Fatal and non-fatal accidents in pulp/paper in Japan in 1999-2022

pulp/paper industry Code No.010601

Type of accidents in pulp/paper 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	33	31	29	25	25	21	22	21	13	19	21	21	19	18	14	23	19	22	18	19	12	17	14	16	492
falling to same level	23	28	27	26	28	21	15	28	15	30	19	13	15	18	13	23	17	19	21	17	19	25	18	28	506
crash	10	23	15	11	10	9	14	5	4	9	4	5	12	6	6	7	11	7	5	3	3	5	5	6	195
struck by flying or falling object	21	14	10	11	11	14	6	9	6	11	5	7	7	8	5	1	9	7	9	5	6	5	3	3	193
collapse	8	8	5	3	4	8	5	2	4		3	4	3		7	2	4	3	1	1	3	2	3	1	84
crashed by	14	12	18	9	6	11	15	12	10	6	9	2	5	5	8	3	2	9	3	6	3	4	10	7	189
caught in/between	152	152	127	126	109	89	91	116	95	93	86	80	70	62	62	64	67	50	54	59	59	52	55	41	2,011
cut	26	21	12	19	20	22	9	15	8	15	3	11	10	9	8	11	9	4	11	8	5	6	7	10	279
injury to the sole of the foot	1		1	3		1				1					1	1		1	1						11
drown								1									1				1				3
contact to high/low-	7	10	6	5	3	9	5	4	7	4	2	2	2	1	2	1	2	2	4	6	3	6	4	9	106

temperature																									
contact to harmful substance	4	5	4	8	5	3	3	5	3	3	2	3	1	1	1	2	3	1	5	5	1		5	1	74
electric shock	1	1	1	1				1							2				2					2	11
explosion				1																				1	2
burst	1			2			1		1															1	6
fire			1		2																				3
traffic accident (public road)	1	1	5	2			1	2	2	1	1	1	1		1		1		1		3	6		1	31
traffic accident (others)				1					1			1										1			4
reaction to motion/improper motion	11	16	13	11	11	12	15	15	14	13	8	10	7	8	13	10	14	11	5	14	6	17	15	13	282
others	2		1	1							1		3	2			2		1	1		1	18	1	34
unclassifiable	2			1			1			2		1													7
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Causal agents (large) of fatal and non-fatal accidents in pulp/paper 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	164	155	129	126	112	98	94	105	86	90	72	64	66	59	59	60	65	49	52	60	52	55	53	40	1,965

crane, conveying machine	38	44	43	33	23	25	27	34	28	31	26	28	17	18	24	18	21	23	18	17	13	19	17	15	600
other equipment	33	35	25	29	32	29	27	23	24	25	20	19	19	14	16	17	17	14	18	24	22	23	11	27	543
temporary buildings, establishments	43	39	38	41	32	30	21	33	18	34	25	21	30	26	15	35	27	29	31	18	21	24	30	34	695
substance, material	18	21	13	17	17	17	16	19	13	12	11	14	7	9	8	5	10	5	11	7	6	7	15	4	282
load	11	18	15	11	15	15	11	9	10	6	3	10	9	7	13	7	8	9	7	8	5	6	5	8	226
environment	3	1	4	1		1	2	2			2	1	4	2	2	2	3	1	2	3	4	4	1	6	51
others	7	9	8	8	3	5	5	11	4	9	5	4	3	3	6	4	10	6	2	7	1	9	25	7	161
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Causal agents (middle) of fatal and non-fatal accidents in pulp/paper in 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
engine									1			1													2
power transmission mechanism	7	3	5	7	7	5	5	3	4	6	3	1	6	1	1	1	4	1	3	6	6	4	3	3	95
woodworking machine	1	2	1	4	2			1	1	2					1				1			2	1	1	20

