

contact to harmful substance	5	7	5	10	6	7	5	6	5	5	3	7	1	1	3	4	3	3	7	5	7	1	6	112	harmful substance
electric shock	1	1	3	2	1			2							2		1	2	2	1				18	electric shock
explosion				1		3													1	1				6	explosion
burst	1		1	2			1	1	2															8	burst
fire			1	1	2				1			1				1		1						8	fire
traffic accident (public road)	7	7	13	11	4	6	5	6	11	6	4	11	5	7	8	4	4	7	4	2	5	10	3	150	traffic accident (public road)
traffic accident (others)	1	1	1	1					1			1		1	1	1				2		1		12	traffic accident (others)
reaction to motion/improper motion	70	63	54	58	53	74	62	68	75	61	46	56	57	67	61	54	66	50	47	65	63	62	79	1,411	reaction to motion/improper motion
others	3	2	2	1		3	1	1	4	1	3	1	3	2	1		2	1	2	3		6	41	83	others
unclassifiable	4	1		2	1	1	1	1		3	1	1		1		1	1		1	1				21	unclassifiable
total	1,324	1,340	1,283	1,252	1,219	1,117	1,060	1,062	1,048	1,003	800	856	790	831	776	763	755	747	721	766	745	709	802	21,769	total

Causal agents (large) of fatal and non-fatal accidents in pulp/paper processing products 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	721	709	643	651	641	578	520	528	539	491	403	407	376	398	384	379	345	342	335	335	318	294	330	10,667	machine
crane, conveying machine	174	194	195	176	187	151	148	149	156	146	132	122	104	107	105	102	98	122	95	104	119	114	106	3,106	crane, conveying machine

																									machine
other equipment	116	124	137	119	121	115	111	116	108	119	79	100	90	101	90	79	80	88	90	87	95	94	87	2,346	other equipment
temporary buildings, establishments	147	140	140	147	127	121	122	110	96	118	87	100	103	103	79	109	108	107	100	109	108	104	108	2,593	temporary buildings, establishments
substance, material	56	74	54	65	63	62	57	67	57	44	34	50	36	36	37	23	40	31	38	38	33	23	47	1,065	substance, material
load	65	60	74	62	52	59	62	50	57	47	33	53	45	51	43	35	42	34	38	43	40	38	40	1,123	load
environment	7	2	12	5	3	6	6	9	5	4	3	11	10	8	9	12	10	5	7	13	11	13	9	180	environment
others	38	37	28	27	25	25	34	33	30	34	29	13	26	27	29	24	32	18	18	37	21	29	75	689	others
total	1,324	1,340	1,283	1,252	1,219	1,117	1,060	1,062	1,048	1,003	800	856	790	831	776	763	755	747	721	766	745	709	802	21,769	total

Causal agents (middle) of fatal and non-fatal accidents in pulp/paper processing products 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							1			2				1	1		2				1	9	engine
power transmission mechanism	26	23	22	27	22	27	26	21	14	18	12	4	21	17	13	13	16	9	11	15	12	12	15	396	power transmission mechanism
woodworking machine	7	5	8	7	8	4	6	6	7	3	3	3	6	7	5	4	3	3	3	4	3	5	6	116	woodworking machine
construction machine	2	1	2			1	1	1	1		1	3		2		1						2		18	construction machine

metal manufacturing machine	44	30	29	18	22	11	14	20	13	10	10	17	17	11	9	12	7	13	9	7	12	8	8	351	metal manufacturing machine	
general machine	642	649	582	599	589	535	473	480	503	460	377	378	332	361	357	348	318	317	310	309	291	267	300	9,777	general machine	
mobile silviculture machine																										mobile silviculture machine
crane	7	12	20	17	16	10	10	12	8	7	8	5	4	9	6	3	4	4	5	6	6	5	3	187	crane	
conveying machine	161	174	161	148	167	134	137	129	138	132	121	105	95	92	90	94	86	109	88	94	111	99	100	2,765	conveying machine	
vehicle	6	8	14	11	4	7	1	8	10	7	3	12	5	6	9	5	8	9	2	4	2	10	3	154	vehicle	
pressure vessel		2	2		3	1	1		5	1		1	1	1				1	1	1			2	23	pressure vessel	
chemical facilities	2	1		1		1	1							1					3	1		1		12	chemical facilities	
welding equipment															1									1	welding equipment	
kiln, caldron	2	1	1	1		1	1	1	1	1	1			1					1		3		16	kiln, caldron		
electric equipment		1	3	2	3	1	3	1	1			1	1		6	1	1	1		2	1		2	31	electric equipment	
human power machine, tools	29	36	45	37	43	46	37	34	34	31	24	32	25	36	24	23	25	28	20	17	27	26	18	697	human power machine, tools	
tools	66	57	64	60	54	42	50	66	49	69	45	48	48	41	50	39	43	49	47	46	48	55	50	1,186	tools	
other equipments,	17	26	22	18	18	23	18	14	18	17	9	18	15	21	9	16	11	9	19	19	19	9	15	380	other equipments,	

