Fatal and non-fatal accidents in petroleum/coal products in Japan in 1999-2021

petroleum/coal products industry Code No.010804

Type of accidents in petroleum/coal 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	12	10	25	9	7	8	13	4	13	13	10	14	17	12	14	16	5	10	16	6	15	10	13	272	fall from height
falling to same level	7	12	12	7	8	11	13	3	11	9	4	11	4	9	15	9	7	7	6	7	10	8	12	202	falling to same level
crash	5	4	4	1	2	7	8	2	2	1	7	5	3	3	1	5	2	3	2	2	1	1	5	76	crash
struck by flying or falling object	11	7	4	10	2	4	4	6	2	1	3	3	3	2	3	3	1	4	3	1	2	2	1	82	struck by flying or falling object
collapse		1	1	1	2	1		3	2		1				1		2			1		2		18	collapse
crashed by	1	3	5	5	3	1	1	2	1	1	1		5	3	2	3	2	2		2	1	5	2	51	crashed by
caught in/between	25	20	23	21	14	30	12	25	15	14	13	17	16	7	10	19	16	7	13	14	9	11	13	364	caught in/between
cut	9	4	4	3	2	5	4	4	2	5	1	2	3	2	2				1			2	3	58	cut
injury to the sole of the foot	1								2	1									1					5	injury to the sole
drown		1											8							1				10	drown
contact to high/low- temperature	5	2	10	5	7	6	9	2	4	5	5	5	4	5	1	5	3	5	6	5	4	1	5		contact to high/low- temperature

contact to harmful																									contact to
	2	4	2	2	1	2		1	1		1	3		6		9	1	1	1	2	1	1	1	42	harmful
substance																									substance
electric shock														1										1	electric shock
explosion	1			4	1						2		3		4						2			17	explosion
burst													1											1	burst
fire			1				1	2			4	2	1				1		1					13	fire
traffic accident (public	1							1	1		2	1						1		1		3	1	13	traffic accident
road)	I							ľ				ľ						I		•		3	I	13	(public road)
traffic accident																						1		1	traffic accident
(others)																						ľ		1	(others)
reaction to																									reaction to
motion/improper	6	10	3	4	4	12	8	8	3	4	4	8	3	4	6	1	2	3	8	5	4	5	11	126	motion/improper
motion																									motion
others		1					1								1	1					3	4		11	others
unclassifiable							1																	1	unclassifiable
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

Causal agents (large) of fatal and non-fatal accidents in petroleum/coal 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)
Causar (L) agents		2000	2001	2002	2003	2004	2003	2000	2007	2000	2005	2010	2011	2012	2013	2014	2013	2010	2017	2010	2017	2020	2021	II I	agents
machine	26	15	22	15	10	20	9	14	9	8	9	11	12	4	8	13	10	4	5	5	5	6	14	254	machine
crane, conveying																									crane,

machine	17	11	18	10	13	17	12	16	13	8	11	12	8	5	11	15	6	9	9	14	10	16	11	272	conveying
machine																									machine
other equipment	12	12	22	18	7	14	16	9	11	15	10	15	18	18	11	11	8	14	10	7	13	10	16	297	other
other equipment	12	12	22	10	/	14	10	9	11	13	10	13	10	10			0	14	10		13	10	10	297	equipment
tompovom buildings																									temporary
temporary buildings, establishments	11	14	13	12	10	15	25	8	11	12	11	16	14	11	15	14	9	8	15	9	11	13	12	289	buildings,
establishments																									establishments
substance material	9	15	8	7	6	9	4	7	7	2	12	10	5	8	5	13	3	4	6	4	6	3	5	158	substance,
substance, material			0				4		,		12					13	3					3		136	material
load	9	7	5	9	3	8	5	7	1	3	3	3	3	3	6	2	3	1	6	2	2	3	2	96	load
environment	1	3	3		3		1	1	3	3	1		10	2	3	1	2	2	3	4	2		3	51	environment
others	1	2	3	1	2	4	3	1	4	3	1	4	1	3	1	2	1	1	4	2	3	5	4	56	others
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

