

Supplementary table 1: transport assumptions

Country of origin	Airport	Assumed distance for air freight to London Gatwick Airport (km)	Port	Assumed distance for shipping to London Gateway Port (km)
China	Beijing International	7903	Shanghai	19303
Egypt	Cairo International	3503	Damietta	5952
France	Charles de Gaulle	310	Le Harve	347
Germany	Frankfurt	630	Hamburg	739
Malaysia	Kuala Lumpur International	10603	Port Klang	15026
Mexico	Mexico City International	8944	Lázaro Cárdenas	11868
Thailand	Suvarnabhumi International	9579	Bangkok	16950

Assumed airports, ports, and distances to the UK. We included 160km of travel by road via heavy goods vehicles both within the country of origin and in the UK, with an additional 8km either end of each journey via courier.

Supplementary table 2: Life cycle inventory processes chosen for PPE

Material	Process Name
Aluminium	Sheet rolling, aluminium {GLO} market for Cut-off, U
Anionic surfactant	Anionic resin {RoW} market for anionic resin Cut-off, U
Box board	Folding boxboard/chipboard {GLO} market for Cut-off, U
Corrugated cardboard	Corrugated board box {RoW} market for corrugated board box Cut-off, U
LDPE film	Packaging film, low density polyethylene {GLO} market for Cut-off, U
Melt-blown polypropylene	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off, U
Non-woven polypropylene	
Nonionic surfactant	Non-ionic surfactant {GLO} market for non-ionic surfactant Cut-off, U
Paper	Kraft paper, bleached {GLO} market for Cut-off, U
Polyester microfibre	Textile, non-woven polyester {GLO} market for textile, non woven polyester Cut-off, U
Polypropylene, injection moulded	Polypropylene, granulate {GLO} market for Cut-off, U
Polypropylene, oriented film	
Polyurethane foam	Polyurethane, flexible foam {RoW} market for polyurethane, flexible foam Cut-off, U
Quaternary ammonium compounds and polymeric biguanide hydrochloride	Ammonia, liquid {RoW} market for Cut-off, U
Sodium hydroxide	Sodium hydroxide, without water, in 50% solution state {GLO} market for Cut-off, U
Sodium hypochlorite	Sodium hypochlorite, without water, in 15% solution state {RoW} market for sodium hypochlorite, without water, in 15% solution state Cut-off, U
Steel	Wire drawing, steel {GLO} market for Cut-off, U
Synthetic rubber	Synthetic rubber {GLO} market for Cut-off, U
Tissue paper	Tissue paper {GLO} market for Cut-off, U
Electricity	Process Name
Electricity (China)	Electricity, medium voltage {CN} market group for Cut-off, U
Electricity (France)	Electricity, medium voltage {FR} market for Cut-off, U
Electricity (UK)	Electricity, medium voltage {GB} market for Cut-off, U
Electricity (Malaysian)	Electricity, medium voltage {MY} market for Cut-off, U

Transportation	Process Name
Air freight	Transport, freight, aircraft, long haul {GLO} market for transport, freight, aircraft, long haul Cut-off, U
Courier	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U
Heavy goods vehicle	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U
Shipping container	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U
Waste	Process Name
Hazardous incineration	Hazardous waste, for incineration {Europe without Switzerland} treatment of hazardous waste, hazardous waste incineration Cut-off, U

Processes selected for PPE LCA. Ecoinvent (version 3.6)- allocation, cut-off by classification- unit library was selected for all processes.

Supplementary table 3: linen laundering assumptions

Input		Source	Quantity used per kg of dry linen
Detergent	Anionic surfactant	Carre ¹	0.54 g
	Nonionic surfactant		1.8 g
	Sodium hydroxide		1.92 g
	Sodium hypochlorite		1.1 g
Electricity		Vozzola et al. ²	0.28 kWh
Natural gas			1.59 kWh
Transport via heavy goods vehicle		Assumed	160 kg.km
Water	Supply	Vozzola et al. ²	0.01100 m ³
	Treatment		0.01097 m ³

kWh= kilowatt hours, m³= meters cubed, kg.km= kilogram kilometres.

1. Carre A. Life cycle assessment comparing laundered surgical gowns with polypropylene based disposable gowns. Melbourne, Australia: RMIT University; 2008.

2. Vozzola E, Overcash M, Griffing E. Environmental considerations in the selection of isolation gowns: A life cycle assessment of reusable and disposable alternatives. Am J Infect Control. 2018;46(8):881-6.