circular sawing machine			6	5	5	5	6	2	2	3	3	5	3	4	3	2	2	3	1	5	4	69	circular sawing machine
band sawing machine				1							2											3	band sawing machine
wood planer machine																					1	1	wood planer machine
hollow chisel mortiser, wood borer																							hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine			1																			1	chamfering machine, router, woodworking milling machine
chain saw																							chain saw
other woodworking machines			1	2	1	1	1	1	1		1	2	2			1	1	1	2		1	19	other woodworking machines
leveling, transporting or loading machine			2				1		1	2		2		1						2		11	leveling, transporting or loading machine
excavating machine						1	1				1											3	excavating machine
foundation work machine																							foundation work machine
hardening machine																							hardening machine
demolition machine																							demolition machine
vehicle for high lift																							vehicle for high lift

work																									work
other construction machines																									other construction machines
lathe			1		1		1		1		1	1		1				2	1					10	lathe
drill press, milling machine						1	2		1		2	1												7	drill press, milling machine
grinding machine, buffing machine			2		2		1	1		1	1	1		1	2					1	2			15	grinding machine, buffing machine
power press			8		3		1	3	4	1	2	2	5	2	3	4	1	3	1		2	4	2	51	power press
forging pressure hammer			1																					1	forging pressure hammer
shearing machine			10		11		5	8	6	4	4	7	8	6	4	5	6	5	5	4	5	4	5	112	shearing machine
other metal manufacturing machines			7		5		5	6	2	3	2	4	3	1		3		3	2	2	3		1	52	other metal manufacturing machines
centrifugal machine							2			2			1											5	centrifugal machine
mixer, grinder			8		6		1	4	1	4	2		1	4	5	3	1	1	2	2	3	2	4	54	mixer, grinder
roll machine (except printingroll machine)			116		118		132	98	100	96	79	88	56	83	72	83	70	74	72	56	60	58	61	1,572	roll machine (except printingroll machine)
injection molding machine			2		3		2	1	3		1	1				1				1	1			16	injection molding machine
food manufacturing machine			2					1		3														6	food manufacturing machine
printing machine			67		76		59	74	73	61	48	52	48	65	60	52	41	40	52	42	38	26	40	1,014	printing machine

truck			26		25		26	26	23	25	17	19	13	20	21	13	23	29	25	32	28	27	28	446	truck	
forklift			68		83		61	55	70	61	53	42	46	44	34	49	43	41	35	31	52	40	45	953	forklift	
railway equipment							1		2	1		1							1		1			7	railway equipment	
conveyor			57		52		40	43	37	43	40	36	29	25	35	29	15	35	25	23	26	25	25	640	conveyor	
loader			3		2		1				1	2	1			1	1					1		13	loader	
straddle carrier																										straddle carrier
rough terrain hauler																										rough terrain hauler
other powered conveying machines			7		5		9	4	8	1	9	6	5	3		2	4	4	3	7	5	5	2	89	other powered conveying machines	
cars, bus, motorcycle			14		4		1	8	10	6	3	12	5	6	9	4	8	9	2	4	2	9	3	119	cars, bus, motorcycle	
railway vehicle																										railway vehicle
other vehicles										1						1						1		3	other vehicles	
boiler									4			1							1	1			1	8	boiler	
pressure vessel			2		2		1			1								1						7	pressure vessel	
other pressure vessels					1				1				1	1									1	5	other pressure vessels	
chemical facilities							1						1						3	1		1		7	chemical facilities	
gas welding equipment																										gas welding equipment
arc welding equipment																										arc welding equipment
other welding equipment															1									1	other welding equipment	