construction machine	1					1			1		1	3		1		1						2		1	12
metal manufacturing machine	7	2	4	1	1	1	2	2	3			2	2	1					1		2		3	1	35
general machine	148	148	119	114	102	91	87	99	76	82	68	57	58	56	57	58	61	48	47	54	44	47	46	34	1,801
mobile silviculture machine																									
crane	4	7	8	6	3	4	4	5	2	3	3	4	2	3	4		2	2	2	3		2	1	4	78
conveying machine	34	34	31	24	20	21	22	27	23	26	22	21	15	15	18	18	16	20	16	13	12	11	15	10	484
vehicle		3	4	3			1	2	3	2	1	3			2		3	1		1	1	6	1	1	38
pressure vessel		2	1		2	1	1		5	1		1		1					1	1			1	3	21
chemical facilities	2			1		1	1							1					1			1			8
welding equipment																									
kiln, caldron	1		1	1							1									1		3		1	9
electric equipment						1		1							4					2				1	9
human power machine, tools	11	10	8	9	6	12	6	8	8	4	3	5	6	4	5	7	8	2	2	4	3	4	2	6	143
tools	15	15	10	11	13	6	10	7	7	16	13	8	6	5	6	6	7	12	7	9	11	12	4	8	224
other equipments,																									

facilities	4	8	5	7	11	8	9	7	4	4	3	5	7	3	1	4	2		7	7	8	3	4	8	129
temporary buildings, establishments	43	39	38	41	32	30	21	33	18	34	25	21	30	26	15	35	27	29	31	18	21	24	30	34	695
hazards, harmful substances	4	6	6	8	8	3	5	5	4	3	2	4	2	1	1	2	3	2	5	5	1		5	1	86
materials	14	15	7	9	9	14	11	14	9	9	9	10	5	8	7	3	7	3	6	2	5	7	10	3	196
load	11	18	15	11	15	15	11	9	10	6	3	10	9	7	13	7	8	9	7	8	5	6	5	8	226
natural environment	3	1	4	1		1	2	2			2	1	4	2	2	2	3	1	2	3	4	4	1	6	51
other causal agent	1	1	1	1	1	2		3		2			1	2		1				1		1	18	1	37
no causal agent	5	8	7	6	2	3	4	8	4	5	5	3	2	1	6	3	9	6	2	6	1	8	7	6	117
unclassifiable	1			1			1			2		1					1								7
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Causal agents (small) of fatal and non-fatal accidents in pulp/paper 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			5		7		5	3	4	6	3	1	6	1	1	1	4	1	3	6	6	4	3	3	73

circular sawing machine			1		1			1	1	1					1				1			2		1	10
band sawing machine																									
wood planer machine																							1		1
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines					1					1															2
leveling, transporting or loading machine									1		1	2		1		1						2		1	9
excavating machine												1													1
foundation work machine																									
hardening machine																									

demolition machine																									
vehicle for high lift work																									
other construction machines																									
lathe					1				1																2
drill press, milling machine								1																	1
grinding machine, buffing machine			1				1					1		1							1				5
power press									1														1		2
forging pressure hammer																									
shearing machine			3				1	1	1			1	2								1		1		11
other metal manufacturing machines																			1				1	1	3
centrifugal machine								1		2															3
mixer, grinder			3		1		1	3	1	2				2		3									16
roll machine (except printingroll machine)			53		40		44	29	33	27	28	27	12	25	25	24	21	25	24	20	21	15	17	11	521