Supplementary table 4: Environmental impact of one apron

Impact category	Unit	Total	Packaging film, low density polyethylene {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Packaging film, low density polyethylene {GLO} market for Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	Electricity, medium voltage {TH} market for Cut-off, U	PPE clinical waste
Global warming	kg CO ₂ e	0.065280133	0.031777301	0.000245003	0.000102487	0.0018351	0.000608815	0.000441633	0.004535052	0.000390236	0.02534449
Stratospheric ozone depletion	kg CFC11 eq	2.03E-08	8.06196E-09	2.44109E-10	2.60011E-11	1.29E-09	3.67556E-10	2.06736E-10	9.66461E-10	1.15915E-10	9.01E-09
Ionizing radiation	kBq Co-60 eq	0.00251773	0.002001859	7.30242E-06	6.4563E-06	1.91E-05	1.88829E-05	8.62711E-06	6.95485E-05	8.5941E-07	0.000385128
Ozone formation, Human health	kg NO _x eq	0.000156504	7.67665E-05	7.65766E-07	2.47584E-07	3.82E-05	2.7308E-06	2.39737E-06	1.25632E-05	5.3224E-07	2.23E-05
Fine particulate matter formation	kg PM2.5 eq	8.14E-05	4.2836E-05	4.02437E-07	1.38153E-07	1.22E-05	9.71347E-07	6.43614E-07	6.92792E-06	3.16651E-07	1.70E-05
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.000163703	8.30787E-05	7.81684E-07	2.67941E-07	3.84E-05	2.81687E-06	2.44532E-06	1.25898E-05	5.42528E-07	2.27E-05
Terrestrial acidification	kg SO ₂ eq	0.000196905	9.40803E-05	8.65169E-07	3.03423E-07	3.79E-05	2.11228E-06	1.48405E-06	1.54635E-05	8.33185E-07	4.39E-05
Freshwater eutrophication	kg P eq	1.91E-05	8.88645E-06	9.74318E-08	2.86602E-08	7.22E-08	1.12707E-07	4.05883E-08	8.27533E-07	2.40319E-07	8.84E-06
Marine eutrophication	kg N eq	1.75E-06	1.08866E-06	5.53837E-08	3.5111E-09	6.93E-09	6.79274E-09	3.2385E-09	5.35525E-08	1.57581E-08	5.12E-07
Terrestrial ecotoxicity	kg 1,4-DCB	0.1159339	0.065167219	0.001024047	0.000210174	0.004892366	0.00400804	0.008440728	0.002995972	0.000201959	0.028993398
Freshwater ecotoxicity	kg 1,4-DCB	0.001721327	0.001011849	1.08516E-05	3.26337E-06	1.97E-05	5.91267E-05	1.03475E-05	6.96628E-05	1.01443E-05	0.000526426
Marine ecotoxicity	kg 1,4-DCB	0.002293897	0.001332203	1.42195E-05	4.29656E-06	2.81E-05	7.82752E-05	1.80408E-05	9.21552E-05	1.35003E-05	0.000713144
Human carcinogenic toxicity	kg 1,4-DCB	0.003935434	0.000986104	7.26716E-06	3.18034E-06	4.14E-05	2.72105E-05	1.01608E-05	0.000127373	1.41123E-05	0.002718647
Human non-carcinogenic toxicity	kg 1,4-DCB	0.039912556	0.021923231	0.000264608	7.07058E-05	0.000327085	0.00119536	0.000340164	0.002145158	0.000295157	0.013351086
Land use	m ² a crop eq	0.001441517	0.001038614	0.000109955	3.34969E-06	6.52E-06	1.64576E-05	2.41682E-05	5.43358E-05	1.37524E-06	1.87E-04

Mineral resource scarcity	kg Cu eq	0.000100139	6.58362E-05	7.16812E-07	2.12332E-07	4.63E-06	2.90321E-06	1.65254E-06	1.88885E-06	2.70822E-07	2.20E-05
Fossil resource scarcity	kg oil eq	0.022970775	0.018777169	6.9035E-05	6.05592E-05	0.00054157	0.000198108	0.000152517	0.000880587	0.000114521	0.002176709
Water consumption	m ³	0.000648351	0.000541592	2.92374E-06	1.74672E-06	1.22E-06	1.49607E-06	8.13631E-07	1.11521E-05	1.57455E-06	8.58E-05

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one apron (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 5: Environmental impact of one face shield

Impact category	Unit	Total	Packaging film, low density polyethylene {GLO} market for Cut-off, U	Polyurethane, flexible foam {RoW} market for polyurethane, flexible foam Cut-off, U	Synthetic rubber {GLO} market for Cut-off, U	Packaging film, low density polyethylene {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	PPE clinical waste
Global warming	kg CO ₂ e	0.231369	0.059719	0.030962	0.013935	0.02733	0.002291	0.001757	0.002422	0.007402	0.011212	0.074337
Stratospheric ozone depletion	kg CFC11 eq	7.22E-08	1.52E-08	2.66E-09	8.88E-09	6.93E-09	2.28E-09	8.23E-10	1.46E-09	5.19E-09	2.39E-09	2.64E-08
Ionizing radiation	kBq Co-60 eq	0.008239	0.003762	0.000101	0.001098	0.001722	6.83E-05	3.43E-05	7.51E-05	7.69E-05	0.000172	0.00113
Ozone formation, Human health	kg NO _x eq	0.00059	0.000144	6.54E-05	3.64E-05	6.60E-05	7.16E-06	9.54E-06	1.09E-05	0.000154	3.11E-05	6.55E-05
Fine particulate matter formation	kg PM2.5 eq	0.000309	8.05E-05	4.03E-05	2.48E-05	3.68E-05	3.76E-06	2.56E-06	3.86E-06	4.92E-05	1.71E-05	4.97E-05
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.000616	0.000156	6.82E-05	3.95E-05	7.15E-05	7.31E-06	9.73E-06	1.12E-05	0.000155	3.11E-05	6.67E-05
Terrestrial acidification	kg SO ₂ eq	0.000757	0.000177	0.000103	5.39E-05	8.09E-05	8.09E-06	5.90E-06	8.40E-06	0.000153	3.82E-05	1.29E-04
Freshwater eutrophication	kg P eq	6.16E-05	1.67E-05	3.06E-06	4.39E-06	7.64E-06	9.11E-07	1.61E-07	4.48E-07	2.91E-07	2.05E-06	2.59E-05

Marine eutrophication	kg N eq	1.12E-05	2.05E-06	5.71E-06	3.18E-07	9.36E-07	5.18E-07	1.29E-08	2.70E-08	2.80E-08	1.32E-07	1.50E-06
Terrestrial ecotoxicity	kg 1,4-DCB	0.431942	0.122469	0.030581	0.051558	0.056046	0.009578	0.033584	0.015947	0.019733	0.007407	0.085039
Freshwater ecotoxicity	kg 1,4-DCB	0.006321	0.001902	0.000513	0.000863	0.00087	0.000101	4.12E-05	0.000235	7.93E-05	0.000172	0.001544
Marine ecotoxicity	kg 1,4-DCB	0.008418	0.002504	0.000678	0.001142	0.001146	0.000133	7.18E-05	0.000311	0.000113	0.000228	0.002092
Human carcinogenic toxicity	kg 1,4-DCB	0.012861	0.001853	0.000937	0.000551	0.000848	6.80E-05	4.04E-05	0.000108	0.000167	0.000315	0.007974
Human non-carcinogenic toxicity	kg 1,4-DCB	0.14318	0.041201	0.009599	0.019159	0.018855	0.002475	0.001353	0.004756	0.001319	0.005304	0.03916
Land use	m ² a crop eq	0.005291	0.001952	8.99E-05	0.000457	0.000893	0.001028	9.62E-05	6.55E-05	2.63E-05	0.000134	0.000548
Mineral resource scarcity	kg Cu eq	0.000738	0.000124	2.56E-05	0.000419	5.66E-05	6.70E-06	6.58E-06	1.16E-05	1.87E-05	4.67E-06	6.46E-05
Fossil resource scarcity	kg oil eq	0.083638	0.035288	0.01082	0.008594	0.016149	0.000646	0.000607	0.000788	0.002184	0.002177	0.006384
Water consumption	m ³	0.002692	0.001018	0.000662	0.000225	0.000466	2.73E-05	3.24E-06	5.95E-06	4.93E-06	2.76E-05	2.52E-04