roof, beam, haze, crossbeam, principal rafter			3		1		2	1	2	1	3	1			1	1		2	2	2	1	2	3	28	roof, beam, haze, crossbeam, principal rafter
working platform, boot board			33		26		28	29	19	17	15	21	12	18	17	15	32	19	15	11	16	12	16	371	working platform, boot board
passage			44		49		42	27	26	56	36	39	36	46	32	32	33	42	42	58	46	41	43	770	passage
building, establishment			13		12		16	18	13	10	3	9	12	11	10	11	11	9	10	11	9	6	12	206	building, establishment
other temporary buildings, establishments			13		9		7	7	11	8	5	4	16	10	5	17	6	16	11	9	7	13	8	182	other temporary buildings, establishments
explosive substance			1																					1	explosive substance
inflammable substance			2		1			1				1				3	1							10	inflammable substance
inflammable gas													1					1				1	1	4	inflammable gas
harmful substance			5		2		2	5	3	1		6	1	1	3	3	2	3	6	5			4	52	harmful substance
radiation																									radiation
other hazards, harmful substances			5		6		5	1	3	4	3	3	3			1	1	2	3		7	2	2	51	other hazards, harmful substances
metal material			13		16		12	16	17	8	9	20	9	10	8	4	10	8	8	8	5	6	7	194	metal material
lumber, bamboo			8		6		4	4	6	4		1	3	4	3	1	2	6	5	4	2	2	3	68	lumber, bamboo
stone, sand, substance							2										1							6	stone, sand, substance
other materials			20		32		32	40	27	26	22	19	19	20	20	13	24	11	16	20	19	12	30	422	other materials
load			69		47		62	45	54	44	33	47	41	49	41	33	42	33	36	40	40	38	39	833	load

machine/equipment as load			5		5				5	3	3		6	4	2	2	2		1	2	3			1	44	machine/equipment as load
natural ground, rock			1		1			1								1			1						5	natural ground, rock
standing tree													1			1					1				3	standing tree
water			1										3			1	2			1		2			10	water
abnormal environment																				1					1	abnormal environment
high/cold temperature environment			2		1			3	4	1	2	8	2	4	4	3	5	3	4	9	6	10	6		77	high/cold temperature environment
other environments			8		1		5	6	1	3	1	3	4	4	4	7	3	1	3	3	3	1	3		64	other environments
other causal agent			7		4		6	8	4	7	5	2	4	5	3	3			3	5	4	5	44		119	other causal agent
no causal agent			20		20		27	24	26	24	23	9	22	20	24	20	29	18	15	30	17	24	31		423	no causal agent
unclassifiable			1		1		1	1		3	1	2		2	2	1	3			2					20	unclassifiable
total			1,283		1,219		1,060	1,062	1,048	1,003	800	856	790	831	776	763	755	747	721	766	745	709	802		16,736	total

Workers age of fatal and non-fatal accidents in pulp/paper processing products 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	46	54	49	47	40	33	43	24	31	21	22	25	25	19	21	29	15	21	26	19	25	14	24	673	19 years old or less
20-29	303	320	300	254	267	239	202	211	203	185	143	151	134	140	128	135	120	122	125	114	118	97	130	4,141	20-29
30-39	217	264	229	264	265	247	257	275	256	242	181	197	191	199	191	173	165	164	127	174	153	121	147	4,699	30-39