Causal agents (middle) of fatal and non-fatal accidents in petroleum/coal 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	2	2	2	1	2	2	1			1	1	3			1	2	4			1			1	26	power transmission mechanism
woodworking machine	2	1						1		1			1		1								1	8	woodworking machine

construction machine	4	2	6		3	2		1	2		1	2	1	1	1	5	2				1	3	5	 42	construction
																									machine
metal manufacturing	4	1	2	1		1	1						1					1	1		1			14	metal manufacturing
																									machine
general machine	14	9	12	13	5	15	7	12	7	6	7	6	9	3	5	6	4	3	4	4	3	3	7	164	general
general macinite	ļ																<u> </u>		ļ.	ļ.					machine
mobile silviculture																									mobile
machine																									silviculture
																									machine
crane		2		2			2		3	1						1		1		1		1		14	crane
conveying machine	16	9	15	8	11	17	10	15	10	7	7	10	8	5	10	9	6	8	7	12	8	12	9	229	conveying machine
vehicle	1		3		2			1			4	2			1	5			2	1	2	3	2	29	vehicle
pressure vessel					1		1																	2	pressure vessel
chemical facilities	2	2	1	3				1		3		3	3	2		1	1	1		1	1		1	26	chemical facilities
uslding aguinment																									welding
welding equipment																									equipment
kiln, caldron		1		4			1		1	1			1		1	2	1			1	1	1		16	kiln, caldron
electric equipment						1					1			2										6	electric
electric equipment						ľ								2				2						0	equipment
human power machine,	2	1	2	2	1	3	6	3	4	2	2	1	3	2	3	1	1	4	3	1	2	2	3	54	human power
tools						3	0	3	4	2			3		٥			4	3				٥	34	machine, tools

tools	5	1	14	5	2	3	4	4	3	6	3	7	4	8	3	3	1	6	5	2	4	2	9	104	tools
other equipments,	3	7	5	4	3	7	4	1	3	3	4	4	7	4	4	4	4	1	2	2	5	5	3	89	other equipments, facilities
temporary buildings, establishments	11	14	13	12	10	15	25	8	11	12	11	16	14	11	15	14	9	8	15	9	11	13	12		temporary buildings, establishments
hazards, harmful substances	4	6	6	3	3	3	4	4	2	1	9	6	4	7	4	10	2	1	3	3	4	2	2	93	hazards, harmful substances
materials	5	9	2	4	3	6		3	5	1	3	4	1	1	1	3	1	3	3	1	2	1	3	65	materials
load	9	7	5	9	3	8	5	7	1	3	3	3	3	3	6	2	3	1	6	2	2	3	2	96	load
natural environment	1	3	3		3		1	1	3	3	1		10	2	3	1	2	2	3	4	2		3	51	natural environment
other causal agent			1	1	1				4	2				1			1		1		1	4		17	other causal agent
no causal agent	1	2	1		1	4	3	1		1	1	4	1	2	1	2		1	3	2	2	1	4	38	no causal agent
unclassifiable			1																					1	unclassifiable
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

Causal agents (small) of fatal and non-fatal accidents in petroleum/coal 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		2	2	1			1	1	3			1	2	4		1			1	19	power transmission mechanism
circular sawing machine					1		1			1										3	circular sawing machine
band sawing machine																					band sawing 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																			1	1	chain saw
other woodworking machines												1								1	other woodworking machines
leveling, transporting or loading machine		5	1			1		1	1	1	1		1	2			1		4	19	leveling, transporting or loading machine
excavating machine			2		1				1				4					3	1	12	excavating machine
foundation work																					foundation work

hardening machine		1																		1	hardening machine
demolition machine						1														1	demolition machine
vehicle for high lift																					vehicle for high lift
work																					work
other construction												1								1	other construction
machines												<u> </u>									machines
lathe		1																		1	lathe
drill press, milling																					drill press, milling
machine																					machine
grinding machine,															1					1	grinding machine,
buffing machine																					buffing machine
power press																1				1	power press
forging pressure																					forging pressure
hammer																					hammer
shearing machine																					shearing machine
other metal																					other metal
manufacturing		1		1						1								1		4	manufacturing
machines																					machines
centrifugal machine																					centrifugal machine
mixer, grinder		3		3	2		1	1	1	4	1	1	2	1		1	1			22	mixer, grinder
roll machine (except																					roll machine (except
printingroll		1	1	1	1	1		1	2		1	1		1		1			1	13	printingroll
machine)																					machine)
injection molding																					injection molding

