Table S1. Representative processes in eco invent v3.8.

Process in concentrated latex manufacture	Representative process in eco invent v3.8
Diammonium phosphate or Diammonium hydrogen phosphate	Diammonium phosphate {RoW}| market for diammonium phosphate | APOS, U
Zinc oxide	Zinc oxide {GLO}| market for | APOS, U
Ammonia	Ammonia, anhydrous, liquid {RoW}| market for ammonia, anhydrous, liquid | APOS, U
Sulfuric acid	Sulfuric acid {RoW}| market for sulfuric acid | APOS, U
Lauric acid	Fatty acid {GLO}| market for | APOS, U
Water supply	Water pump operation, electric {RoW}| water pump operation, electric | APOS, U Converted the amount of water supplied (in kg) to energy by multiplying energy consumption per 1 kg of water (from our previous publications [1,2]) by the water amount consumed in each factory.
Electricity	Electricity, medium voltage {LK}| market for electricity, medium voltage | APOS, U
Wastewater treatment	Wastewater, average {RoW}| treatment of, capacity 1.1E10l/year | APOS, U
Transportation of latex	Transport, freight, lorry 3.5-7.5 metric ton, euro3 {RoW}| market for transport, freight, lorry 3.5-7.5 metric ton, EURO3 | APOS, U
Inverter Installation	Electronics, for control units {GLO}| market for | APOS, U (this dataset is based on 1 kg of control unit; the weight of 8kg inverter unit was considered for embodied emission calculations after consulting electricity superintendent from Ceylon Electricity Board)
Solar panel installation	Photovoltaic flat-roof installation, 3kWp, multi-Si, on roof {GLO}| market for | APOS, U (This dataset caters to a 3kWp system; hence we calculated the embodied emissions (x) of the solar system of each factory (a) proportional to its and dataset`s capacity (3), i.e. x = data set emissions/3 x a)

Table S2. Emission inventory of some selected pollutants per 1 tonne of concentrated latex. ZnO, and DAHP refer to Tetramethyl thiuram disulfide, Zinc oxide.

Environmental impact/pollutants	Unit	Total	DAHP	ZnO	Ammonia	Sulfuric acid	Lauric acid	Transportation	Water	Electricity	Wastewater treatment
Abiotic depletion											
Tellurium	mg	62.12	12.44	0.12	1.40	37.65	0.23	7.67	0.20	1.45	0.96
Silver	mg	215.04	32.31	0.29	2.87	99.88	0.74	75.40	0.19	1.84	1.51
Copper	g	181.76	35.77	0.36	6.01	105.80	0.74	24.93	0.62	4.46	3.08
Gold	mg	4.50	0.62	0.02	0.26	1.04	0.04	2.42	0.00	0.04	0.06
Lead	g	35.48	6.11	0.03	0.25	19.97	0.15	8.43	0.01	0.25	0.28
Zinc	g	159.82	27.85	0.13	1.13	90.89	0.70	36.67	0.06	1.12	1.27
Abiotic depletion (fossil fuels)											
Oil, crude	kg	42.57	0.50	0.01	0.30	0.41	0.06	33.80	0.02	7.18	0.28
Coal, hard	kg	35.04	1.35	0.05	4.47	0.58	0.11	8.99	0.08	18.66	0.76
Gas, natural	m3	10.89	1.66	0.07	4.20	0.71	0.06	3.42	0.09	0.39	0.28
Global warming (GWP100a)											
CO2	kg	218.41	7.84	0.29	19.57	2.93	3.50	119.53	0.46	60.82	3.47
CH4	g	219.90	18.50	0.81	48.04	7.76	1.24	109.88	0.84	25.68	7.16
N2O	g	6.69	0.18	0.01	0.18	0.17	0.96	1.68	0.02	2.35	1.14
Ozone layer depletion											
Halon 1301	mg	2.09	0.03	0.00	0.02	0.02	0.00	1.65	0.00	0.35	0.01
Halon 1211	扌g	115.43	38.50	2.13	27.89	3.43	2.09	33.41	1.58	2.19	4.21
CFC-10	扌g	312.76	24.61	0.74	7.49	40.54	9.02	111.85	0.59	30.38	87.54
HCFC-22	mg	2.89	0.20	0.01	0.18	0.06	0.02	2.09	0.01	0.11	0.21