injection molding machine			1		1				1																3
food manufacturing machine																									
printing machine			5		1		4	5		4	3	2	3	4	2	1	2	1	3	2	3	2	2	1	50
industrial robot																									
other general power machines			57		59		38	61	41	47	37	28	43	25	30	30	38	22	20	32	20	30	27	22	707
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane			3		3		3	2	1	1	2	4	2	2	3		2	1	1	3				3	36
mobile crane														1											1
derrick crane			1																						1
elevator, lift			1				1	2	1	2									1			1	1	1	11
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane			3					1			1				1			1				1			8
truck			3		4		3		2	1	2	2	2	1			4	2	6	3	4	1	1	1	42
forklift			14		7		11	13	10	12	7	8	6	7	11	14	8	7	5	5	5	6	8	6	170
railway equipment											1														1
conveyor			10		6		5	13	9	12	8	9	5	6	7	4	4	9	5	4	2	3	6	3	130
loader			3		1		1				1	1										1			8
straddle carrier																									
rough terrain hauler																									
other powered conveying machines			1		2		2	1	2	1	3	1	2	1				2		1	1				20
cars, bus, motorcycle			4				1	2	3	2	1	3			2		3	1		1	1	5	1	1	31
railway vehicle																									
other vehicles																						1			1
boiler									4			1							1	1				2	9

pressure vessel			1		2		1			1														1	6
other pressure vessels									1					1									1		3
chemical facilities							1							1					1			1			4
gas welding equipment																									
arc welding equipment																									
other welding equipment																									
kiln, caldron			1								1									1		1			4
industrial dryer																						1		1	2
other kiln, caldron																						1			1
transmission								1																	1
electric power facilities															3					1				1	5
other electrical equipment															1					1					2
human power cranes							1			1	1	1	1												5
human power hauling equipment			2		2		1	1	4	1			1	2	2	2	3			1	2	2	1	4	31

human power machine					1		1																		2
hand tool			6		3		3	7	4	2	2	4	4	2	3	5	5	2	2	3	1	2	1	2	63
ladder			9		5		5	2	2	4	6	4	5	3	5	4	7	4	5	6	6	5	1	5	93
slinging tool									1	3	1	1						2				1			9
other tools			1		8		5	5	4	9	6	3	1	2	1	2		6	2	3	5	6	3	3	75
other equipment, facilities			5		11		9	7	4	4	3	5	7	3	1	4	2		7	7	8	3	4	8	102
scaffolding			2		3						3	1		1		1			1		2		1		15
timbering																									
stairs, landing stage			9		10		7	10	4	6	4	6	8	2	5	10	3	7	4	4	6	7	5	9	126
opening							1				2			2			3		1	1		1	4	3	18
roof, beam, haze, crossbeam, principal rafter			2							1	1								1	1	1	2	2	2	13
working platform, boot board			8		7		5	9	7	5	3	2	4	3	4	4	10	3	5	3		1	5	5	93
passage			9		9		4	6	4	16	12	10	10	15	5	12	9	10	10	8	8	7	9	11	184
building, establishment			4		3		2	7	2	4		2	4	2		5	2	5	4	1	2	2	3	1	55
other temporary buildings,			4				2	1	1	2			4	1	1	3		4	5		2	4	1	3	38

establishments																									
explosive substance			1																						1
inflammable substance			1		1																				2
inflammable gas																									
harmful substance			2		2		2	4	2	1		3	1	1	1	1	2	2	4	5			3		36
radiation																									
other hazards, harmful substances			2		5		3	1	2	2	2	1	1			1	1		1		1		2	1	26
metal material			3		4		4	3	4	2	2	7	3	6	3	2	5	2	3	2	1			2	58
lumber, bamboo			1		1		2	1	1													1			7
stone, sand, substance														1											1
other materials			3		4		5	10	4	7	7	3	2	1	4	1	2	1	3		4	6	10	1	78
load			14		14		11	8	8	6	3	9	9	7	12	7	8	9	6	8	5	6	5	7	162
machine/equipment as load			1		1			1	2			1			1				1					1	9
natural ground, rock															1										1
standing tree																									
water																	1					2			3
abnormal																									