machine		1	2	1		1		1									1	1			8	machine
food manufacturing																						food manufacturing machine
printing machine			1			1															2	printing machine
industrial robot					1																1	industrial robot
other general power machines		7	1	2	8	4	5	4	3	5	1	3	4	2	3	2	2	2	2	7	67	other general power machines
felling machine																						felling machine
mobile logging machine																						mobile logging machine
skyline yarding machine																						skyline yarding machine
other mobile silviculture machine																						other mobile silviculture machine
crane				1											1				1		3	crane
mobile crane				1																	1	mobile crane
derrick crane																						derrick crane
elevator, lift						2							1								3	elevator, lift
cargo lifting appliance																						cargo lifting appliance
gondola							1														1	gondola
lumberyard equipment, logging																						lumberyard equipment, logging
cableway																						cableway

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simple skyline																									simple skyline
yarding equipment																									yarding equipment
other powered																									other powered
crane									1											1				2	crane
truck			4		7		4	3	5			1		1	4	4	1	4	2	4	4	3	4	55	truck
forklift			4		1		3	1	1	2	1	1	4	2	2		4	2	1	2		1	1	33	forklift
railway equipment															1	1								2	railway equipment
conveyor			5		3		3	11	3	5	5	7	3	1	3	3	1	1	4	5	2	5	4	74	conveyor
loader			2								1							1		1	1	1		7	loader
straddle carrier																									straddle carrier
rough terrain hauler																									rough terrain hauler
other powered									1			1	1	1		1					1	2		8	other powered
conveying machines												<u> </u>		<u> </u>		•									conveying machines
cars, bus,			3		1			1			3	1				3			2		1	3	1	19	cars, bus,
motorcycle																									motorcycle
railway vehicle												1												1	railway vehicle
other vehicles					1						1				1	2				1	1		1	8	other vehicles
boiler					1		1																	2	boiler
pressure vessel																									pressure vessel
other pressure																									other pressure
vessels																									vessels
chemical facilities			1					1		3		3	3	2		1	1	1		1	1		1	19	chemical facilities
gas welding																									gas welding

equipment																						equipment
arc welding equipment																						arc welding equipment
other welding equipment																						other welding equipment
kiln, caldron				1		1	1					1	1	1			1	1	1		9	kiln, caldron
industrial dryer										1			1								2	industrial dryer
other kiln, caldron																						other kiln, caldron
transmission								1							1						2	transmission
electric power facilities											2				1						3	electric power facilities
other electrical equipment																						other electrical equipment
human power cranes					1					1											2	human power cranes
human power hauling equipment			1	4	2	3	1	1				2		1	1	2	1	2	1	1	23	human power hauling equipment
human power										1			1								2	human power machine
hand tool		2		2		1	1	1	1	1	2	1			3	1			1	2	19	hand tool
ladder		10	2	3	1	2	4	2	5	2	5	1	2		3	4		3	1	4	54	ladder
slinging tool									1				1		1						3	slinging tool
other tools		4		1	3	1	2	1	1	2	3	2		1	2	1	2	1	1	5	33	other tools
other equipment,																						other equipment,

facilities		5	3	4	1	3	3	4	4	7	4	4	4	4	1	2	2	5	5	3	68	facilities
scaffolding			1			1						2	2				1				7	scaffolding
timbering																						timbering
stairs, landing stage		1	3	6	1	4	4	2	2	3	2	2	2	3	3	2	3	1	4	4	52	stairs, landing stage
opening					1		1		1	1	2	1			1	1			1		10	opening
roof, beam, haze, crossbeam, principal rafter					1		1			1			1									roof, beam, haze, crossbeam, principal rafter
working platform, boot board		1		3	1	1		1	2		2	1	2	1		4		1	1	4	25	working platform, boot board
passage		5	3	7	1	4	1	4	7	2	2	4	3	2	3	5	4	7	4	3	71	passage
building, establishment		5	2	6	2	1	3	4	4	6	3	3	1	2	1	2		1			46	building, establishment
other temporary buildings, establishments		1	1	3	1		2			1		2	3	1		1	1	1	3	1	22	other temporary buildings, establishments
explosive substance										3										1	4	explosive substance
inflammable substance				1	1			8	5		1	4		1	1	2			1	1	26	inflammable substance
inflammable gas				1	1					1											3	inflammable gas
harmful substance			1					1			3		9					1	1		16	harmful substance
radiation																						radiation
other hazards,		6	2	2	2	2	1		1		3		1	1		1	3	3			28	other hazards, harmful substances