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one face shield (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 6: Environmental impact of one cup fit FFP respirator

Impact category	Unit	Total	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off, U	Polypropylene, granulate {GLO} market for Cut-off, U	Polyurethane, flexible foam {RoW} market for polyurethane, flexible foam Cut-off, U	Synthetic rubber {GLO} market for Cut-off, U	Sheet rolling, aluminium {GLO} market for Cut-off, U	Wire drawing, steel {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Folding boxboard/chipboard {GLO} market for Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Electricity, medium voltage {FR} market for Cut-off, U	Electricity, medium voltage {GB} market for Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	PPE clinical waste
Global warming	kg CO _{2e}	0.125163	0.026924	0.008633	0.014457	0.007179	0.000741	0.000109	0.001956	0.00645	0.002428	0.001589	0.001153	0.000167	0.000722	0.002023	0.049969
Stratospheric ozone depletion	kg CFC11 eq	4.26E-08	7.69E-09	1.54E-09	1.24E-09	4.58E-09	2.58E-10	3.96E-11	1.95E-09	3.21E-09	1.70E-09	9.60E-10	5.40E-10	2.31E-10	3.71E-10	4.31E-10	1.78E-08
Ionizing radiation	kBq Co-60 eq	0.005289	0.001537	0.000173	4.71E-05	0.000566	5.52E-05	3.88E-06	5.83E-05	0.000453	2.52E-05	4.93E-05	2.25E-05	0.00108	4.16E-04	3.10E-05	0.000759
Ozone formation, Human health	kg NO _x eq	0.000273	6.38E-05	1.78E-05	3.05E-05	1.88E-05	1.68E-06	1.95E-07	6.11E-06	1.75E-05	5.05E-05	7.13E-06	6.26E-06	3.08E-07	1.26E-06	5.60E-06	4.40E-05
Fine particulate matter formation	kg PM _{2.5} eq	0.000152	3.58E-05	9.03E-06	1.88E-05	1.28E-05	1.41E-06	1.67E-07	3.21E-06	1.23E-05	1.61E-05	2.54E-06	1.68E-06	1.94E-07	5.85E-07	3.09E-06	3.34E-05
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.000282	6.69E-05	1.89E-05	3.18E-05	2.04E-05	1.76E-06	2.04E-07	6.24E-06	1.78E-05	5.09E-05	7.35E-06	6.38E-06	3.14E-07	1.27E-06	5.62E-06	4.48E-05
Terrestrial acidification	kg SO ₂ eq	0.000372	8.07E-05	2.34E-05	4.80E-05	2.78E-05	2.48E-06	2.88E-07	6.91E-06	2.59E-05	5.01E-05	5.51E-06	3.87E-06	4.63E-07	1.70E-06	6.90E-06	8.65E-05
Freshwater eutrophication	kg P eq	3.45E-05	7.24E-06	1.54E-06	1.43E-06	2.26E-06	2.90E-07	5.77E-08	7.78E-07	2.26E-06	9.55E-08	2.94E-07	1.06E-07	4.99E-08	1.52E-07	3.69E-07	1.74E-05
Marine eutrophication	kg N eq	5.64E-06	6.55E-07	1.27E-07	2.67E-06	1.64E-07	2.44E-08	8.03E-09	4.42E-07	4.34E-07	9.17E-09	1.77E-08	8.45E-09	2.26E-08	1.71E-08	2.39E-08	1.01E-06
Terrestrial ecotoxicity	kg 1,4-DCB	0.246403	0.062767	0.016589	0.014279	0.02656	0.000851	0.000197	0.008177	0.016734	0.006473	0.010463	0.022035	0.000719	0.000786	0.001336	0.057163
Freshwater ecotoxicity	kg 1,4-DCB	0.003614	0.00105	0.000253	0.000239	0.000445	3.35E-05	5.57E-06	8.67E-05	0.000172	2.60E-05	0.000154	2.70E-05	1.47E-05	1.91E-05	3.11E-05	0.001038

Marine ecotoxicity	kg 1,4-DCB	0.004795	0.001362	0.00033	0.000316	0.000588	4.33E-05	7.49E-06	0.000114	0.000229	3.71E-05	0.000204	4.71E-05	1.86E-05	2.60E-05	4.11E-05	0.001406
Human carcinogenic toxicity	kg 1,4-DCB	0.007786	0.000835	0.000226	0.000437	0.000284	5.48E-05	8.37E-05	5.80E-05	0.000196	5.48E-05	7.10E-05	2.65E-05	7.94E-06	1.70E-05	5.68E-05	0.00536
Human non-carcinogenic toxicity	kg 1,4-DCB	0.078678	0.018525	0.00476	0.004482	0.00987	0.000636	0.000133	0.002113	0.005382	0.000433	0.00312	0.000888	0.00026	0.00043	0.000957	0.026323
Land use	m ² a crop eq	0.004457	0.000319	6.93E-05	4.20E-05	0.000236	9.44E-06	4.17E-06	0.000878	0.0023	8.63E-06	4.30E-05	6.31E-05	7.47E-06	8.00E-05	2.42E-05	0.000368
Mineral resource scarcity	kg Cu eq	0.000414	7.23E-05	2.11E-05	1.20E-05	0.000216	2.80E-06	2.47E-06	5.72E-06	1.50E-05	6.13E-06	7.58E-06	4.31E-06	1.40E-06	9.11E-07	8.42E-07	4.34E-05
Fossil resource scarcity	kg oil eq	0.042231	0.016966	0.006246	0.005052	0.004427	0.00019	2.03E-05	0.000551	0.001693	0.000717	0.000517	0.000398	4.65E-05	0.000244	0.000393	0.004292
Water consumption	m ³	0.00107	0.000257	7.53E-05	0.000309	0.000116	5.75E-06	5.17E-06	2.33E-05	8.05E-05	1.62E-06	3.91E-06	2.12E-06	6.38E-06	3.16E-06	4.97E-06	1.69E-04

