

	Method: ILCD 2011 Midpoint+ Normalisation: EC-JRC Global, equal										Database: Ecolnvent Tool: SimaPro		Source Material Ranking																					
Relative IC-Level Impacts	Climate change	Ozone depletion	Human toxicity, non-cancer effects	Human toxicity, cancer effects	Human toxicity, non-cancer effects	Particulate matter	Ionizing radiation (mSv)	Ionizing radiation E (mSv.kg)	Acidification	Resource use	Mineral fossil & non-fossil resource depletion	Climate change	Ozone depletion	Human toxicity, non-cancer effects	Human toxicity, cancer effects	Human toxicity, non-cancer effects	Particulate matter	Ionizing radiation (mSv)	Ionizing radiation E (mSv.kg)	Acidification	Resource use	Mineral fossil & non-fossil resource depletion	Climate change	Ozone depletion	Human toxicity, non-cancer effects	Human toxicity, cancer effects	Human toxicity, non-cancer effects	Particulate matter	Ionizing radiation (mSv)	Ionizing radiation E (mSv.kg)	Acidification	Resource use	Mineral fossil & non-fossil resource depletion	
	Aluminium	13.1%	17.2%	2.9%	94.7%	14.3%	5.4%	6.3%	14.9%	14.3%	16.1%	7.1%	7.8%	2.9%	16.5%	0.2%	0.4%	2	8	4	2	4	6	5	5	6	6	4	7	4	6	19	8	
	Brass	3.3%	9.3%	79.1%	78.7%	28.0%	6.6%	7.6%	32.2%	71.9%	35.8%	72.6%	12.5%	71.9%	29.5%	0.5%	100.0%	12	9	2	4	3	4	4	3	3	4	2	5	2	4	8	1	
	Copper	3.7%	9.2%	100.0%	92.0%	39.3%	4.5%	5.0%	43.1%	100.0%	47.6%	100.0%	16.2%	100.0%	37.1%	0.4%	18.8%	11	10	1	3	2	9	7	2	1	3	1	3	1	3	13	2	
	Steel	0.5%	4.0%	1.5%	52.5%	1.1%	1.6%	1.7%	0.8%	0.0%	0.0%	1.9%	0.0%	0.8%	3.7%	0.5%	0.3%	19	15	7	5	16	15	15	19	20	20	10	20	7	15	7	9	
	Cotton	0.0%	8.6%	1.7%	24.7%	3.0%	2.0%	2.7%	6.1%	15.3%	48.8%	6.2%	100.0%	1.3%	100.0%	100.0%	0.4%	20	11	6	6	11	14	11	10	5	2	5	1	5	1	1	7	
	Silicon	1.8%	74.0%	0.4%	1.6%	0.9%	4.7%	4.1%	1.4%	1.0%	1.4%	0.4%	0.2%	4.3%	0.7%	0.2%	15	2	14	18	17	7	8	17	15	15	11	16	13	10	4	14		
	CFRP	100.0%	100.0%	12.0%	100.0%	100.0%	100.0%	100.0%	100.0%	91.1%	100.0%	48.7%	49.5%	5.9%	94.9%	0.0%	1.7%	1	1	3	1	1	1	1	1	1	3	2	3	2	20	4		
	GFRP	8.6%	5.9%	0.2%	6.7%	4.5%	3.9%	3.7%	7.0%	5.3%	5.7%	1.2%	6.8%	0.1%	3.8%	0.8%	0.2%	4	13	18	9	9	10	10	8	8	9	13	9	16	14	3	15	
	Epoxy	4.0%	28.9%	0.8%	4.7%	2.3%	5.8%	5.5%	5.4%	2.4%	2.9%	2.6%	1.3%	0.5%	6.4%	0.4%	0.5%	10	6	9	12	12	5	6	12	13	13	8	14	9	8	15	6	
Latex	1.5%	0.0%	0.3%	0.9%	1.1%	0.0%	0.0%	3.4%	1.6%	2.8%	0.0%	1.3%	0.0%	0.0%	0.5%	0.0%	16	20	15	19	14	20	20	15	14	14	20	15	20	20	9	20		
DMA	0.9%	17.3%	0.2%	0.0%	0.0%	2.5%	2.6%	0.0%	0.3%	0.6%	0.0%	9.9%	0.2%	5.6%	0.3%	0.2%	18	7	17	20	20	12	13	20	19	19	16	6	14	9	18	13		
PA	7.8%	0.1%	0.0%	4.0%	2.2%	0.0%	0.0%	6.3%	4.8%	6.0%	0.6%	7.6%	0.0%	0.0%	0.8%	0.1%	6	19	20	14	13	19	19	9	10	8	17	8	19	19	2	18		
PBDE	13.0%	73.2%	1.7%	8.5%	8.2%	10.1%	12.2%	24.2%	15.8%	26.8%	4.2%	13.4%	0.8%	21.0%	0.5%	1.9%	3	3	5	8	5	2	2	4	4	5	6	4	6	5	10	3		
PC	7.6%	0.4%	0.6%	4.6%	7.7%	0.1%	0.1%	5.6%	3.7%	4.2%	0.3%	1.8%	0.0%	0.4%	0.4%	0.0%	7	18	10	13	6	18	18	11	11	11	19	13	18	18	12	19		