April	109	109	111	98	98	91	59	86	78	82	66	73	73	79	51	71	71	53	70	63	48	64	78	1,781	April
May	114	108	106	99	91	87	88	80	88	83	65	63	64	64	61	56	59	53	48	51	69	65	53	1,715	May
June	103	121	112	98	115	97	95	89	101	84	59	58	85	67	69	64	64	46	65	67	54	51	61	1,825	June
July	111	96	119	123	106	88	89	96	96	89	75	61	58	81	46	75	69	68	64	71	62	66	56	1,865	July
August	101	111	97	105	89	88	109	99	86	59	64	81	64	68	63	64	62	66	57	73	62	61	89	1,818	August
September	129	114	120	113	106	92	78	86	87	75	61	74	75	57	61	52	69	58	56	44	74	51	70	1,802	September
October	116	118	95	102	95	102	103	71	92	106	77	74	71	62	80	57	67	71	65	74	74	57	78	1,907	October
November	100	103	84	112	92	82	85	106	71	87	55	71	58	65	65	52	66	58	66	60	59	54	63	1,714	November
December	99	110	96	104	91	84	83	74	72	72	70	65	56	70	79	74	62	62	61	65	58	69	69	1,745	December
total	1,324	1,340	1,283	1,252	1,219	1,117	1,060	1,062	1,048	1,003	800	856	790	831	776	763	755	747	721	766	745	709	802	21,769	total

Prefecture of fatal and non-fatal accidents in pulp/paper processing products 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	34	31	29		15		20	22	23	18	21	13	15	20	21	10	22	20	14	14	18	20	13	413	Hokkaido
Aomori	4	2	6		4		1	3	4	7	1	2	9	3	4	7	1	4	6	5	2	4	3	82	Aomori
Iwate	4	9	5		9		3	6	7	7	2	11	5	6	8	9	3	2	5	4	4	4	6	119	Iwate
Miyagi	20	18	11		15		6	14	10	12	6	7	9	5	7	8	5	4	6	5	5	5	8	186	Miyagi
Akita	4	3	5		6		1	2	2			2	1	3	1		5	4		4	3	3	3	52	Akita
Yamagata	15	7	13		5		4	4	8	2	5	6	4	4	7	5	2	5	2	4	6	3	7	118	Yamagata
Fukushima	13	23	16		12		9	18	17	13	7	15	11	17	10	9	13	15	9	7	11	6	11	262	Fukushima
Ibaraki	31	43	25		25		25	24	31	33	24	21	23	22	19	20	25	19	14	28	18	16	30	516	Ibaraki
Tochigi	24	22	21		25		21	21	15	26	21	17	17	20	19	17	20	16	18	19	13	19	23	414	Tochigi
Gunma	22	17	12		17		20	18	13	9	13	14	13	13	10	13	14	13	7	15	12	11	12	288	Gunma

Saitama	74	109	84		95		80	85	90	83	57	78	49	76	71	51	54	77	54	56	75	59	76	1,533	Saitama
Chiba	40	36	42		19		21	27	21	24	23	20	22	17	19	18	13	15	16	13	12	12	35	465	Chiba
Tokyo	42	43	40		45		32	33	31	32	25	31	27	20	22	17	19	14	20	18	13	14	26	564	Tokyo
Kanagawa	48	42	33		54		48	38	28	38	17	28	22	40	25	23	20	32	31	16	17	17	21	638	Kanagawa
Niigata	17	18	17		17		9	14	7	16	13	14	11	12	11	11	15	10	17	12	12	14	19	286	Niigata
Toyama	17	13	12		19		9	18	18	9	12	14	14	12	12	5	14	8	11	4	10	8	14	253	Toyama
Ishikawa	6	12	11		10		7	13	3	7	6	7	7	4	5	5	4	5	2	11	8	6	5	144	Ishikawa
Fukui	16	9	23		11		12	16	8	6	10	11	7	6	12	9	7	10	3	9	7	5	3	200	Fukui
Yamanashi	20	11	17		8		11	17	5	5	1	3	5	8	4	8	5	6	4	3	2	4	6	153	Yamanashi
Nagano	11	9	15		11		9	14	8	9	12	5	6	6	12	9	9	8	3	8	8	10	5	187	Nagano
Gifu	61	61	52		55		44	33	38	45	30	34	27	36	25	28	32	31	32	35	28	36	32	795	Gifu
Shizuoka	174	162	170		156		137	132	109	137	101	105	71	91	74	92	102	88	85	86	95	93	90	2,350	Shizuoka
Aichi	92	82	73		77		59	55	68	54	48	69	61	58	38	47	56	50	63	60	53	40	59	1,262	Aichi
Mie	14	15	17		20		20	18	16	19	9	13	7	10	14	8	7	5	9	10	18	6	8	263	Mie
Shiga	9	18	19		25		16	26	23	17	20	17	13	14	13	17	11	10	9	11	12	14	15	329	Shiga
Kyoto	16	30	29		25		18	16	28	20	17	12	23	20	19	18	10	12	21	15	15	8	17	389	Kyoto
Osaka	117	111	141		100		103	83	97	84	71	63	76	73	65	61	62	58	59	61	45	49	69	1,648	Osaka
Hyogo	58	57	44		54		43	44	48	38	33	31	37	38	31	42	37	33	26	41	44	31	31	841	Hyogo
Nara	8	9	13		16		6	16	17	22	13	15	9	9	10	7	16	13	11	11	19	11	19	270	Nara
Wakayama	5	8	4		7		5	8	4	5	10	2	3	4	4	6	5	4	6	9	2	7	4	112	Wakayama
Tottori	8	7	5		4		4	2	6	5	6	3	2	4	5	5	3	3	3	6	7	11	6	105	Tottori
Shimane	8	6	3		2		2	2	3	6		1	1	1	1	4	2		2	3	1	3	1	52	Shimane
Okayama	13	18	12		23		19	12	19	14	11	18	14	20	13	17	7	12	10	10	11	14	8	295	Okayama