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one cup fit respirator (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, FFP= filtering facepiece, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 7: Environmental impact of one duckbill FFP respirator

Impact category	Unit	Total	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off; U	Synthetic rubber {GLO} market for Cut-off; U	Polyurethane, flexible foam {RoW} market for polyurethane, flexible foam Cut-off; U	Wire drawing, steel {GLO} market for Cut-off; U	Corrugated board box {RoW} market for corrugated board box Cut-off; U	Folding boxboard/chipboard {GLO} market for Cut-off; U	Packaging film, low density polyethylene {GLO} market for Cut-off; U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off; U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off; U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off; U	Electricity, medium voltage {CN} market group for Cut-off; U	Electricity, medium voltage {FR} market for Cut-off; U	Electricity, medium voltage {GB} market for Cut-off; U	PPE clinical waste
Global warming	kg CO ₂ e	0.07635	0.024853	0.002168	0.004838	0.000163	0.001956	0.006445	0.004029	0.00172	0.001126	0.000817	1.08E-03	8.93E-05	0.000386	0.026681
Stratospheric ozone depletion	kg CFC11 eq	2.74E-08	7.10E-09	1.38E-09	4.15E-10	5.94E-11	1.95E-09	3.21E-09	1.02E-09	1.21E-09	6.80E-10	3.82E-10	2.30E-10	1.23E-10	1.98E-10	9.48E-09
Ionizing radiation	kBq Co-60 eq	0.003665	0.001419	0.000171	1.58E-05	5.82E-06	5.83E-05	0.000452	2.54E-04	1.79E-05	3.49E-05	1.60E-05	1.66E-05	0.000577	0.000222	0.000405
Ozone formation, Human health	kg NO _x eq	0.000181	5.89E-05	5.66E-06	1.02E-05	2.93E-07	6.11E-06	1.75E-05	9.73E-06	3.58E-05	5.05E-06	4.43E-06	2.99E-06	1.64E-07	6.74E-07	2.35E-05
Fine particulate matter formation	kg PM2.5 eq	9.88E-05	3.31E-05	3.86E-06	6.29E-06	2.50E-07	3.21E-06	1.23E-05	5.43E-06	1.14E-05	1.80E-06	1.19E-06	1.65E-06	1.03E-07	3.13E-07	1.78E-05
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.000187	6.18E-05	6.14E-06	1.07E-05	3.06E-07	6.24E-06	1.77E-05	1.05E-05	3.60E-05	5.21E-06	4.52E-06	3.00E-06	1.67E-07	6.81E-07	2.39E-05
Terrestrial acidification	kg SO ₂ eq	0.000237	7.45E-05	8.38E-06	1.61E-05	4.33E-07	6.91E-06	2.58E-05	1.19E-05	3.55E-05	3.91E-06	2.74E-06	3.68E-06	2.47E-07	9.09E-07	4.62E-05
Freshwater eutrophication	kg P eq	2.21E-05	6.68E-06	6.83E-07	4.78E-07	8.65E-08	7.78E-07	2.26E-06	1.13E-06	6.76E-08	2.08E-07	7.51E-08	1.97E-07	2.66E-08	8.11E-08	9.31E-06
Marine eutrophication	kg N eq	3.17E-06	6.05E-07	4.95E-08	8.93E-07	1.21E-08	4.42E-07	4.33E-07	1.38E-07	6.50E-09	1.26E-08	5.99E-09	1.28E-08	1.21E-08	9.14E-09	5.39E-07
Terrestrial ecotoxicity	kg 1,4-DCB	0.16384	0.057939	0.00802	0.004778	0.000296	0.008177	0.016719	0.008262	0.004586	0.007413	0.015611	0.000713	0.000384	0.00042	0.030522
Freshwater ecotoxicity	kg 1,4-DCB	0.002314	0.000969	0.000134	8.01E-05	8.36E-06	8.67E-05	0.000171	1.28E-04	1.84E-05	0.000109	1.91E-05	1.66E-05	7.84E-06	1.02E-05	0.000554
Marine ecotoxicity	kg 1,4-DCB	0.003064	0.001257	0.000178	0.000106	1.12E-05	0.000114	0.000229	0.000169	2.63E-05	0.000145	3.34E-05	2.19E-05	9.94E-06	1.39E-05	0.000751
Human carcinogenic toxicity	kg 1,4-DCB	0.004521	0.00077	8.56E-05	0.000146	1.26E-04	5.80E-05	0.000196	0.000125	3.88E-05	5.03E-05	1.88E-05	3.03E-05	4.24E-06	9.10E-06	0.002862

Human non-carcinogenic toxicity	kg 1,4-DCB	0.05013	0.0171	0.00298	0.0015	0.0002	0.002113	0.005377	0.002779	0.000307	0.002211	0.000629	0.000511	0.000139	0.00023	0.014055
Land use	m ² a crop eq	0.004031	0.000294	7.11E-05	1.40E-05	6.25E-06	0.000878	0.002298	1.32E-04	6.12E-06	3.04E-05	4.47E-05	1.29E-05	3.99E-06	4.27E-05	1.97E-04
Mineral resource scarcity	kg Cu eq	0.000206	6.67E-05	6.52E-05	4.00E-06	3.70E-06	5.72E-06	1.50E-05	8.35E-06	4.34E-06	5.37E-06	3.06E-06	4.50E-07	7.46E-07	4.86E-07	2.32E-05
Fossil resource scarcity	kg oil eq	0.027154	0.015661	0.001337	0.001691	3.05E-05	0.000551	0.001691	0.00238	0.000508	0.000366	0.000282	2.10E-04	2.48E-05	0.00013	0.002292
Water consumption	m ³	0.00066	0.000237	3.51E-05	0.000104	7.76E-06	2.33E-05	8.04E-05	6.87E-05	1.15E-06	2.77E-06	1.50E-06	2.66E-06	3.41E-06	1.69E-06	9.04E-05