PET	1.9%	5.5%	0.4%	2.0%	0.7%	2.2%	2.5%	1.6%	0.8%	0.8%	1.0%	0.3%	0.2%	4.2%	0.4%	0.3%	14	14	13	16	18	13	14	16	17	16	14	17	12	11	17	11		
PF	2.0%	7.3%	0.5%	3.1%	1.1%	4.6%	3.8%	4.3%	0.9%	0.7%	2.0%	0.3%	0.3%	3.8%	0.4%	0.3%	13	12	11	15	15	8	9	14	16	17	9	18	10	13	11	12		
PMMA	8.3%	0.5%	0.1%	4.9%	3.4%	0.1%	0.1%	12.3%	7.4%	5.7%	0.5%	3.6%	0.1%	0.4%	0.4%	0.1%	5	17	19	11	10	17	17	6	7	10	18	11	17	17	14	17		
PU Flexible Foam	4.5%	0.8%	0.2%	5.3%	5.8%	0.6%	0.5%	4.4%	3.1%	3.3%	0.8%	3.0%	0.2%	0.7%	0.0%	0.2%	9	16	16	10	7	16	16	13	12	12	15	12	15	16	6	16		
PU Rigid Foam	5.1%	33.1%	1.2%	9.1%	4.9%	9.3%	8.2%	8.6%	4.9%	6.1%	3.2%	5.1%	0.6%	8.1%	0.7%	0.6%	8	5	8	7	8	3	3	7	9	7	7	10	8	7	5	5		
PVC	1.3%	44.0%	0.4%	1.8%	0.5%	2.6%	2.7%	0.8%	0.5%	0.6%	1.2%	0.2%	0.3%	4.1%	0.4%	0.3%	17	4	12	17	19	11	12	18	18	18	12	19	11	12	16	10		
Criteria Weights:	14.63	12.53	11.68	11.68	11.68	5.32	5.32	10.87	12.73	2.42	2.42	2.42	11.52	5.79	6.86	9.08	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250	6.250		

Composite Material Constitution	
Epoxy Adhesive	82% ER, 18% DMA
NOMEX HC	50.6% PA, 49.4% PF
Synthetic Leather	19.8% Cotton, 35.7% PC, 39.7% PU-FF, 4.8% PBDE

Inventory-Based Adjustment	Global Warming / Climate Change							Ozone Depletion							Human Health: Non-carcinogenic							Human Health: Carcinogenic							Human Health: Respiratory Effects							Human Health: Ionizing radiation							Ionizing radiation E (interim)																				
	Seats			Linings		Bins	Floor	Seats			Linings		Bins	Floor	Seats			Linings		Bins	Floor	Seats			Linings		Bins	Floor	Seats			Linings		Bins	Floor	Seats			Linings		Bins	Floor																					
	I. Metallic Structure	II. Composite Structure	III. Comfort Interfaces	IV. Misc.	V. Sidewall Panel	VI. Insulation Blankets	VII. Overhead bins	VIII. Carpet	IX. Floor Panel	I. Metallic Structure	II. Composite Structure	III. Comfort Interfaces	IV. Misc.	V. Sidewall Panel	VI. Insulation Blankets	VII. Overhead bins	VIII. Carpet	IX. Floor Panel	I. Metallic Structure	II. Composite Structure	III. Comfort Interfaces	IV. Misc.	V. Sidewall Panel	VI. Insulation Blankets	VII. Overhead bins	VIII. Carpet	IX. Floor Panel	I. Metallic Structure	II. Composite Structure	III. Comfort Interfaces	IV. Misc.	V. Sidewall Panel	VI. Insulation Blankets	VII. Overhead bins	VIII. Carpet	IX. Floor Panel	I. Metallic Structure	II. Composite Structure	III. Comfort Interfaces	IV. Misc.	V. Sidewall Panel	VI. Insulation Blankets	VII. Overhead bins	VIII. Carpet	IX. Floor Panel																		
Aluminium	127.64		36.08	3.88				49.09	24.22	167.62	47.39	5.10			64.47		31.81	28.45		8.04	0.87						10.94	5.40	924.93	261.48	28.14		355.74	175.50	139.28	39.38	4.24		53.57	26.43	53.14	15.02	1.62		20.44	10.08	61.29	17.33	1.86		23.57	11.63											
