	18	20	6	12	10	380	Gunma
Toyama	29	19	27		12		11	29	16	27	10	20	10	5	17	11	11	8	5	11	11	13	9	10	321	Toyama
Yamagata	22	25	20		14		23	20	16	15	13	13	18	14	15	10	8	15	5	9	12	11	6	10	314	Yamagata
Kumamoto	6	8	14		8		13	8	12	8	7	8	5	8	7	5	12	5	5	3	2	4	3	10	161	Kumamoto



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	704	21,367	total
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Data Source : <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html> MHLW, Jaan

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