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one duckbill FFP respirator (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, FFP=filtering facepiece, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 8: Environmental impact of one glove

Impact category	Unit	Total	Synthetic rubber {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Folding boxboard/chipboard {GLO} market for Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Electricity, medium voltage {MY} market for Cut-off, U	PPE clinical waste
Global warming	kg CO ₂ e	0.02624	0.009079	0.000127	0.000234	0.000154	0.000212	0.000505	0.00764	0.00829
Stratospheric ozone depletion	kg CFC11 eq	1.17E-08	5.79E-09	1.27E-10	1.16E-10	7.21E-11	1.28E-10	3.54E-10	2.12E-09	2.95E-09
Ionizing radiation	kBq Co-60 eq	0.000889	0.000716	3.79E-06	1.64E-05	3.01E-06	6.58E-06	5.24E-06	1.24E-05	1.26E-04
Ozone formation, Human health	kg NO _x eq	5.63E-05	2.37E-05	3.98E-07	6.34E-07	8.36E-07	9.52E-07	1.05E-05	1.19E-05	7.31E-06
Fine particulate matter formation	kg PM _{2.5} eq	4.55E-05	1.62E-05	2.09E-07	4.47E-07	2.24E-07	3.39E-07	3.35E-06	1.92E-05	5.55E-06
Ozone formation, Terrestrial ecosystems	kg NO _x eq	5.87E-05	2.57E-05	4.06E-07	6.43E-07	8.52E-07	9.82E-07	1.06E-05	1.21E-05	7.44E-06
Terrestrial acidification	kg SO ₂ eq	8.77E-05	3.51E-05	4.50E-07	9.36E-07	5.17E-07	7.36E-07	1.04E-05	2.51E-05	1.44E-05
Freshwater eutrophication	kg P eq	9.22E-06	2.86E-06	5.06E-08	8.17E-08	1.41E-08	3.93E-08	1.98E-08	3.26E-06	2.89E-06
Marine eutrophication	kg N eq	6.41E-07	2.07E-07	2.88E-08	1.57E-08	1.13E-09	2.37E-09	1.91E-09	2.17E-07	1.67E-07
Terrestrial ecotoxicity	kg 1,4-DCB	0.054753	0.033591	0.000532	0.000606	0.002942	0.001397	0.001346	0.004857	0.009483
Freshwater ecotoxicity	kg 1,4-DCB	0.000941	0.000562	5.64E-06	6.21E-06	3.61E-06	2.06E-05	5.41E-06	0.000165	0.000172
Marine ecotoxicity	kg 1,4-DCB	0.001255	0.000744	7.39E-06	8.28E-06	6.29E-06	2.73E-05	7.72E-06	0.000221	0.000233
Human carcinogenic toxicity	kg 1,4-DCB	0.001555	0.000359	3.78E-06	7.11E-06	3.54E-06	9.48E-06	1.14E-05	0.000272	0.000889
Human non-carcinogenic toxicity	kg 1,4-DCB	0.023014	0.012482	0.000137	0.000195	0.000119	0.000417	9.00E-05	0.005207	0.004367
Land use	m ² a crop eq	0.000582	0.000298	5.71E-05	8.33E-05	8.42E-06	5.74E-06	1.79E-06	6.69E-05	6.11E-05
Mineral resource scarcity	kg Cu eq	0.000288	0.000273	3.72E-07	5.44E-07	5.76E-07	1.01E-06	1.27E-06	3.37E-06	7.20E-06
Fossil resource scarcity	kg oil eq	0.008677	0.005599	3.59E-05	6.13E-05	5.32E-05	6.90E-05	0.000149	0.001998	0.000712
Water consumption	m ³	0.000232	0.000147	1.52E-06	2.91E-06	2.84E-07	5.21E-07	3.36E-07	5.18E-05	2.81E-05

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one glove (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 9: Environmental impact of one disposable gown

Impact category	Unit	Total	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off, U	Synthetic rubber {GLO} market for Cut-off, U	Packaging film, low density polyethylene {GLO} market for Cut-off, U	Kraft paper, bleached {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, S	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	Electricity, medium voltage {EG} market for electricity, medium voltage Cut-off, U	Electricity, medium voltage {DE} market for Cut-off, U	PPE clinical waste
Global warming	kg CO ₂ e	0.905431	0.404429	0.021734	0.014277	0.00956	0.012208	0.020126	0.010184	0.007387	0.026729	0.006958	0.005253	0.366184
Stratospheric ozone depletion	kg CFC11 eq	3.18E-07	1.16E-07	1.39E-08	3.62E-09	5.42E-09	1.22E-08	1.41E-08	6.15E-09	3.46E-09	5.70E-09	3.44E-09	3.71E-09	1.30E-07
Ionizing radiation	kBq Co-60 eq	0.034539	0.023092	0.001713	0.000899	0.000851	0.000364	0.000209	0.000316	0.000144	0.00041	2.61E-05	0.000954	0.005564
Ozone formation, Human health	kg NO _x eq	0.00204	0.000959	5.68E-05	3.45E-05	3.26E-05	3.82E-05	0.000419	4.57E-05	4.01E-05	7.40E-05	1.13E-05	5.42E-06	0.000323
Fine particulate matter formation	kg PM2.5 eq	0.001098	0.000538	3.87E-05	1.92E-05	2.63E-05	2.01E-05	0.000134	1.62E-05	1.08E-05	4.08E-05	5.35E-06	2.78E-06	2.45E-04
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.002107	0.001005	6.16E-05	3.73E-05	3.32E-05	3.89E-05	0.000422	4.71E-05	4.09E-05	7.42E-05	1.15E-05	5.48E-06	0.000329
Terrestrial acidification	kg SO ₂ eq	0.002644	0.001212	8.41E-05	4.23E-05	3.45E-05	4.31E-05	0.000415	3.53E-05	2.48E-05	9.11E-05	1.65E-05	9.02E-06	0.000634
Freshwater eutrophication	kg P eq	0.000272	0.000109	6.85E-06	3.99E-06	3.79E-06	4.85E-06	7.91E-07	1.89E-06	6.79E-07	4.88E-06	1.18E-07	7.41E-06	1.28E-04
Marine eutrophication	kg N eq	2.25E-05	9.84E-06	4.96E-07	4.89E-07	5.29E-07	2.76E-06	7.60E-08	1.14E-07	5.42E-08	3.16E-07	1.06E-08	4.74E-07	7.39E-06
Terrestrial ecotoxicity	kg 1,4-DCB	1.849938	0.942835	0.080409	0.029279	0.031426	0.051025	0.053655	0.067043	0.141189	0.017658	0.010597	0.003274	0.418905
Freshwater ecotoxicity	kg 1,4-DCB	0.028206	0.015775	0.001346	0.000455	0.000312	0.000541	0.000216	0.000989	0.000173	0.000411	8.79E-05	0.000257	0.007606
Marine ecotoxicity	kg 1,4-DCB	0.037237	0.020456	0.001781	0.000599	0.000417	0.000709	0.000308	0.001309	0.000302	0.000543	0.000115	0.000343	0.010304

