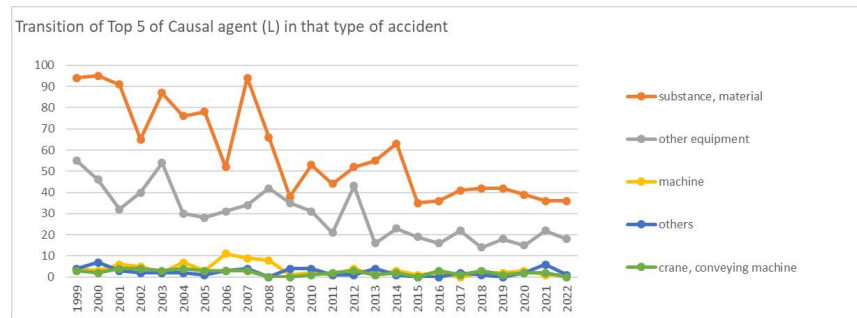
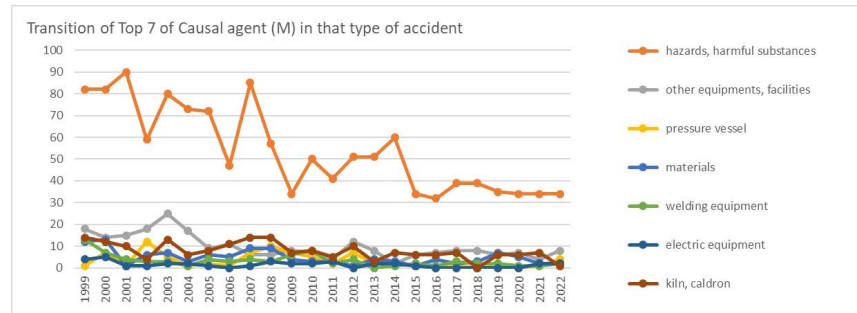


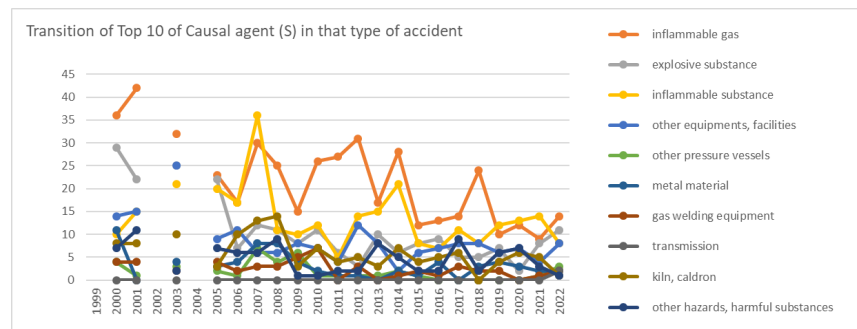
Transition of Causal agent (L, M, S) of fatal & non-fatal accident (explosion) in 1999-2022



Transition of Causal agent (L) of fatal & non-fatal accident (explosion) in 1999-2022



Transition of Causal agent (M) of fatal & non-fatal accident (explosion) in 1999-2022



Transition of Causal agent (S) of fatal & non-fatal accident (explosion) in 1999-2022

Transition of Causal agent (L) of fatal & non-fatal accident (explosion) 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	94	95	91	65	87	76	78	52	94	66	38	53	44	52	55	63	35	36	41	42	42	39	36	36	1,410
other equipment	55	46	32	40	54	30	28	31	34	42	35	31	21	43	16	23	19	16	22	14	18	15	22	18	705
machine	4	3	6	5	2	7	3	11	9	8	1	2	1	4	1	3	1	2		2	2	3	1	1	82
others	4	7	3	2	2	2	1	3	4		4	4	1	1	4	1			2	1		2	6	1	55
crane, conveying machine	3	2	4	4	3	4	3	3	3			1	2	3	1	2		3	1	3	1	2	2		50
load	3	1	2		2	1	3		1	3	1	1		1		1	1		1	1	2	2			27
temporary buildings, establishments		1		1	6	2	3		1		1	1		3	1			1		1	1		1		24
environment	2	1	1	2		1	2				1											1	2		13
total	165	156	139	119	156	123	121	100	146	119	81	93	69	107	78	93	56	58	67	64	66	64	70	56	2,366

Transition of Causal agent (M) of fatal & non-fatal accident (explosion) 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	82	82	90	59	80	73	72	47	85	57	34	50	41	51	51	60	34	32	39	39	35	34	34	34	1,295

other equipments, facilities	18	14	15	18	25	17	9	11	6	6	8	7	4	12	8	2	6	7	8	8	6	7	4	8	234
pressure vessel	1	7	1	12	5	1	2	1	7	10	7	5	2	7	2	2	1		1		1		1	4	80
materials	12	13	1	6	7	3	6	5	9	9	4	3	3	1	4	3	1	4	2	3	7	5	2	2	115
welding equipment	13	7	4	3	3	1	4	3	4	3	6	8	2	4		1	2	1	3	2	2	1	1	2	80
electric equipment	4	5	1	1	2	2	1		1	3	2	2	3		2	2	1						2	2	36
kiln, caldron	14	12	10	4	13	6	8	11	14	14	7	8	5	10	3	7	6	6	7		6	6	7	1	185
other causal agents	2	6	2		2	1	1	2	2		3	1			3				1				1	1	28
tools	1						1	1	1	1			2	1			1	1	2		1		2	1	16
metal manufacturing machine	2			2		2			1			1			1									1	10
chemical facilities	4	1	1	2	6	3	3	3	1	4	5	1	3	9	1	9	2	1	1	4	2	1	5		72
general machine	1	2	2	2	2	5	3	11	3	7	1	1	1	3	1	3		2		2	2	2	1		57
conveying machine	2		4	3	2	3	1	2	2			1	1	2		1		2		1		1	2		30
load	3	1	2		2	1	3		1	3	1	1		1		1	1		1	1	2	2			27
temporary buildings,		1		1	6	2	3		1		1	1		3	1			1		1	1		1		24