Hiroshima	18	20	28		12		23	13	18	12	22	10	10	11	20	14	11	8	8	17	12	7	10	304	Hiroshima
Yamaguchi	13	12	7		12		10	10	7	6	4	7	6	7	2	6	3	2	3	8	5	3	7	140	Yamaguchi
Tokushima	12	26	15		14		7	6	13	9	5	7	7	8	6	6	6	5	9	5	9	8	5	188	Tokushima
Kagawa	28	37	29		38		38	23	38	22	17	18	26	18	23	23	16	10	19	14	16	18	19	490	Kagawa
Ehime	86	77	83		72		77	68	68	64	56	46	59	49	58	59	48	50	48	48	51	50	34	1,251	Ehime
Kochi	47	39	35		33		23	22	24	17	15	19	17	12	10	15	12	28	17	14	5	16	9	429	Kochi
Fukuoka	28	32	24		25		35	23	26	24	16	13	22	16	20	14	14	18	15	23	22	15	14	439	Fukuoka
Saga	17	8	6		5		4	12	3	13	5	12	9	6	7	5	6	7	7	5	5	15	6	163	Saga
Nagasaki	6	6	5		2		1	4	1	1		4	1	1	2	2	1	2	2	1	2		2	46	Nagasaki
Kumamoto	9	6	10		8		7	12	12	4	4	5	2	4	3	5	7	4	6	7	6	6	4	131	Kumamoto
Oita	5	5	7		4		3	6	5	1	1	4	4	2	3	3	5	1	4	5	2	2	3	75	Oita
Miyazaki	2	5	6		2		4	2	5	4	5	4	4	2	4	2	3	1	2	1	1	2	2	63	Miyazaki
Kagoshima	7	4	7		3		3	5	3	4	4	1	1	2	2	2	2	3	2	2	3	2		62	Kagoshima
Okinawa	1	2	2		3		1	2			1	4	1	1	5	1	1	2	1	3		2	2	35	Okinawa
total	1,324	1,340	1,283		1,219		1,060	1,062	1,048	1,003	800	856	790	831	776	763	755	747	721	766	745	709	802	19,400	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 pulp/paper processing products in Japan in 1999-2021

Type of fatal accidents in pulp/paper processing products 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		2	1	3	1	2		2		2	3	1	2	1	1	1		2		2		3	31	fall from height	
falling to same level													2	1	1	1	1								6	falling to same level
crash																										crash
struck by flying or falling object					2							1						1						4	struck by flying or falling object	
collapse		3											1					2		1				7	collapse	
crashed by			2	1		1	2		1		1				1			1			1			11	crashed by	
caught in/between	7	5	7	9	5	5	3	3	3	9	4	5	3	5	3	4		2	1	2	2	6	3	96	caught in/between	
cut																										cut
injury to the sole of the foot																										injury to the sole of the foot
drown								1						3			1				1			6	drown	
contact to high/low-temperature	1									1											1	1		4	contact to high/low-temperature	
contact to harmful substance		1					1												1	3				6	contact to harmful substance	

electric shock		1													1				1						3	electric shock
explosion						1																			1	explosion
burst	1																								1	burst
fire																										fire
traffic accident (public road)	1	1	2					2													1	1			8	traffic accident (public road)
traffic accident (others)																										traffic accident (others)
reaction to motion/improper motion																										reaction to motion/improper motion
others										1							1								2	others
unclassifiable																										unclassifiable
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total	