Human carcinogenic toxicity	kg 1,4-DCB	0.056156	0.012537	0.000859	0.000443	0.000415	0.000362	0.000454	0.000455	0.00017	0.000751	3.72E-05	0.000378	0.03928
Human non-carcinogenic toxicity	kg 1,4-DCB	0.583373	0.278272	0.02988	0.00985	0.007697	0.013184	0.003587	0.019995	0.00569	0.012643	0.000802	0.008112	0.1929
Land use	m ² a crop eq	0.024286	0.004788	0.000713	0.000467	0.008952	0.005479	7.16E-05	0.000275	0.000404	0.00032	9.69E-06	9.96E-05	0.002698
Mineral resource scarcity	kg Cu eq	0.002298	0.001086	6.54E-04	2.96E-05	2.65E-05	3.57E-05	5.08E-05	4.86E-05	2.76E-05	1.11E-05	3.34E-06	4.86E-06	0.000318
Fossil resource scarcity	kg oil eq	0.335342	0.254846	0.013402	0.008436	0.002754	0.00344	0.005939	0.003314	0.002551	0.00519	0.002625	0.001263	0.03145
Water consumption	m ³	0.006301	0.003863	0.000351	0.000243	0.000296	0.000146	1.34E-05	2.50E-05	1.36E-05	6.57E-05	1.41E-05	2.94E-05	0.00124

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one gown (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 10: Environmental impact of one surgical mask (Type II)

Impact category	Unit	Total	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off, U	Synthetic rubber {GLO} market for Cut-off, U	Sheet rolling, aluminium {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Folding boxboard/chipboard {GLO} market for Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	Electricity, medium voltage {GB} market for Cut-off, U	Electricity, medium voltage {MX} market for Cut-off, U	PPE clinical waste
Global warming	kg CO ₂ e	0.013491	0.004502	0.000788	0.000151	0.000281	0.001226	0.000141	0.000194	0.000492	0.000493	3.20E-05	2.51E-05	0.005167
Stratospheric ozone depletion	kg CFC11 eq	5.25E-09	1.29E-09	5.02E-10	5.26E-11	2.80E-10	6.10E-10	6.58E-11	1.17E-10	3.45E-10	1.05E-10	1.64E-11	3.32E-11	1.84E-09
Ionizing radiation	kBq Co-60 eq	0.000545	0.000257	6.21E-05	1.12E-05	8.39E-06	8.61E-05	2.75E-06	6.01E-06	5.11E-06	7.56E-06	1.84E-05	1.51E-06	7.85E-05
Ozone formation, Human health	kg NO _x eq	3.52E-05	1.07E-05	2.06E-06	3.42E-07	8.80E-07	3.33E-06	7.64E-07	8.70E-07	1.02E-05	1.37E-06	5.59E-08	4.29E-08	4.55E-06
Fine particulate	kg PM2.5 eq	1.86E-05	5.99E-06	1.40E-06	2.88E-07	4.62E-07	2.35E-06	2.05E-07	3.09E-07	3.27E-06	7.53E-07	2.59E-08	5.78E-08	3.46E-06

