

Supplementary Table S1. The input parameters and model estimations using Stoffenmanager version 8.2

No	Exposure situation	Substance	Percentage in the solution	CAS no.	MW	Vapour Pressure (pa) at 25°C	Temperature of the liquid in the process (°C)	Physical state	Type of task	PROC	Duration task (min)	Frequency task	Distance to the task (<1m)	More than 1 employee carrying out the same task?	Followed by a period of drying or curing?	PPE	Name of workplace	Volume of working room	Type of ventilation	Cleaned daily?	Maintenance monthly?	Control measures	Situated in a cabin?	Daily average concentration (mg/m³)	Daily average concentration (ppm)	50th Daily concentration (mg/m³)	50th Daily concentration (ppm)	90th Daily concentration (mg/m³)	90th Daily concentration (ppm)	95th Daily concentration (mg/m³)	95th Daily concentration (ppm)
1	a1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	Half mask/respirator with gas/vapour filter	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	620	157	198	0.46	1787	4.20	3346	785
2	a2_Inspection	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	015	0.01	015	0.01	043	0.10	081	0.19
3	b1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	120	2-3 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	4467	10.49	1979	4.65	179	42.02	335	7864
4	b2_Inspection	styrene	44%	100-42-5	104.15	853	24	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	015	0.01	015	0.01	043	0.10	081	0.19
5	c1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	60	2-3 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	4231	993	3749	8.80	338	79.35	634	14884
6	d1_FRP spraying	styrene	44%	100-42-5	104.15	853	23	Liquid	Handling of liquids (using low pressure but high speed) without creating a mist or spray	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	6700	15.73	1979	4.65	179	42.02	335	7864
7	e1_FRP spraying	styrene	33%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	60	2-3 days/ week	yes	yes	yes	Half mask/respirator with gas/vapour filter	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	363	0.85	322	0.76	2905	682	5441	1277
8	e2_Inspection	styrene	33%	100-42-5	104.15	853	24	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	009	0.02	008	0.02	071	0.17	132	0.31
9	f1_FRP spraying	styrene	40%	100-42-5	104.15	853	25	Liquid	Handling of liquids (using low pressure but high speed) without creating a mist or spray	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	12100	28.41	3564	8.37	322	75.59	603	14156
10	g1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids (using low pressure but high speed) without creating a mist or spray	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	LEV	Not in a cabin	6700	15.73	1979	4.65	179	42.02	335	7864
11	g2_Inspection	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	LEV	Not in a cabin	009	0.02	008	0.02	071	0.17	132	0.31
12	h1_FRP spraying	styrene	41%	100-42-5	104.15	853	23	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	12200	28.64	3611	8.48	326	76.53	611	14344
13	h2_Inspection	styrene	41%	100-42-5	104.15	853	23	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Ship	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	099	0.23	088	0.21	793	186	1486	349
14	i1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Liquid	Handling of liquids (using low pressure but high speed) without creating a mist or spray	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	12700	29.81	3749	8.80	338	79.35	634	14884