Causal agents (large) of fatal accidents in pulp/paper processing products 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	4	4	9	5	5	4	4	2	7	3	3	1	4	3	3		2	2	1	2	3	2	76	machine
crane, conveying machine	5	3	7	1	2	2	2	2	3	2	2	2	3	3	2	3	1	1	1	1	2	3	3	56	crane, conveying machine
other equipment	1		1	1								3	1		1			1			1			10	other equipment

temporary buildings, establishments	2	1			2		1		1		2	1	1	1			1		1		2	1	1	18	temporary buildings, establishments
substance, material		1	1				1											1	1	3				8	substance, material
load		2			1	1							1		1			1		1				8	load
environment	1								1				3				1				1	1		8	environment
others										1							1							2	others
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total

Causal agents (middle) of fatal accidents in pulp/paper processing products 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				1									5	power transmission mechanism
woodworking machine																										woodworking machine
construction machine																										construction machine
metal manufacturing machine																										metal manufacturing machine

general machine	3	3	3	8	5	5	4	4	2	7	3	2	1	4	3	2		2	2	1	2	3	2	71	general machine
mobile silviculture machine																									mobile silviculture machine
crane		1		1	1		1							2		1			1		1			9	crane
conveying machine	5	1	5		1	2	1		3	2	2	2	3	1	2	2	1	1		1	1	2	3	41	conveying machine
vehicle		1	2					2														1		6	vehicle
pressure vessel												1												1	pressure vessel
chemical facilities																									chemical facilities
welding equipment																									welding equipment
kiln, caldron																									kiln, caldron
electric equipment															1									1	electric equipment
human power machine, tools																									human power machine, tools
tools			1	1									1					1						4	tools
other equipments, facilities	1											2									1			4	other equipments, facilities
temporary buildings,	2	1			2		1		1		2	1	1	1			1		1		2	1	1	18	temporary buildings,

establishments																										establishments
hazards, harmful substances		1	1				1												1	3					7	hazards, harmful substances
materials																		1							1	materials
load		2			1	1						1	1				1		1						8	load
natural environment	1								1				3				1					1	1		8	natural environment
other causal agent																										other causal agent
no causal agent										1								1							2	no causal agent
unclassifiable																										unclassifiable
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total	

Causal agents (small) of fatal accidents in pulp/paper processing products 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				1									5	power transmission mechanism
circular sawing machine																										circular sawing machine
band sawing machine																										band sawing machine

																							machine
wood planer machine																							wood planer machine
hollow chisel mortiser, wood borer																							hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine																							chamfering machine, router, woodworking milling machine
chain saw																							chain saw
other woodworking machines																							other woodworking machines
leveling, transporting or loading machine																							leveling, transporting or loading machine
excavating machine																							excavating machine
foundation work machine																							foundation work machine
hardening machine																							hardening machine
demolition machine																							demolition machine
vehicle for high lift work																							vehicle for high lift work
other construction machines																							other construction machines

lathe																								lathe	
drill press, milling machine																								drill press, milling machine	
grinding machine, buffing machine																								grinding machine, buffing machine	
power press																								power press	
forging pressure hammer																								forging pressure hammer	
shearing machine																								shearing machine	
other metal manufacturing machines																								other metal manufacturing machines	
centrifugal machine																								centrifugal machine	
mixer, grinder				1		1		1												1			4	mixer, grinder	
roll machine (except printingroll machine)		2	1	1	1	1	2			6			3	1	1		1				1	1	22	roll machine (except printingroll machine)	
injection molding machine																								injection molding machine	
food manufacturing machine																								food manufacturing machine	
printing machine					1																		1	printing machine	
industrial robot																								industrial robot	
other general power machines	3	1	2	6	3	3	2	3	2	1	3	2	1	1	2	1		1	2	1	1	2	1	44	other general power machines