matter formation														
Ozone formation, Terrestrial ecosystems	kg NO _x eq	3.61E-05	1.12E-05	2.23E-06	3.59E-07	8.98E-07	3.37E-06	7.79E-07	8.97E-07	1.03E-05	1.37E-06	5.65E-08	4.36E-08	4.64E-06
Terrestrial acidification	kg SO ₂ eq	4.50E-05	1.35E-05	3.05E-06	5.05E-07	9.94E-07	4.91E-06	4.73E-07	6.73E-07	1.01E-05	1.68E-06	7.54E-08	8.24E-08	8.95E-06
Freshwater eutrophication	kg P eq	4.04E-06	1.21E-06	2.48E-07	5.89E-08	1.12E-07	4.29E-07	1.29E-08	3.59E-08	1.93E-08	9.00E-08	6.73E-09	1.13E-08	1.80E-06
Marine eutrophication	kg N eq	3.95E-07	1.10E-07	1.80E-08	4.97E-09	6.36E-08	8.24E-08	1.03E-09	2.16E-09	1.86E-09	5.82E-09	7.58E-10	7.39E-10	1.04E-07
Terrestrial ecotoxicity	kg 1,4-DCB	0.029517	0.010496	0.002916	0.000173	0.001176	0.00318	0.002688	0.001276	0.00131	0.000326	3.48E-05	2.84E-05	0.00591
Freshwater ecotoxicity	kg 1,4-DCB	0.00042	0.000176	4.88E-05	6.83E-06	1.25E-05	3.26E-05	3.30E-06	1.88E-05	5.26E-06	7.57E-06	8.48E-07	5.87E-07	0.000107
Marine ecotoxicity	kg 1,4-DCB	0.000556	0.000228	6.46E-05	8.81E-06	1.63E-05	4.35E-05	5.75E-06	2.49E-05	7.52E-06	1.00E-05	1.15E-06	7.82E-07	0.000145
Human carcinogenic toxicity	kg 1,4-DCB	0.00082	0.00014	3.11E-05	1.12E-05	8.35E-06	3.73E-05	3.24E-06	8.67E-06	1.11E-05	1.38E-05	7.55E-07	6.94E-07	0.000554
Human non-carcinogenic toxicity	kg 1,4-DCB	0.009203	0.003098	0.001084	0.000129	0.000304	0.001023	0.000108	0.000381	8.76E-05	0.000233	1.91E-05	1.45E-05	0.002722
Land use	m ² a crop eq	0.000707	5.33E-05	2.59E-05	1.92E-06	0.000126	0.000437	7.70E-06	5.24E-06	1.75E-06	5.91E-06	3.55E-06	4.71E-08	3.81E-05
Mineral resource scarcity	kg Cu eq	4.75E-05	1.21E-05	2.37E-05	5.70E-07	8.23E-07	2.86E-06	5.26E-07	9.25E-07	1.24E-06	2.05E-07	4.04E-08	1.31E-08	4.49E-06
Fossil resource scarcity	kg oil eq	0.004577	0.002837	0.000486	3.86E-05	7.93E-05	0.000322	4.86E-05	6.31E-05	0.000145	9.57E-05	1.08E-05	7.69E-06	0.000444
Water consumption	m ³	9.55E-05	4.30E-05	1.27E-05	1.17E-06	3.36E-06	1.53E-05	2.59E-07	4.76E-07	3.28E-07	1.21E-06	1.40E-07	4.80E-08	1.75E-05

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one Type II surgical mask (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 11: Environmental impact of one surgical mask (Type IIR)

Impact category	Unit	Total	Textile, non-woven polypropylene {GLO} market for textile, non woven polypropylene Cut-off, U	Sheet rolling, aluminium {GLO} market for Cut-off, U	Synthetic rubber {GLO} market for Cut-off, U	Corrugated board box {RoW} market for corrugated board box Cut-off, U	Folding boxboard/chipboard {GLO} market for Cut-off, U	T Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U	Transport, freight, light commercial vehicle {GLO} market group for transport, freight, light commercial vehicle Cut-off, U	Transport, freight, lorry, unspecified {GLO} market group for transport, freight, lorry, unspecified Cut-off, U	Electricity, medium voltage {CN} market group for Cut-off, U	Electricity, medium voltage {MX} market for Cut-off, U	Electricity, medium voltage {GB} market for Cut-off, U	ppe clinical waste
Global warming	kg CO ₂ e	0.020192	0.007354	0.000131	0.001267	0.000302	0.00124	0.000656	0.000259	0.000188	0.00076	3.87E-05	7.40E-05	0.007968
Stratospheric ozone depletion	kg CFC11 eq	7.63E-09	2.10E-09	4.57E-11	8.07E-10	3.00E-10	6.17E-10	4.60E-10	1.56E-10	8.78E-11	1.62E-10	5.13E-11	3.80E-11	2.83E-09
Ionizing radiation	kBq Co-60 eq	0.000807	0.00042	9.76E-06	9.98E-05	8.99E-06	8.71E-05	6.81E-06	8.02E-06	3.66E-06	1.17E-05	2.33E-06	4.26E-05	1.21E-04
Ozone formation, Human health	kg NO _x eq	5.04E-05	1.74E-05	2.98E-07	3.31E-06	9.42E-07	3.37E-06	1.36E-05	1.16E-06	1.02E-06	2.11E-06	6.61E-08	1.29E-07	7.02E-06
Fine particulate matter formation	kg PM2.5 eq	2.68E-05	9.78E-06	2.50E-07	2.26E-06	4.95E-07	2.37E-06	4.35E-06	4.13E-07	2.73E-07	1.16E-06	8.92E-08	6.00E-08	5.33E-06
Ozone formation, Terrestrial ecosystems	kg NO _x eq	5.19E-05	1.83E-05	3.12E-07	3.59E-06	9.62E-07	3.41E-06	1.37E-05	1.20E-06	1.04E-06	2.11E-06	6.73E-08	1.31E-07	7.15E-06
Terrestrial acidification	kg SO ₂ eq	6.50E-05	2.20E-05	4.39E-07	4.90E-06	1.06E-06	4.97E-06	1.35E-05	8.97E-07	6.30E-07	2.59E-06	1.27E-07	1.74E-07	1.38E-05
Freshwater eutrophication	kg P eq	6.01E-06	1.98E-06	5.12E-08	3.99E-07	1.20E-07	4.34E-07	2.58E-08	4.79E-08	1.72E-08	1.39E-07	1.75E-08	1.56E-08	2.78E-06
Marine eutrophication	kg N eq	5.38E-07	1.79E-07	4.32E-09	2.89E-08	6.82E-08	8.34E-08	2.48E-09	2.89E-09	1.38E-09	8.98E-09	1.14E-09	1.75E-09	1.61E-07
Terrestrial ecotoxicity	kg 1,4-DCB	0.043126	0.017144	0.000151	0.004687	0.00126	0.003218	0.001748	0.001702	0.003585	0.000502	4.38E-05	8.06E-05	0.009116
Freshwater ecotoxicity	kg 1,4-DCB	0.000633	0.000287	5.94E-06	7.85E-05	1.34E-05	3.30E-05	7.02E-06	2.51E-05	4.40E-06	1.17E-05	9.05E-07	1.96E-06	0.000166
Marine ecotoxicity	kg 1,4-DCB	0.000837	0.000372	7.66E-06	0.000104	1.75E-05	4.40E-05	1.00E-05	3.32E-05	7.66E-06	1.54E-05	1.21E-06	2.67E-06	0.000224
Human carcinogenic toxicity	kg 1,4-DCB	0.001243	0.000228	9.70E-06	5.01E-05	8.94E-06	3.78E-05	1.48E-05	1.16E-05	4.32E-06	2.14E-05	1.07E-06	1.75E-06	0.000855
Human non-carcinogenic toxicity	kg 1,4-DCB	0.013631	0.00506	0.000113	0.001742	0.000326	0.001035	0.000117	0.000508	0.000144	0.00036	2.24E-05	4.41E-05	0.004198
Land use	m ² a crop eq	0.000792	8.71E-05	1.67E-06	4.16E-05	0.000135	0.000442	2.33E-06	6.99E-06	1.03E-05	9.11E-06	7.26E-08	8.20E-06	5.87E-05
Mineral resource scarcity	kg Cu eq	7.30E-05	1.97E-05	4.96E-07	3.81E-05	8.82E-07	2.89E-06	1.65E-06	1.23E-06	7.02E-07	3.17E-07	2.02E-08	9.34E-08	6.92E-06