15	j1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids (using low pressure but high speed) without creating a mist or spray	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	6700	15.73	1979	4.65	179	42.02	335	7864
16	j2_Inspection	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Ship	>1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	054	0.13	048	0.11	435	1.02	814	191
17	k1_FRP spraying	styrene	38%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	120	4-5 days/ week	yes	yes	yes	no protection	Motor vehicle and parts	100-1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	8554	20.08	3790	8.90	342	8029	641	15048
18	L1_FRP spraying	styrene	35%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Motor vehicle and parts	<100 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	27700	6513	8168	19.17	737	17302	1381	32420
19	L2_Inspection	styrene	35%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Motor vehicle and parts	<100 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	029	0.07	026	0.06	234	0.55	438	1103
20	m1_FRP spraying	styrene	35%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Motor vehicle and parts	100-1000 m³	general ventilation (mechanical)	yes	yes	LEV	Not in a cabin	6484	15.22	1915	4.50	173	4061	324	7606
21	m2_Inspection	styrene	35%	100-42-5	104.15	853	24	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Motor vehicle and parts	100-1000 m³	general ventilation (mechanical)	yes	yes	LEV	Not in a cabin	086	0.20	076	0.18	69	1.62	1292	303
22	n1_FRP spraying	styrene	42%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Underground storage tank (UST)	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	12400	29.11	3658	8.59	330	7747	618	14508
23	n2_Inspection	styrene	42%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Underground storage tank (UST)	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	100	0.23	089	0.21	804	189	1505	353
24	o1_FRP spraying	styrene	40%	100-42-5	104.15	853	23	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	13200	30.99	3895	9.14	352	8263	658	15447
25	o2_Inspection	styrene	40%	100-42-5	104.15	853	23	Liquid	Handling of liquids in negligible amounts	PROC0:Other	120	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	035	0.08	016	0.04	140	0.33	263	602
26	p1_FRP spraying	styrene	33%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	11900	27.94	3517	8.26	317	7442	955	13968
27	q1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	no protection	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	13900	32.63	4097	9.62	370	8686	693	16249
28	r1_FRP spraying	styrene	33%	100-42-5	104.15	853	25	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	120	2-3 days/ week	yes	yes	yes	no protection	Underground storage tank (UST)	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	7264	17.05	3218	7.55	291	6831	544	12771
29	r2_Inspection	styrene	33%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Underground storage tank (UST)	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	088	0.21	078	0.18	707	1.66	1324	3111
30	s1_FRP spraying	styrene	38%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	120	4-5 days/ week	yes	yes	yes	Half mask/respirator with gas/vapour filter	Shade	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	783	184	347	0.81	3131	7.35	5864	1377
31	s2_Inspection	styrene	38%	100-42-5	104.15	853	24	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Shade	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	010	0.02	008	0.02	076	0.18	143	034