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metal material		1	1		1	3		1	3				2				1		1	1	15	metal material
lumber, bamboo																				1	1	lumber, bamboo
stone, sand,		1																				stone, sand,
substance		ı																			3	substance
other materials			2		2	2		2	1	1	1	1	1	1	3	3		2			22	other materials
load		4	2	5	6	1	3	3	3	3	3	6	2	3	1	6	2	2	3	2	60	load
machine/equipment		1	1		1																	machine/equipment
as load		I																			3	as load
natural ground,						2											1	1			4	natural ground,
rock																		1			11 -	rock
standing tree																						standing tree
water						1		1		6	1						1			1	11	water
abnormal																						abnormal
environment																						environment
high/cold																						high/cold
temperature		1	1		1		3			2				2		2	2			2	16	temperature
environment																						environment
other environments		2	2	1						2	1	3	1		2	1		1			16	other environments
other causal agent		1	1			4	2				1			1		1		1	4		16	other causal agent
no causal agent		1	1	3	1		1	1	4	1	2	1	2		1	3	2	2	1	4	31	no causal agent
unclassifiable		1																			1	unclassifiable
total		94	54	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,149	total

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	2		2	3		1			1	1				4	1	1	2	2	2	1	1	3	1	28	19 years old or less
20-29	11	14	20	17	4	11	10	12	4	4	10	12	8	5	8	14	4	5	5	4	5	7	11	205	20-29
30-39	16	14	15	14	11	15	17	17	13	5	10	20	20	11	10	12	8	8	6	5	8	8	15	278	30-39
40-49	19	27	25	11	19	24	14	18	14	15	14	12	13	8	16	15	11	11	20	15	13	19	10	363	40-49
50-59	26	21	23	20	14	27	24	13	18	19	17	20	19	15	15	19	11	10	14	13	13	11	16	398	50-59
60 years old or	12	3	9	7	6	9	10	3	9	10	7	7	11	11	10	10	6	7	11	9	12	8	14	201	60 years old or
more											,													201	more
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

Workers' number of workplace of fatal and non-fatal accidents in petroleum/coal 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	27	21	26	17	15	23	14	13	13	21	15	11	13	6	14	20	13	12	9	9	9	8	11	340	9 workers or less
10-29	24	22	18	19	18	19	15	13	16	8	10	17	15	15	12	9	11	8	12	11	14	11	20	337	10-29
30-49	11	11	17	5	5	13	10	7	9	10	10	5	8	2	7	4	4	4	10	3	11	8	13	187	30-49
50-99	11	13	13	14	6	18	14	11	9	2	11	10	17	11	8	16	5	5	6	8	7	11	7	233	50-99
100-299	7	7	10	9	6	10	13	14	4	7	6	14	7	6	15	7	2	10	11	7	7	5	4	188	100-299
300 workers or	6	5	10	8	4	4	9	5	8	6	6	14	11	14	4	15	7	4	10	9	4	13	12	188	300 workers or
more						•															'				more
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