environment																					1				1
high/cold temperature environment								1			1	1		1		1		1		2	2	2	1	2	15
other environments			4				2	1			1		4	1	1	1	2		2	1	1			4	25
other causal agent			1		1			3		2			1	2		1				1		1	18	1	32
no causal agent			7		2		4	8	4	5	5	3	2	1	6	3	9	6	2	6	1	8	7	6	95
unclassifiable							1			2		1					1								5
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Workers age of fatal and non-fatal accidents in pulp/paper 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	14	14	10	9	9	7	4	7	5		2	5	4	6	5	3	2	3	3	3	4	6	2		127
20-29	75	65	63	60	50	42	40	39	32	43	33	29	22	24	24	22	19	18	23	18	17	24	22	14	818
30-39	45	72	49	53	48	52	58	66	39	52	40	40	47	32	43	46	41	29	30	39	31	21	30	16	1,019
40-49	68	56	56	50	39	33	30	50	44	41	30	36	43	34	25	31	43	32	41	40	32	37	44	42	977
50-59	92	95	75	73	69	70	46	62	46	53	45	41	33	30	30	27	36	41	22	30	21	37	30	40	1,144
60 years old or more	23	20	22	21	19	16	25	12	17	18	14	10	6	12	16	19	20	13	22	14	19	22	29	29	438
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Workers' number of workplace of fatal and non-fatal accidents in pulp/paper 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	20	28	19	29	22	26	23	18	15	16	6	11	6	6	10	11	9	7	7	11	9	7	7	7	330
10-29	56	42	61	35	47	34	41	51	35	37	29	24	23	29	33	38	29	16	24	25	16	22	28	25	800
30-49	53	66	37	37	43	36	30	36	28	27	24	23	29	17	19	26	26	28	24	24	18	23	19	19	712
50-99	74	60	65	59	48	48	40	57	48	58	40	46	28	36	35	25	29	37	33	29	26	30	36	37	1,024
100-299	70	76	71	74	52	49	53	57	34	53	50	42	55	42	36	43	59	42	39	45	45	49	47	40	1,223
300 workers or more	44	50	22	32	22	27	16	17	23	16	15	15	14	8	10	5	9	6	14	10	10	16	20	13	434
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Month of fatal and non-fatal accidents in pulp/paper 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	32	23	25	24	24	19	21	21	15	19	25	21	18	13	9	12	8	15	14	10	12	9	11	13	413
February	30	24	22	16	25	24	15	20	19	21	16	11	11	13	13	14	12	11	14	10	9	13	12	10	385
March	29	35	27	23	26	27	20	17	18	18	14	24	21	7	11	14	14	15	12	15	14	13	14	4	432
April	21	16	19	19	20	12	9	24	14	13	6	13	13	14	8	10	18	10	11	11	8	11	12	9	321
May	26	28	21	21	17	9	24	17	20	17	12	4	21	13	11	13	11	13	11	13	17	16	11	13	379
June	30	28	15	22	17	20	13	15	12	13	10	4	15	14	13	12	19	10	12	14	8	12	13	13	354

July	24	33	27	23	18	18	11	18	18	13	18	9	9	11	10	15	11	9	13	14	7	15	12	17	373
August	30	24	33	22	15	20	22	23	18	16	10	16	6	13	11	17	12	10	14	16	13	17	27	11	416
September	27	36	25	21	17	20	18	19	12	17	7	17	7	4	15	10	14	13	12	10	8	7	7	12	355
October	31	28	17	19	16	23	23	17	11	22	12	10	7	11	14	10	11	8	15	15	11	15	8	15	369
November	17	26	17	32	20	9	14	25	10	18	14	17	14	13	14	8	14	13	1	6	6	9	13	15	345
December	20	21	27	24	19	19	13	20	16	20	20	15	13	12	14	13	17	9	12	10	11	10	17	9	381
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