32	t1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	no protection	Shade	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	8461	19.86	3749	8.80	338	79.35	634	14884
33	t2_Inspection	styrene	44%	100-42-5	104.15	853	25	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	yes	yes	yes	no protection	Shade	>1000 m³	general ventilation (open windows and doors)	yes	yes	No control measures	Not in a cabin	103	0.24	091	0.21	824	1.93	1542	362
34	u1_FRP spraying	styrene	38%	100-42-5	104.15	853	23	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	60	2-3 days/ week	yes	yes	yes	no protection	Shade	>1000 m³	general ventilation (mechanical)	yes	yes	No control measures	Not in a cabin	3914	9.19	3469	8.14	313	7348	586	13757
35	v1_FRP spraying	styrene	33%	100-42-5	104.15	853	24	Liquid	Handling of liquids on large surfaces or large workpieces	PROC7:Industrial spraying	180	4-5 days/ week	yes	yes	yes	Half mask/respirator with gas/vapour filter	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	668	157	197	0.46	1781	4.18	3335	783
36	v2_Inspection	styrene	33%	100-42-5	104.15	853	24	Liquid	Handling of liquids in negligible amounts	PROC0:Other	60	2-3 days/ week	no	no	no	Half mask/respirator with gas/vapour filter	Underground storage tank (UST)	100-1000 m³	general ventilation (open windows and doors)	yes	yes	LEV	Not in a cabin	009	0.02	008	0.02	071	0.17	133	031

Supplementary Table S2. The input parameters and calculated exposure scores using a new semi-quantitative model

No	Exposure situation	Substance	Percentage in the solution	CAS no.	MW	Vapour Pressure (pa) at 25°C	Temperature of the liquid in the process (°C)	Name of workplace	Position factor (Pf)	Potential emission and handing of products (Ep)	Historical exposure (EH)	Type of process with tool cleaning, inspection, and maintenance (Em)	Ventilation and containment (nrgv)	Localized control measure (Lc)	Personal protective equipment (PPE)	Health hazard category (H)	Task duration (Th)	Task frequency (Tf)	Distance from the source (D)	Room volume (V)	Exposure score	Log-transformed exposure score	Exposure category
1	a1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Ship	2.0	3.0	2.0	2.0	1.2	2.0	2.0	4.0	2.0	3.0	2.0	10.0	553.0	6.32	3
2	a2_Inspection	styrene	44%	100-42-5	104.15	853	25	Ship	1.2	1.0	1.2	2.0	1.2	1.5	2.0	4.0	1.5	2.0	1.5	10.0	18.7	2.93	2
3	b1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Ship	2.0	3.0	3.0	2.0	1.2	2.0	5.0	4.0	2.0	2.0	2.0	10.0	1382.4	7.23	3
4	b2_Inspection	styrene	44%	100-42-5	104.15	853	24	Ship	1.2	1.0	1.2	2.0	1.2	1.5	5.0	4.0	1.5	2.0	1.5	10.0	46.7	3.84	2
5	c1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Ship	2.0	3.0	2.0	2.0	1.5	3.0	5.0	4.0	1.5	2.0	2.0	10.0	1296.0	7.17	3
6	d1_FRP spraying	styrene	44%	100-42-5	104.15	853	23	Ship	2.0	3.0	5.0	2.0	1.2	1.5	5.0	4.0	2.0	3.0	2.0	10.0	2592.0	7.86	3
7	e1_FRP spraying	styrene	33%	100-42-5	104.15	853	24	Ship	2.0	3.0	2.0	2.0	1.5	3.0	2.0	4.0	1.5	2.0	2.0	10.0	518.4	6.25	3
8	e2_Inspection	styrene	33%	100-42-5	104.15	853	24	Ship	1.2	1.0	1.2	2.0	1.5	3.0	2.0	4.0	1.5	2.0	1.5	10.0	46.7	3.84	2
9	f1_FRP spraying	styrene	40%	100-42-5	104.15	853	25	Ship	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	10.0	3110.4	8.04	3
10	g1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Ship	2.0	3.0	2.0	2.0	1.5	1.5	5.0	4.0	2.0	3.0	2.0	10.0	1296.0	7.17	3
11	g2_Inspection	styrene	44%	100-42-5	104.15	853	25	Ship	1.2	1.0	1.2	2.0	1.5	1.5	5.0	4.0	1.5	2.0	1.5	10.0	58.3	4.07	2