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	4	9	7	3	7	8	4	8	3	2	3	4		6	4	6	1	6	1	2	5	7	7	107	January
February	7	2	8	4	3	2	4	5	3	2	11	7	11	4	6	6	4	4	10	4	9	6	10	132	February
March	8	7	10	4	1	9	5	8	7	3	7	7	14	6	4	4	5	3	3	4	3	4	3	129	March
April	3	8	8	5	6	6	3	9	4	3	5	6	4	4	6	3	6	1	3	2	3	1	3	102	April
May	5	4	7	8	5	4	8	2	5	6	6	1	5	6	2	2	1	3	6	4	2	2	3	97	Мау
June	6	16	6	6	2	17	10	7	3	4	1	9	5	3	4	4		2	1	2	4	4	6	122	June
July	10	6	10	12	7	11	11	6	1	8	8	3	3	7	9	11	4	5	6	3	4	7	4	156	July
August	10	5	13	5	2	3	8		4	3	5	4	8	2	3	7	3	5	6	9	6	5	5	121	August
September	14	4	7	7	7	10	5	4	1	7	3	10	1	4	7	5	2	5	4	5	5	9	9	135	September
October	7	9	6	4	5	5	7	2	9	7	2	7	12	5	2	8	6		6	6	2	9	7	133	October
November	8	3	6	4	3	3	7	8	16	6	3	8	7	3	12	11	5	6	6	3	3	1	2	134	November
December	4	6	6	10	6	9	3	4	3	3	4	5	1	4	1	4	5	3	6	3	6	1	8	105	December
total	86	79	94	72	54	87	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,473	total

Prefecture of fatal and non-fatal accidents in petroleum/coal 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	3	5	8		4		2	5		3	9	6	3	7	6	1		4	3	4	1		3	77	Hokkaido
Aomori	3	1										1							1	1				7	Aomori
lwate	1		1												1	2	1	1				1		8	lwate
	-	\vdash	$\vdash \vdash$	\vdash		\vdash		\vdash	\vdash		\vdash	\vdash							=					=	

Miyagi	1	1	1	2	1		1	1			6		1	1	2	1		1	1	1		22	Miyagi
Akita							2	1		1	2		1									7	Akita
Yamagata								1						1						1		3	Yamagata
Fukushima	1		2	2		1				2							2					10	Fukushima
Ibaraki	5	4	3	1		4	1	1		2	1			2	1	2	2	1	2		3	35	Ibaraki
Tochigi	1				2	4				1	1	2		1	2			1	1	3	3	22	Tochigi
Gunma	1	2			2	1	2	1		1	1				2		3				1	17	Gunma
Saitama	4	2	4	4	2	5	3	2	3	4	5	1	2	1		3	2	2			2	51	Saitama
Chiba	3	4	5	2	6	4	5	7	6	11	11	4	10	6	4	1	8	3	5	6	3	114	Chiba
Tokyo	6	6	1		3		1	1	2	2	3		1	4			1	2		1	2	36	Tokyo
Kanagawa	4	2	10	2	8	6	6	3	4	6	1	10	4	6	2	3	2	4	7	9	8	107	Kanagawa
Niigata	1	1	2	3	4	1	1	2	1	1								1			1	19	Niigata
Toyama				1	2			1	1		1			1								7	Toyama
Ishikawa	2	1				2						1										6	Ishikawa
Fukui			2							1			1									4	Fukui
Yamanashi																							Yamanashi
Nagano	1	1	1		1	1	1	1						1	3	1		1		1	2	16	Nagano
Gifu			2	1		1	1		1	1	1	1	1	1		1	1		2			15	Gifu
Shizuoka	3	2	2		3		1	1		2			1	1		1	1	2	1		1	22	Shizuoka
Aichi	3	2	3	4	5	5	4		4	4	3	3	4	4	1	2	5	1	10	5	4	76	Aichi
Mie	4	1	2	3	1	1	1	4		2	2	3	1	2			4	1	2			34	Mie
Shiga			1			1	1	1					3	1		1						9	Shiga
Kyoto	5	2	2	1	3			2			1			1		1	1	1				20	Kyoto