Prefecture of fatal and non-fatal accidents in pulp/paper 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	14	16	11		5		13	13	7	9	16	5	8	9	5	6	11	7	7	8	10	9	6	10	205
Aomori	2	1	3						2	2		1	5						3	1	1	1	2		24
Iwate	1	3	1		6		1	4	4	5	1	4	4	1	4	2	1		3	3	1	1	3		53
Miyagi	4	7	1		2		2	2	2	1	2	1	2	1	2		2	1		1		3	2	1	39
Akita	1	1	2		3			1	1			2		2			3	2		3	1	1	1		24
Yamagata	1	2	2		3			2																	10
Fukushima	3	4	3		3		2	2	3	2	1	4	3	6	1		2	3	1	1	5	2	1	1	53
Ibaraki	4	8	3		3		3	5	3	3	3	2	4	2	4	4	3		1		2	1	7	3	68
Tochigi	3	2						3				1		1	2	1	2	1		1			1	1	19
Gunma										1							1		1		1	2	2		8

Saitama	9	4	10		3		11	9	11	7	5	4	2	6	10		5	10	2	5	5	2	5	8	133
Chiba	6	6	4		2		3	3		2	3		2	2	3	4	1	2	1	4		1	9	1	59
Tokyo	3	3	3		1		2	1	2	1	1	3	1				2		1		1			1	26
Kanagawa	3	1	2		5			1	3					2	3	2	1	5	2			3			33
Niigata	2	3	3		2		1	5	1	3	4	3	1	1		4	5	3	6	3	2	1	3	1	57
Toyama	5	1	3		3		4	4	3	3	4	4			1	2	5		5	1	3	3	2	5	61
Ishikawa	1	3	4		3		1	7	1	1	2	1	2	1	1	2	1	2		4	2	3	2		44
Fukui	8	3	8		6		3	7	4	1	2	3	1	1	1	3	2	3		4	2	1	2	4	69
Yamanashi	2	2	5		2		5	5		1			2	2	2	2	2	1	2	1	1		2		39
Nagano		2			2											1						1			6
Gifu	18	22	20		20		10	7	9	15	9	17	11	7	11	11	9	10	10	14	7	8	10	7	262
Shizuoka	88	74	71		65		49	59	35	53	44	37	27	24	26	32	39	32	34	32	37	36	36	30	960
Aichi	5	8	9		4		4	2	3	4	8	2	3	6	2	4	3	4	11	6	7		5	6	106
Mie			4		3		1	1	1	3	2	1	2	1						2			1	2	24
Shiga		4	2					1	3		2	2	2		1	3	2		2		1	2	3	4	34
Kyoto	1	1					1	1					1	1					1				1		8
Osaka	8	6	9		5		10	10	3	13	4	3	6	8	6	10	3	4	8	5	6	10	7	2	146
Hyogo	10	5			4		8	10	6	3	1	9	7	3	4	6	7	5	3	1	2	4	4	3	105
Nara	1																						1		2
Wakayama		1																							1
Tottori	3	2	1		2		1	1	6	4	2	1	1	2	3	4	3	2	3	1	4	4	3	2	55

Shimane	2	2						1		2		1				1	1		1			2		1	14
Okayama	1	5	4		3		4	4	2	4	3	1	2	5	2	2	1	2			2	1		5	53
Hiroshima	3	4	7		2		4		2		3	3	3	2		2	3	1		4			1		44
Yamaguchi	5	3	1		3		2	2	2		1			2	1	1				2	1	1	3	1	31
Tokushima	4	17	5		4		3	1	5	5	1	3	5	4	2	2	3	3	3	4		3	4	7	88
Kagawa	8	9	7		7		4	4	3	1	1	2	6	3	1	2	2								60
Ehime	44	35	34		29		35	33	34	34	23	21	26	21	29	23	22	19	18	18	12	22	14	17	563
Kochi	29	33	23		21		8	6	12	13	8	12	8	8	7	8	8	9	7	7	3	12	6	5	253
Fukuoka	2	8	5		3		2	9	5	2	2	1	5		4	1	3	1		4	2	1	3	3	66
Saga	3	3			3		2	1		5	2	2			3	2	1	2	1			2	3	4	39
Nagasaki	2	3	2					2		1								1							11
Kumamoto			1		1		2	4	3	1	1	2	1	3					2	1	3	2	2	3	32
Oita	2	3	1		1		1	1	1	1		1		1	1		1		1	2		1		1	20
Miyazaki								1	1		1	2	1						1						7
Kagoshima	6	2	1				1	1		1	1					1	1	1		1		1		2	20
Okinawa											1		1		1										3
total	317	322	275	266	234	220	203	236	183	207	164	161	155	138	143	148	161	136	141	144	124	147	157	141	4,523