12	h1_FRP spraying	styrene	41%	100-42-5	104.15	853	23	Ship	2.0	3.0	5.0	2.0	1.5	3.0	5.0	4.0	2.0	3.0	2.0	10.0	6480.0	8.78	3
13	h2_Inspection	styrene	41%	100-42-5	104.15	853	23	Ship	1.2	1.0	1.2	2.0	1.5	3.0	5.0	4.0	1.5	2.0	1.5	10.0	116.6	4.76	2
14	i1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Ship	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	10.0	3110.4	8.04	3
15	j1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Ship	2.0	3.0	3.0	2.0	1.2	1.5	5.0	4.0	2.0	3.0	2.0	10.0	1555.2	7.35	3
16	j2_Inspection	styrene	44%	100-42-5	104.15	853	25	Ship	1.2	1.0	1.2	2.0	1.2	1.5	5.0	4.0	1.5	2.0	1.5	10.0	46.7	3.84	2
17	k1_FRP spraying	styrene	38%	100-42-5	104.15	853	24	Motor vehicle and parts	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	5.0	6220.8	8.74	3
18	L1_FRP spraying	styrene	35%	100-42-5	104.15	853	25	Motor vehicle and parts	2.0	3.0	5.0	1.5	1.2	3.0	5.0	4.0	2.0	3.0	2.0	1.0	38880.0	10.57	4
19	L2_Inspection	styrene	35%	100-42-5	104.15	853	25	Motor vehicle and parts	1.2	1.0	1.2	1.5	1.2	1.5	2.0	4.0	1.5	2.0	1.5	1.0	140.0	4.94	3
20	m1_FRP spraying	styrene	35%	100-42-5	104.15	853	24	Motor vehicle and parts	2.0	3.0	2.0	2.0	1.5	1.5	5.0	4.0	2.0	3.0	2.0	5.0	2592.0	7.86	3
21	m2_Inspection	styrene	35%	100-42-5	104.15	853	24	Motor vehicle and parts	1.2	1.0	1.2	2.0	1.5	1.5	5.0	4.0	1.5	2.0	1.5	5.0	116.6	4.76	2
22	n1_FRP spraying	styrene	42%	100-42-5	104.15	853	25	Underground storage tank (UST)	2.0	3.0	5.0	2.0	1.5	3.0	5.0	4.0	2.0	3.0	2.0	10.0	6480.0	8.78	3
23	n2_Inspection	styrene	42%	100-42-5	104.15	853	25	Underground storage tank (UST)	1.2	1.0	1.2	2.0	1.5	3.0	5.0	4.0	1.5	2.0	1.5	10.0	116.6	4.76	2
24	o1_FRP spraying	styrene	40%	100-42-5	104.15	853	23	Underground storage tank (UST)	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	5.0	6220.8	8.74	3
25	o2_Inspection	styrene	40%	100-42-5	104.15	853	23	Underground storage tank (UST)	1.2	1.0	1.2	2.0	1.2	3.0	2.0	4.0	2.0	2.0	1.5	5.0	99.5	4.60	2
26	p1_FRP spraying	styrene	33%	100-42-5	104.15	853	25	Underground storage tank (UST)	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	5.0	6220.8	8.74	3
27	q1_FRP spraying	styrene	44%	100-42-5	104.15	853	24	Underground storage tank (UST)	2.0	3.0	3.0	2.0	1.2	3.0	5.0	4.0	2.0	3.0	2.0	5.0	6220.8	8.74	3
28	r1_FRP spraying	styrene	33%	100-42-5	104.15	853	25	Underground storage tank (UST)	2.0	3.0	2.0	2.0	1.5	3.0	5.0	4.0	2.0	2.0	2.0	10.0	1728.0	7.45	3
29	r2_Inspection	styrene	33%	100-42-5	104.15	853	25	Underground storage tank (UST)	1.2	1.0	1.2	2.0	1.5	3.0	5.0	4.0	1.5	2.0	1.5	10.0	116.6	4.76	2
30	s1_FRP spraying	styrene	38%	100-42-5	104.15	853	24	Sluice	2.0	3.0	2.0	2.0	1.2	3.0	2.0	4.0	2.0	3.0	2.0	10.0	829.4	6.72	3
31	s2_Inspection	styrene	38%	100-42-5	104.15	853	24	Sluice	1.2	1.0	1.2	2.0	1.2	3.0	2.0	4.0	1.5	2.0	1.5	10.0	37.3	3.62	2
32	t1_FRP spraying	styrene	44%	100-42-5	104.15	853	25	Sluice	2.0	3.0	2.0	2.0	1.2	3.0	5.0	4.0	2.0	2.0	2.0	10.0	1382.4	7.23	3
33	t2_Inspection	styrene	44%	100-42-5	104.15	853	25	Sluice	1.2	1.0	1.2	2.0	1.2	3.0	5.0	4.0	1.5	2.0	1.5	10.0	93.3	4.54	2
34	u1_FRP spraying	styrene	38%	100-42-5	104.15	853	23	Sluice	2.0	3.0	2.0	2.0	1.5	3.0	5.0	4.0	1.5	2.0	2.0	10.0	1296.0	7.17	3
35	v1_FRP spraying	styrene	37%	100-42-5	104.15	853	24	Underground storage tank (UST)	2.0	3.0	5.0	2.0	1.2	2.0	2.0	4.0	2.0	3.0	2.0	5.0	2764.8	7.92	3
36	v2_Inspection	styrene	37%	100-42-5	104.15	853	24	Underground storage tank (UST)	1.2	1.0	1.2	2.0	1.2	1.5	2.0	4.0	1.5	2.0	1.5	5.0	37.3	3.62	2