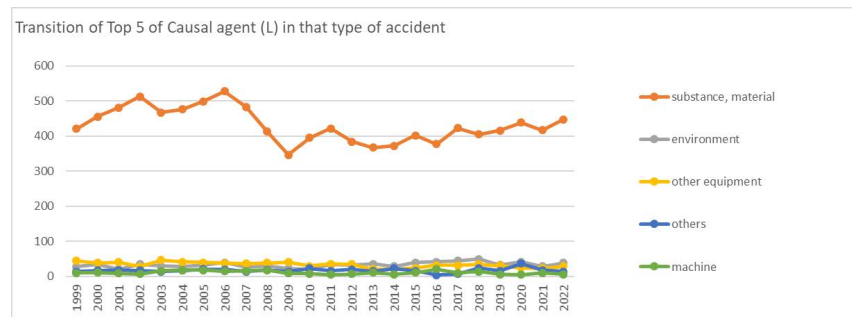
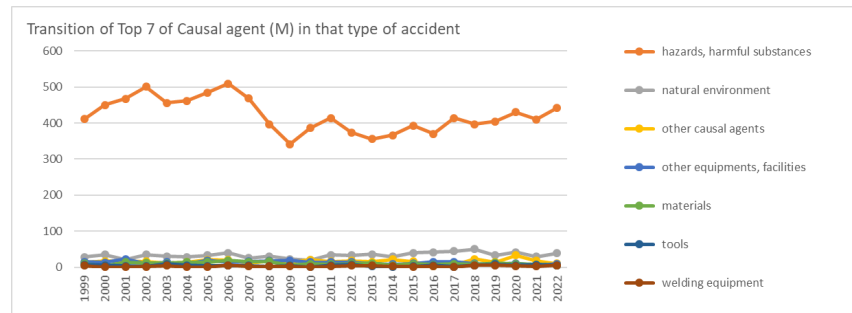


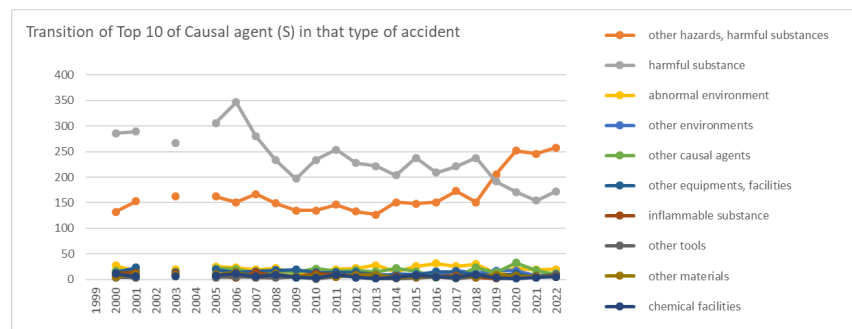
Transition of Causal agent (L, M, S) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022



Transition of Causal agent (L) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022



Transition of Causal agent (M) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022



Transition of Causal agent (S) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022

Transition of Causal agent (L) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022

Causal agent (L)	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
substance, material	421	455	481	513	467	476	499	528	483	413	347	395	422	384	367	372	402	377	423	405	416	439	417	448	10,350
environment	28	35	21	35	30	28	33	40	26	30	23	20	34	33	36	29	40	42	45	50	33	42	29	39	801
other equipment	45	39	41	28	47	42	40	38	37	39	41	30	36	35	21	21	24	32	32	35	31	25	23	29	811
others	14	17	18	17	14	17	21	20	14	19	14	23	16	20	15	23	16	4	7	24	16	37	18	14	418
machine	10	11	9	7	16	18	18	15	16	18	9	8	5	7	11	6	11	21	10	14	6	5	10	6	267
temporary buildings, establishments	1	6	3	4	5	5	3	9	3	3	4	2	4	1	5	6	4	3		3	11	1	9	5	100
crane, conveying machine	7	9	1	4	2	6	9	4	3	3	5	2	6		11	8	6	3	2	6	6	6	1	4	114
load				3	3	1		1	3	2	1	3		2	1	1	1	1	2		2	3	3		33
total	526	572	574	611	584	593	623	655	585	527	444	483	523	482	467	466	504	483	521	537	521	558	510	545	12,894

Transition of Causal agent (M) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022

Causal agent (M)	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
hazards, harmful substances	411	450	467	501	456	462	485	509	468	397	341	386	414	374	356	366	393	370	414	397	404	430	410	442	10,103