Osaka	12	17	8	8	12	4	8	5	4	9	11	6	6	4	3	6	4	6	3	3	6	145	Osaka
Hyogo	1	2	4	2	3	3	3	3	3	8	2	1	1	5	1		2	1	3	3	4	55	Hyogo
Nara	1		1		2		1		1		1						1	1		1		10	Nara
Wakayama	1	2	2		1	2							2	2	2			2	1		2	19	Wakayama
Tottori	2					1							1									4	Tottori
Shimane														1		1			1			3	Shimane
Okayama	1	1	2	4	3	1	2	6	2		4	2	1		1	2	3	3	1	2	7	48	Okayama
Hiroshima	2	3	2	2	1	1					2		1	8	4		1			5	3	35	Hiroshima
Yamaguchi	4	4	6	1	1	2	3	4	3	3	1	6	6	2	1	1	3	3	2	5	3	64	Yamaguchi
Tokushima	1					1																2	Tokushima
Kagawa			1		2	1				1	1			2	1	1	2			2		14	Kagawa
Ehime		1	1				1	1	1		1	1	1	2		2			1	1	1	15	Ehime
Kochi					1																	1	Kochi
Fukuoka	7	6	10	5	2	1	6	1	10	2	5	5	3	4	7	5	3	5	3	2	3	95	Fukuoka
Saga		1		1					1						1					1		5	Saga
Nagasaki			2				1	1	1								1				1	7	Nagasaki
Kumamoto		1		1		2						1			2				2	1	1	11	Kumamoto
Oita		1					1				1			3		2			1	2	1	12	Oita
Miyazaki							1		1					1			2					5	Miyazaki
Kagoshima	1	1	2		1	1							1		1	1			1		2	12	Kagoshima
Okinawa	1	2	1		1	1	1												1			8	Okinawa
total	86	79	94	54	75	63	59	54	58	71	71	54	60	71	42	43	58	47	52	56	67	1,314	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 petroleum/coal products in Japan in 1999-2021

petroleum/coal products industry Code No.010804

Type of fatal accidents in petroleum/coal 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	1		1				1	1	1	2		2			1									10	fall from height
falling to same level																									falling to same
luming to sume level																									level
crash																									crash
struck by flying or			1	1		1		1																4	struck by flying
falling object			I	I				I																	or falling object
collapse																									collapse
crashed by																									crashed by
caught in/between	2	2	1	1	2		1		1	1	1	1					1		1				1	17	caught
caugiit iii/ between			ı																1						in/between
cut																									cut

injury to the sole of									1												1	injury to the sole
the foot									<u> </u>												<u>'</u>	of the foot
drown		1											8					1			10	drown
contact to high/low- temperature																	1				1	contact to high/low- temperature
contact to harmful substance														1							1	contact to harmful substance
electric shock																						electric shock
explosion															2				1		3	explosion
burst																						burst
fire																	1				1	fire
traffic accident (public road)																						traffic accident (public road)
traffic accident (others)																						traffic accident (others)
reaction to motion/improper motion																						reaction to motion/improper motion
others																						others
unclassifiable																						unclassifiable
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3	1	3	1	1	1	48	total

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		Causal (L) agents
machine			2	1	1						1													5	machine
crane, conveying machine	2	1				1		1	1	1		1							1				1		crane, conveying machine
other equipment	1	1		1	1		1		1	1		1			1		1							10	other equipment
temporary buildings, establishments		1			1		1		1	1		1													temporary buildings, establishments
substance, material			1					1						1	2				1		1			7	substance, material
load																									load
environment													8						1	1				10	environment
others																									others
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3		1		3	1	1		1	48	total

Causal agents (middle) of fatal accidents in petroleum/coal 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)
edusur (M) ugents		2000	2001	2002	2003	2001	2003	2000	2007	2000	2005	2010	2011	2012	2013	2011	2013	2010	2017	2010	2017	2020	2021	l 1	agents

engine																			engine
power transmission mechanism			1		1													2	power transmission mechanism
woodworking machine																			woodworking machine
construction machine										1								1	construction machine
metal manufacturing machine																			metal manufacturing machine
general machine			1	1														2	general machine
mobile silviculture machine																			mobile silviculture machine
crane																			crane
conveying machine	2	1				1	1	1	1		1				1		1	10	conveying machine
vehicle																			vehicle
pressure vessel																			pressure vesse
chemical facilities				1					1									2	chemical facilities
welding equipment																			welding equipment