Human Toxicity											
Thallium	mg	365.81	65.10	0.78	10.53	187.97	1.57	56.37	1.28	35.75	6.47
Nickel	mg	440.35	54.58	0.60	13.49	152.13	1.59	112.45	1.07	98.86	5.58
Nitrogen oxides	kg	1.01	0.02	0.00	0.03	0.02	0.00	0.71	0.00	0.21	0.02
Sulfur dioxide	g	801.35	58.48	0.71	33.71	137.16	2.13	185.84	1.60	364.23	17.50
Ammonia	g	12.06	1.69	0.02	0.43	1.09	1.59	2.50	0.02	0.97	3.76
Particulates, < 2.5 um	g	93.14	4.90	0.20	3.22	3.63	1.90	52.49	0.79	22.21	3.79
Photochemical oxidation											
SO2	g	801.35	58.48	0.71	33.71	137.16	2.13	185.84	1.60	364.23	17.50
CO	g	287.47	9.85	0.41	11.59	6.25	1.40	231.13	0.29	16.54	10.00
CH4	g	219.90	18.50	0.81	48.04	7.76	1.24	109.88	0.84	25.68	7.16
NOx	kg	1.01	0.02	0.00	0.03	0.02	0.00	0.71	0.00	0.21	0.02
NMVOC	g	120.96	3.35	0.15	5.14	3.06	0.38	99.06	0.14	7.63	2.06
Acidification											
SO2	g	726.68	58.48	0.71	33.71	137.16	2.13	185.84	1.60	364.23	17.50
NOx	kg	1.01	0.02	0.00	0.03	0.02	0.00	0.71	0.00	0.21	0.02
NH3	g	12.06	1.69	0.02	0.43	1.09	1.59	2.50	0.02	0.97	3.76
Eutrophication											
Phosphate	g	185.09	23.82	0.30	14.45	17.58	0.57	36.98	0.93	57.37	33.09
Nitrogen oxides	kg	1.01	0.02	0.00	0.03	0.02	0.00	0.71	0.00	0.21	0.02
Nitrate	g	576.50	2.75	0.11	4.44	1.64	51.57	12.72	0.28	17.95	485.05
Ammonium, ion	g	111.69	0.13	0.00	0.12	0.13	0.08	0.73	0.00	0.14	110.37
COD	kg	1.28	0.02	0.00	0.02	0.02	0.01	0.44	0.00	0.40	0.36

Table S3. Impact assessment results per processing 1 tonne of concentrated latex.

Impact category	Unit	Diammoniam phosphate	Zinc oxide	Ammonia	Sulfuric acid	Lauric acid	Water supply	Electricity	Waste water treatment	Transportation of field latex	Total Impact
Abiotic depletion	kg Sb eq	7.208×10^{-4}	7.585×10^{-6}	9.078×10^{-5}	2.125×10^{-3}	1.644×10^{-5}	1.041×10^{-5}	7.603×10^{-5}	5.775×10^{-5}	6.621×10^{-4}	3.767×10^{-3}
Abiotic depletion (fossil fuels)	MJ	1.054×10^{2}	4.235	2.409×10^{2}	5.452×10^{1}	7.028	6.171	6.696×10^{2}	3.821×10^{1}	1.755×10^{3}	2.818×10^{3}
Global warming (GWP100a)	kg CO_2 eq	8.426	3.189×10^{-1}	2.097×10^{1}	3.220	3.804	4.939×10^{1}	6.257×10^{1}	4.131	1.232×10^{2}	2.271×10^{2}
Ozone layer depletion	kg CFC-11 eq	6.570×10^{-7}	2.639×10^{-8}	4.414×10^{-7}	3.015×10^{-7}	6.031×10^{-8}	2.687×10^{-8}	4.341×10^{-6}	2.441×10^{-7}	2.027×10^{-5}	2.637×10^{-5}
Human Toxicity	kg 1,4-DB eq	2.396×10^{1}	4.157×10^{-1}	7.482	6.067×10^{1}	1.031	7.247×10^{-1}	3.050×10^{1}	7.946	4.874×10^{1}	1.815×10^{2}
Photochemical oxidation	kg C_2H_4 eq	3.641×10^{-3}	6.119×10^{-5}	2.663×10^{-3}	6.895×10^{-3}	1.864×10^{-3}	9.144×10^{-5}	1.008×10^{-2}	1.927×10^{-3}	1.904×10^{-2}	5.472×10^{-2}
Acidification	kg SO_2 eq	8.455×10^{-2}	1.257×10^{-3}	5.460×10^{-2}	1.786×10^{-1}	6.786×10^{-3}	2.445×10^{-3}	5.429×10^{-1}	3.546-$\times10^{-2}$	5.841×10^{-1}	1.491
Eutrophication	kg PO	2.865×10^{-2}	4.468×10^{-4}	1.918×10^{-2}	2.119×10^{-2}	7.909×10^{-3}	1.117×10^{-3}	9.63×10^{-2}	1.326×10^{-1}	1.427×10^{-1}	4.501×10^{-1}

	43- eq

References

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