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)

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Fatal accidents in pulp/paper in Japan in 1999-2022

pulp/paper industry Code No.010601

Type of fatal accidents in pulp/paper 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	1		1	1	2	1	1				2	2		1											12
falling to same level														1		1									2
crash																									
struck by flying or falling object					1							1													2
collapse		3											1					1		1					6
crashed by							2		1		1				1										5
caught in/between	3	2	1	2	2	1	1	1	2	7	2	2	2	4	1			1		1		3	2	3	43
cut																									
injury to the sole of the foot																									

drown								1									1				1				3
contact to high/low-temperature	1																								1
contact to harmful substance		1					1												1	3					6
electric shock		1													1										2
explosion																									
burst																									
fire																									
traffic accident (public road)			1																			1			2
traffic accident (others)																									
reaction to motion/improper motion																									
others																	1								1
unclassifiable																									
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Causal agents (large) of fatal accidents in pulp/paper 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	1	1	1	3	2	1	2	2	1	6	1			4	1			1		1		1	1	2	32
crane, conveying machine	1	2	2		1	1	1		2	1	2	2	2	1	1	1						2	1		23
other equipment	1											3			1						1				6
temporary buildings, establishments	1	1			2		1				2			1								1			9
substance, material		1					1												1	3					6
load		2											1					1		1				1	6
environment	1																1								2
others																	1								1
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Causal agents (middle) of fatal accidents in pulp/paper in 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
engine																									
power transmission mechanism			1																						1

woodworking machine																									
construction machine																								1	1
metal manufacturing machine																									
general machine	1	1		3	2	1	2	2	1	6	1			4	1			1		1		1	1	1	30
mobile silviculture machine																									
crane		1																							1
conveying machine	1	1	1		1	1	1		2	1	2	2	2	1	1	1						1	1		20
vehicle			1																			1			2
pressure vessel												1													1
chemical facilities																									
welding equipment																									
kiln, caldron																									
electric equipment															1										1
human power machine, tools																									
tools																									
other equipments,																									

facilities	1											2									1				4
temporary buildings, establishments	1	1			2		1				2			1								1			9
hazards, harmful substances		1					1												1	3					6
materials																									
load		2											1					1		1				1	6
natural environment	1																1								2
other causal agent																									
no causal agent																	1								1
unclassifiable																									
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Causal agents (small) of fatal accidents in pulp/paper 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																									
power transmission mechanism			1																						1

circular sawing machine																									
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines																									
leveling, transporting or loading machine																								1	1
excavating machine																									
foundation work machine																									
hardening machine																									

demolition machine																									
vehicle for high lift work																									
other construction machines																									
lathe																									
drill press, milling machine																									
grinding machine, buffing machine																									
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines																									
centrifugal machine																									
mixer, grinder				1																					1
roll machine (except printingroll machine)		1		1	1		1			5				3	1			1				1	1		16

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines	1			1	1	1	1	2	1	1	1			1						1				1	13
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane		1																							1
mobile crane																									
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck																									
forklift							1			1	1			1	1	1									6
railway equipment																									
conveyor	1	1			1				2		1	1										1	1		9
loader			1			1																			2
straddle carrier																									
rough terrain hauler																									
other powered conveying machines												1	2												3
cars, bus, motorcycle			1																			1			2
railway vehicle																									
other vehicles																									
boiler												1													1

pressure vessel																									
other pressure vessels																									
chemical facilities																									
gas welding equipment																									
arc welding equipment																									
other welding equipment																									
kiln, caldron																									
industrial dryer																									
other kiln, caldron																									
transmission																									
electric power facilities															1										1
other electrical equipment																									
human power cranes																									
human power hauling equipment																									