																									rock	
standing tree																								standing tree		
water												3				1									4	water
abnormal environment																									abnormal environment	
high/cold temperature environment	1									1												1	1		4	high/cold temperature environment
other environments																									other environments	
other causal agent																									other causal agent	
no causal agent										1								1							2	no causal agent
unclassifiable																									unclassifiable	
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total	

Workers age of fatal accidents in pulp/paper processing products 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		1																						1	19 years old or less	
20-29	2		1	5	1		1	1	1	3	1	2		2		3	1		1	2			1		28	20-29
30-39	1	2	2	1	3	2	2	1	2	2		2	1	2	2	1		1						27	30-39	
40-49	4	3	4	2		1	4	3	3	1		2	2	2	1	1	1	2	3	1	4	1	2	47	40-49	
50-59	4	4	5	2	3	3		1		3	4	1	3			1		1	1	2	1	5	2	46	50-59	
60 years old or more	1	1	1	1	3	2	1		1	1	2	2	4	2	4		2	2		1	3	1	2	37	60 years old or more	
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total	

Workers' number of workplace of fatal accidents in pulp/paper processing products 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		1	2		1	1	1	1	1						2	2			1				2	15	9 workers or less
10-29	3	1	2	4	4	3	2	1	3	1		1	5	2		1	1	1	1	1	2		1	40	10-29
30-49	2	4	4		3		2	4	1	1	4	1	1	1	1	1			1			1	1	33	30-49
50-99	2	1	2	4		1	2			3	1	2	1	2	2		1	2		3	2	2	1	34	50-99
100-299	2	1	3	2	1	3	1		1	3		3	2	3	1	2	1	3	1	2	4	4	1	44	100-299
300 workers or more	3	3		1	1				1	2	2	2	1		1		1		1			1		20	300 workers or more
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total

Month of fatal accidents in pulp/paper processing products 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	1	1	1	1		1	2		2		2			1	1	1	2						18	January
February	1				1	1	1	1	1	2	1				1		1		1			2		15	February
March	1	2	4		1	1			1	2	1	2	5	1		2		1						24	March
April				1			1			1			1			2		2		2				10	April
May	1		1	2	1	1		1			1	1	2											11	May
June	1	1	1			1	1							1	2		1			3			1	13	June
July	2	2			2				2				1	3					2		1	1		16	July
August	1		1			1			2	1					1				1		1	2	1	12	August
September	1	1	2	1							1	1	1		1		1				2		1	13	September

October	2	1	1	2	1	2	1				1				1	1		1	1		2	2		19	October	
November		3	1	1	2		1	1			1	3										1	1		15	November
December			1	3	1	1	2	1	1	2	1			3						1	1	2			20	December
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total	

Prefecture of fatal accidents in pulp/paper processing products 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	1					3	1							1				2			1			9	Hokkaido
Aomori									1											1				2	Aomori
Iwate																						1		1	Iwate
Miyagi				1			1			1			3		1									7	Miyagi
Akita			1																					1	Akita
Yamagata																									Yamagata
Fukushima										1				1									1	3	Fukushima
Ibaraki	1	2	1																			1		5	Ibaraki
Tochigi		1		1		2					1					1								6	Tochigi
Gunma								1																1	Gunma
Saitama	1		1	1	1		1		1			1		1	1	1	2				1	1		14	Saitama
Chiba												1												1	Chiba
Tokyo	1						1	1							1									4	Tokyo
Kanagawa	1				1			1																3	Kanagawa
Niigata																	1							1	Niigata
Toyama		1						1																2	Toyama

Fukuoka							1		1															2	Fukuoka
Saga																							1	1	Saga
Nagasaki												1												1	Nagasaki
Kumamoto			1									1											1	3	Kumamoto
Oita	1																							1	Oita
Miyazaki			1																					1	Miyazaki
Kagoshima																								1	Kagoshima
Okinawa																									Okinawa
total	12	11	13	11	10	8	8	6	7	10	7	9	10	8	7	6	4	6	5	6	8	8	6	186	total

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

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