natural environment	28	35	21	35	30	28	33	40	26	30	23	20	34	33	36	29	40	42	45	50	33	42	29	39	801
other causal agents	13	17	18	16	12	14	21	20	12	18	13	21	16	18	15	22	16	4	6	23	14	33	18	10	390
other equipments, facilities	15	13	23	10	14	10	19	14	16	18	19	14	14	14	9	8	10	15	15	10	8	11	5	9	313
materials	10	5	14	12	11	14	14	19	15	16	6	9	8	10	11	6	9	7	9	8	12	9	7	6	247
tools	7	6	4	3	9	6	4	5	5	3	5	1	6	7	3	2	3	6	2	6	8	6	7	6	120
welding equipment	5	1	1	2	5	1	1	6	3	3	3	1	3	5	5	3	2	3	1	6	6	4	3	6	79
chemical facilities	8	11	6	8	6	13	8	11	6	9	4	3	9	4	2	4	8	5	4	9	3	2	4	5	152
temporary buildings, establishments	1	6	3	4	5	5	3	9	3	3	4	2	4	1	5	6	4	3		3	11	1	9	5	100
no causal agent				1	2	1			1	1	1	2		2		1			1		2	4		4	23
general machine	3	5	5	5	10	9	9	6	8	2	6	3	3	2	7	5	7	10	4	8	6	3	6	3	135
vehicle	2	1	1	1	2	4	4	2	2		2	1			7	7	3	1	1	2	3	4		3	53
human power machine, tools	3	3	1	1	2	3			1	1	3		1		1		1	1					1	3	26
engine	5				2	2	4	1	4	11	2	3	2	5	2		1	5	2	4		1	3	1	60
conveying	4	8		3		2	5	1	1	1	2	1	6		4	1	3	2	1	4	3	2	1	1	56

Transition of Causal agent (S) of fatal & non-fatal accident (contact to harmful substance) in 1999-2022

Causal agent (S)	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
other hazards, harmful substances		132	153		163		162	151	167	149	135	135	146	133	127	151	148	151	173	151	206	252	246	258	3,489
harmful substance		286	289		267		306	347	280	233	197	234	254	228	222	204	238	209	221	238	192	171	154	172	4,942
abnormal environment		27	16		19		25	23	19	22	12	14	20	22	28	15	26	31	26	30	12	21	19	20	447
other environments		7	3		7		6	15	4	7	6	5	13	9	5	11	9	7	17	12	17	17	7	11	195
other causal agents		17	18		12		21	20	12	18	13	21	16	18	15	22	16	4	6	23	14	33	18	10	347
other equipments, facilities		13	23		14		19	14	16	18	19	14	14	14	9	8	10	15	15	10	8	11	5	9	278
inflammable substance		12	13		12		8	3	14	7	5	11	9	7	3	6	6	5	8	4	2	4	4	8	151
other tools		4	4		9		4	5	4	3	5	1	5	7	2	2	3	6	2	5	8	5	7	6	97
other materials		5	10		9		10	14	6	11	5	7	5	9	9	3	5	5	5	5	9	7	6	5	150
chemical facilities		11	6		6		8	11	6	9	4	3	9	4	2	4	8	5	4	9	3	2	4	5	123
arc welding equipment		1			2		1	3	3	3	3	1	3	2	4	1	2	3	1	5	6	4	2	5	55
high/cold temperature environment		1	1		2		1		3		4	1	1	1	2	2	4	1	1	8	3	3	2	5	46

no causal agent				2				1	1	1	2		2		1		1		2	4		4	21	
standing tree				1		1								1		1	2					3	9	
other general power machines		5	4	9		9	5	7	2	5	3	3	2	6	3	6	7	4	6	5	1	4	2	98
inflammable gas		13	4	5		6	5	3	5	2	3	3	3	2			1	2	1	3	2	3	2	68
explosive substance		4	7	8		3	3	4	1	1	3	2	2	2	4	1	3	5	3	1	1	1	2	61
passage		1	3				3		2	1		1	1	2	1	2	1			6		1	2	27
building, establishment		3		1		2	3		1	1	1	1		3	1	2			2	2		1	2	26
other vehicles				1			1	1		2				1	3	1		1		1	3		2	17
hand tool		3	1	1				1	1	3						1	1					1	2	15
engine				2		4	1	4	11	2	3	2	5	2		1	5	2	4		1	3	1	53
metal material			2	1		3	4	2	2			2		1	2	2	2	3	1	1			1	29
cars, bus, motorcycle		1	1	1		3	1	1			1			6	4	2	1		2	2	1		1	28
working platform, boot board		1		1			1	1				2			2					1		2	1	12
grinding machine, buffing machine				1			1	2			1			2		1		1					1	10
forklift										1	1	4		1						1	1		1	10
other welding equipment			1	1			3							1		1			1			1	1	10

mixer, grinder							1							1			1					1	1	5	
human power hauling equipment					1								1										1	3	
chain saw																		1					1	2	
kiln, caldron		1	2		4		4	1		3	3	8	3	2		2			7	1		2		43	
truck		6					5	1			1		2		3	1	1	1	1	1	4	2	1	1	30
load					3				3	2	1	3		2	1	1	1	1	2		2	3	3	28	
other construction machines		2	3		2		2	3	1	2	1	1				1	1	3	3	1				26	
stone, sand, substance					2		1		1	6	2	1	2		1	1	1	2		2	2	1		25	
radiation		3	1		1					2	1			1		1		1	5				2	18	
other electrical equipment		1	1		2		1	1	1		2				1	1		1			4			16	
other temporary buildings, establishments		1			3		1		1		1					1		2		1	1	1	3	16	
other metal manufacturing machines					1		2	1	1	3							1	1					1	11	
water			1		1			2		1	1			1		1		1			1		1	11	
boiler			2		3		1		2											1		1		10	