human power machine																									
hand tool																									
ladder																									
slinging tool																									
other tools																									
other equipment, facilities	1											2									1				4
scaffolding																									
timbering																									
stairs, landing stage											1														1
opening	1				1		1							1											4
roof, beam, haze, crossbeam, principal rafter																									
working platform, boot board											1														1
passage					1																				1
building, establishment		1																				1			2
other temporary buildings,																									

establishments																									
explosive substance																									
inflammable substance																									
inflammable gas																									
harmful substance		1					1												1	3					6
radiation																									
other hazards, harmful substances																									
metal material																									
lumber, bamboo																									
stone, sand, substance																									
other materials																									
load		2											1					1		1				1	6
machine/equipment as load																									
natural ground, rock																									
standing tree																									
water																	1								1
abnormal																									

environment																									
high/cold temperature environment	1																								1
other environments																									
other causal agent																									
no causal agent																	1								1
unclassifiable																									
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Workers age of fatal accidents in pulp/paper 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																									
20-29				2	1					1	1			2		1				2		1		1	12
30-39		2	1		2		2	1	1	2		2		2	2										17
40-49	2	2	1			1	3	1	1	1		1	1	2			1	1	1	1	1	1	1	1	24
50-59	2	3	1	1	1	1				3	3	1	1							1		2			20
60 years old or more	1				1				1		1	1	1		1		1	1		1			1	1	12
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Workers' number of workplace of fatal accidents in pulp/paper 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
10-29		1	1	1	2		1			1			2	1						1				1	12
30-49	1	1	1		1		1	2	1		3				1	1						1	1		15
50-99	2	1				1	1			2		1		2				1		3		1	1		16
100-299		1	1	2	1	1	1		1	2		3		3	1		1	1		1	1	1		2	24
300 workers or more	2	3			1				1	2	2	1	1		1		1		1			1			17
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Month of fatal accidents in pulp/paper 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	1			1			2		1			1			1							9
February	1				1		1			2							1								6
March	1	2			1	1			1		1	1	1												9
April													1			1		1		1				1	5
May			1					1			1		1												4
June	1	1					1							1	1		1			3			1		10

July		1			1				1					3					1			1		1	9
August	1								1	1												1			4
September		1										1			1									1	4
October				1		1	1				1										1				5
November		2	1		2						1	2											1		9
December				1			1	1		2	1			2						1		2			11
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

Prefecture of fatal accidents in pulp/paper 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	1					1	1							1				2			1				7
Aomori																				1					1
Iwate																						1			1
Miyagi										1					1										2
Akita																									
Yamagata																									
Fukushima										1				1											2
Ibaraki	1	1																							2
Tochigi						1					1														2
Gunma																									

Saitama	1						1		1																3
Chiba												1													1
Tokyo																									
Kanagawa																									
Niigata																	1								1
Toyama		1						1																	2
Ishikawa																				3					3
Fukui					1																				1
Yamanashi																									
Nagano																									
Gifu		1			1					1		1			1										5
Shizuoka		2	2	2	2		1			3	3	2	1	1	1	1	1			1			1	1	25
Aichi	1	1											1						1						4
Mie																									
Shiga																								1	1
Kyoto								1																	1
Osaka																							1		1
Hyogo													1	1											2
Nara																									
Wakayama																									
Tottori																									

Shimane																						1			1
Okayama																									
Hiroshima				1	1																				2
Yamaguchi														1											1
Tokushima		1																						1	2
Kagawa																									
Ehime							1		1	1	1			1								1			6
Kochi																									
Fukuoka							1		1																2
Saga																									
Nagasaki																									
Kumamoto			1									1										1			3
Oita	1																								1
Miyazaki																									
Kagoshima																									
Okinawa																									
total	5	7	3	3	5	2	5	2	3	7	5	5	3	6	3	1	2	2	1	5	1	4	2	3	85

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

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