							1]]]]				
kiln, caldron							1		1														2	kiln, caldron
electric equipment																								electric
electric equipment																								equipment
human power machine,																								human power
tools																								machine, tools
tools	1											1											2	tools
other equipments,																								other
facilities		1			1										1	1							4	equipments,
lacinties																								facilities
tomporary buildings																								temporary
temporary buildings, establishments		1			1		1		1	1		1											6	buildings,
establistiments																								establishments
h																								hazards,
hazards, harmful														1	2			1		1			5	harmful
substances																								substances
materials			1					1															2	materials
load																								load
																							10	natural
natural environment													8						I				10	environment
46																								other causal
other causal agent																								agent
no causal agent																								no causal
nio Causai agent																								agent
unclassifiable																								unclassifiable
	===	===	===	-	===	===	-		====	====	====	-				 	:		-	:	1	-	1	-

total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3		1		3	1	1		1	48	total	
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Causal agents (small) of fatal accidents in petroleum/coal 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																			2	power transmission mechanism
circular sawing machine																									circular sawing machine
band sawing machine																									band sawing 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																									other woodworking

leveling,														leveling,
transporting or						1							1	transporting or
loading machine														loading machine
excavating machine														excavating machine
foundation work														foundation work
machine														machine
hardening machine														hardening machine
demolition machine														demolition machine
vehicle for high lift														vehicle for high lift
work														work
other construction														other construction
machines														machines
lathe														lathe
drill press, milling														drill press, milling
machine														machine
grinding machine,														grinding machine,
buffing machine														buffing machine
power press														power press
forging pressure														forging pressure
hammer														hammer
shearing machine														shearing machine
other metal														other metal
manufacturing														manufacturing
machines														machines

centrifugal machine																		centrifugal machine
mixer, grinder			1														1	mixer, grinder
roll machine (except printingroll machine)																		roll machine (except printingroll machine)
injection molding machine																		injection molding machine
food manufacturing																		food manufacturing
printing machine																		printing machine
industrial robot																		industrial robot
other general power machines		1															1	other general power machines
felling machine																		felling machine
mobile logging machine																		mobile logging machine
skyline yarding machine																		skyline yarding machine
other mobile silviculture machine																		other mobile silviculture machine
crane																		crane
mobile crane																		mobile crane
derrick crane																		derrick crane
elevator, lift																		elevator, lift
					$\overline{}$		$\overline{}$	$\overline{}$										

cargo lifting																cargo lifting
appliance																appliance
gondola																gondola
lumberyard																lumberyard
equipment, logging																equipment, logging
cableway																cableway
simple skyline																simple skyline
yarding equipment																yarding equipment
other powered																other powered
crane																crane
truck		1		1	1	1								1	5	truck
forklift																forklift
railway equipment																railway equipment
conveyor	2						1					1			4	conveyor
loader																loader
straddle carrier																straddle carrier
rough terrain hauler																rough terrain hauler
other powered								1							1	other powered
conveying machines								I								conveying machines
cars, bus,																cars, bus,
motorcycle																motorcycle
railway vehicle																railway vehicle
other vehicles																other vehicles
boiler																boiler

	 =	==	=	=		_	_	=	=	=	=	 =	=	=	=	=	=	-	
pressure vessel																			pressure vessel
other pressure																			other pressure
vessels																			vessels
chemical facilities			1				1											2	chemical facilities
gas welding																			gas welding
equipment																			equipment
arc welding																			arc welding
equipment																			equipment
other welding																			other welding
equipment																			equipment
kiln, caldron						1												1	kiln, caldron
industrial dryer					1													1	industrial dryer
other kiln, caldron																			other kiln, caldron
transmission																			transmission
electric power																			electric power
facilities																			facilities
other electrical																			other electrical
equipment																			equipment
human power																			human power
cranes																			cranes
human power																			human power
hauling equipment																			hauling equipment
human power																			human power
machine																			machine

hand tool																hand tool
ladder	1							1							2	ladder
slinging tool																slinging tool
other tools																other tools
other equipment,		1		1						1	1				4	other equipment,
scaffolding																scaffolding
timbering																timbering
stairs, landing stage																stairs, landing stage
opening																opening
roof, beam, haze, crossbeam, principal rafter		1					1								2	roof, beam, haze, crossbeam, principal rafter
working platform, boot board					1			1							2	working platform, boot board
passage						1									1	passage
building, establishment				1											∥1	building, establishment
other temporary buildings, establishments																other temporary buildings, establishments
explosive substance																explosive substance
inflammable substance										2		1			3	inflammable substance