Fossil resource scarcity	kg oil eq	0.007056	0.004634	3.36E-05	0.000781	8.50E-05	0.000326	0.000193	8.41E-05	6.48E-05	0.000148	1.19E-05	2.51E-05	0.000684
Water consumption	m ³	0.000141	7.02E-05	1.02E-06	2.05E-05	3.60E-06	1.55E-05	4.37E-07	6.35E-07	3.46E-07	1.87E-06	7.40E-08	3.24E-07	2.70E-05

Environmental impacts (midpoint categories) measured using life cycle assessment modelled on one Type IIR surgical mask (with shipping, and waste via hazardous incineration). 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 12: Environmental impact of scenario models (midpoint categories)

Impact category	Unit	Shipping (Base scenario)	Air freight	UK manufacture	Reduce	Reuse	Recycle	Combination
Global warming	kg CO ₂ e	1.06E+08	1.59E+08	9.40E+07	5.82E+07	9.54E+07	6.92E+07	2.66E+07
Stratospheric ozone depletion	kg CFC11 eq	40.538965	52.84834	37.8953	19.1113	37.169319	27.297802	8.5314768
Ionizing radiation	kBq Co-60 eq	3882726.8	4393781	8070889	2247673	3586704.4	3316442	2191322.8
Ozone formation, Human health	kg NO _x eq	244352.67	467441	172731	140816.6	216256.7	211507.29	64913.055
Fine particulate matter formation	kg PM _{2.5} eq	157695.7	195349.3	106342.3	74078.88	143214.97	132765.47	36093.199
Ozone formation, Terrestrial ecosystems	kg NO _x eq	254583.89	479487.2	182411.1	146581.1	225403.83	221150.88	69118.6
Terrestrial acidification	kg SO ₂ eq	341021.9	452932.5	247915.7	179785.7	305172.63	276487.71	80324.334
Freshwater eutrophication	kg P eq	33786.378	34486.74	28534.56	16823.66	30591.98	20784.428	7122.7384
Marine eutrophication	kg N eq	3017.4222	3071.634	2739.373	1838.291	2720.1492	2265.1849	1169.83
Terrestrial ecotoxicity	kg 1,4-DCB	2.11E+08	2.97E+08	2.01E+08	1.10E+08	1.90E+08	1.68E+08	65225857
Freshwater ecotoxicity	kg 1,4-DCB	3361093.7	3507965	3174324	1630832	3036956.3	2587047.1	912910.91
Marine ecotoxicity	kg 1,4-DCB	4475710.3	4726242	4228065	2167458	4045755.3	3427117.7	1204522.6
Human carcinogenic toxicity	kg 1,4-DCB	6345112.4	6470094	5867629	3484960	5646296.9	2347669.2	829587.02
Human non-carcinogenic toxicity	kg 1,4-DCB	78904366	89983829	71674682	36576646	7.20E+07	59273197	19548776
Land use	m ² a crop eq	2634024.8	2728783	3295467	1563170	2640316.1	2359449.1	1518460.9
Mineral resource scarcity	kg Cu eq	667193.13	679485.6	662431.3	138218	638533.59	634807.18	91173.241
Fossil resource scarcity	kg oil eq	36593143	53682001	34013493	20633254	32450424	33392554	14406081
Water consumption	m ³	973330.73	992483.5	900477.8	546163.7	863685.01	847130.81	373862

Environmental impact (midpoint categories) of PPE distributed to health and social care services in England by NHS Supply Chain between 25th February and 23rd August 2020,, measured using life cycle assessment, modelling base scenario (shipping, single-use PPE, clinical waste), air freight, UK manufacture, reduce (zero glove use), reuse (reusable gown, reuse of face shield, all other items single-use), recycling, and combination of measures. 1,4-DCB =dichlorobenzene, CFC11= Trichlorofluoromethane, CO₂e= carbon dioxide equivalents, Cu= copper, eq= equivalents, kBq Co-

60 eq = kilobecquerel Cobalt-60, m²a = square meter years, N= nitrogen, NO_x= nitrous oxides, P=phosphate, PM2.5 = particulate matter <2.5 micrometers, SO₂= sulphur dioxide

Supplementary Table 13: Environmental impact of scenario models (endpoint categories)

Damage category	Unit	Shipping (Base Scenario)	Air freight	UK manufacture	Reduce	Reuse	Recycle	Combination
Human health	DALY	239	314	192	122	215	171	55
Ecosystems	species.yr	0.466	0.668	0.403	0.255	0.419	0.330	0.125
Resources	US \$	12,697,261	20,366,321	12,253,727	7,277,962	11,188,442	12,018,323	5,320,902

Environmental impact (endpoint categories) of PPE distributed to health and social care services in England by NHS Supply Chain between 25th February and 23rd August 2020, measured using life cycle assessment, modelling base scenario (shipping, single-use PPE, clinical waste), air freight, UK manufacture, reduce (zero glove use), reuse (reusable gown, reuse of face shield, all other items single-use), recycling, and combination of measures (UK manufacture, reduce, reuse and recycle). DALYs= disability adjusted life years, species.year=loss of local species per year, US\$=extra costs involved for future mineral and fossil resource extraction