	 		 	 		 	 			 	 				 		4
inflammable gas																	inflammable gas
harmful substance									1							1	harmful substance
radiation																	radiation
other hazards,														_		,	other hazards,
harmful substances														'			harmful substances
metal material		1														1	metal material
lumber, bamboo																	lumber, bamboo
stone, sand,																	stone, sand,
substance																	substance
other materials					1											1	other materials
load																	load
machine/equipment																	machine/equipment
as load																	as load
natural ground,																	natural ground,
rock																	rock
standing tree																	standing tree
water								6					1			7	water
abnormal																	abnormal
environment																	environment
high/cold																	high/cold
temperature												1				1	temperature
environment																	environment
other environments								2								2	other environments
other causal agent																	other causal agent

no causal agent																						no causal agent
unclassifiable																						unclassifiable
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3	1	3	1	1	1	48	total

Workers age of fatal accidents in petroleum/coal 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		1															1							2	20-29
30-39			1		1	1	1	1	1				3											9	30-39
40-49	1	1	1	1	1		1		2		1	1	2		1				1					14	40-49
50-59	1	1	1					1		3		1	2	1	2				2		1			16	50-59
60 years old or more	1				1							1	1							1			1	6	60 years old or more
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3		1		3	1	1		1	48	total

Workers' number of workplace of fatal accidents in petroleum/coal 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	2		1	1	2				1		1		2											10	9 workers or less
10-29	1	1	1	1		1	1	1	2			1	2		1		1		2		1		1	18	10-29
30-49			1		1			1		1														4	30-49
50-99							1						4						1					6	50-99
										\Box				\Box		\Box	\Box					\Box			

100-299												1		1	2						4	100-299
300 workers or										2		1						1			6	300 workers or
more		2								2								ľ			0	more
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3	1	3	1	1	1	48	total

Month of fatal accidents in petroleum/coal 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		1										1												2	January
February				1	1									1										3	February
March	1	1				1	1					1	8				1		1					15	March
April					1			1		1														3	April
May	1																		1					2	May
June		1						1	1	1		1			1									6	June
July				1																				1	July
August			1				1													1	1			4	August
September			1								1								1				1	4	September
October										1														1	October
November			1						1						2									4	November
December	1				1				1															3	December
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3		1		3	1	1		1	48	total

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																									Hokkaido
Aomori																									Aomori
lwate																									lwate
Miyagi	1		1	1									6											9	Miyagi
Akita									1				2											3	Akita
Yamagata																									Yamagata
Fukushima																									Fukushim
Ibaraki	1		1																					2	Ibaraki
Tochigi																									Tochigi
Gunma																			1					1	Gunma
Saitama					1							1												2	Saitama
Chiba									1	2		2			2		1		1		1			10	Chiba
Tokyo			1												1									2	Tokyo
Kanagawa							1							1										2	Kanagawa
Niigata																									Niigata
Toyama																									Toyama
Ishikawa						1																		1	Ishikawa
Fukui																									Fukui
Yamanashi																									Yamanasl
Nagano								1																1	Nagano
Gifu				1																				1	Gifu

Shizuoka																		Shizuoka
Aichi		1		1									1				3	Aichi
Mie	1			1	1				1								4	Mie
Shiga																		Shiga
Kyoto																		Kyoto
Osaka		1															1	Osaka
Hyogo																		Hyogo
Nara																		Nara
Wakayama																		Wakayama
Tottori																		Tottori
Shimane																		Shimane
Okayama																		Okayama
Hiroshima																1	1	Hiroshima
Yamaguchi																		Yamaguchi
Tokushima																		Tokushima
Kagawa																		Kagawa
Ehime		1															1	Ehime
Kochi																		Kochi
Fukuoka						1	1	1						1			4	Fukuoka
Saga																		Saga
Nagasaki																		Nagasaki
Kumamoto																		Kumamoto
Oita																		Oita

Miyazaki																						Miyazaki
Kagoshima																						Kagoshima
Okinawa																						Okinawa
total	3	3	3	2	3	1	2	2	3	3	1	3	8	1	3	1	3	1	1	1	48	total

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

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