Brass	0.59			1.00						1.68		2.86					14.23				8.58								2.01		14.16		5.05				1.18		1.37		2.32																						
Cu wiring				0.04							0.11										1.20																	1.18		0.05				0.06																			
Stainless Steel			1.47	1.58							12.44	13.39									4.48	4.83								162.20	174.64									4.83	5.20			5.33	5.74																		
Cotton															3.00												0.59							8.66													0.96																
Synth. Leather			51.40								57.33		1.78	2.43							7.21		0.01	0.01						91.37										60.90				11.58			13.86																
Silicone Rubber				0.04	0.06						656.40										79.02										656.40		0.04	0.05							0.02	0.03				0.11	0.15			0.10	0.13												
CFRP		656.40																																												656.40			656.40														
GFRP					11.13	73.59	16.06								7.67	50.68	11.06																8.69	57.43	12.53							5.81	38.42	8.38			5.11	33.79	7.37		4.75	31.42	6.86										
Epoxy Adhesive								0.05									0.38																			0.05											0.07			0.07													
Latex							1.02											0.19																						0.80																							
NOMEX HC					2.16		3.11							1.60	2.30						0.10		0.14										2.21		0.62					1.02																							
PA										0.01	0.11	0.03		1.60			0.14																1.53		6.92						0.71	5.69	1.68		6.92		0.39	3.14	0.93														
PC		100.38	0.18								5.66	0.01									7.44	0.01									61.42	0.11									102.29	0.18			0.88	0.00		0.00	0.02	0.01													
PEI				5.58								0.31										0.41											3.41							5.68			0.05			0.09			0.09														
PET Film			1.73	1.33		0.37		1.34			4.94	3.79		1.06	3.84			0.28			0.35	0.27		0.08		0.28					1.84	1.41		0.39	1.43					0.59	0.45		0.13		0.46		2.02	1.55															
PMMA				4.94								0.31											0.05									2.89								2.03		0.13		0.46		0.05		0.43		1.57		2.25	1.73	0.48	1.75								
PU Flexible Foam		65.99								12.08											3.67											78.39									85.42					9.14			7.68														
PU Rigid Foam		22.03	0.67							144.16	4.37										5.02	0.15		0.25							39.55	1.20							21.32	0.65				40.27	1.22			35.60	1.08														
PVC Film				0.12	0.05	0.52		0.75			3.96	1.58	17.30	24.95							0.04	0.02	0.17		0.25						0.16	0.06	0.70						0.04	0.02	0.19			0.27			1.48		1.54														
Total Score	128.2	657.8	290.4	12.1	24.4	74.0	69.0	16.0	24.3	169.3	656.4	288.1	33.0	29.6	51.7	102.8	7.0	32.2	42.7	79.0	36.3	31.6	1.0	2.0	11.8	1.1	5.4	939.1	657.1	702.1	232.5	17.3	57.8	371.5	17.6	175.6	144.3	656.8	316.3	19.0	14.4	38.6	63.2	6.1	26.5	54.3	656.4	84.0	11.9	7.4	34.2	30.7	2.3	10.2	62.7	656.4	83.8	13.0	6.9	31.9	33.1	2.7	11.7
% Score	9.9%	50.8%	22.4%	0.9%	1.9%	5.7%	5.3%	1.2%	1.9%	12.4%	47.9%	21.0%	2.4%	2.2%	3.8%	7.5%	0.5%	2.3%	20.2%	37.5%	17.2%	15.0%	0.5%	1.0%	5.6%	0.5%	1.8%	11.7%	0.6%	5.5%	11.2%	51.1%	24.6%	1.5%	1.1%	3.0%	4.9%	0.5%	2.1%	6.1%	73.6%	9.4%	1.3%	0.8%	3.8%	3.4%	0.3%	1.1%	6.9%	72.7%	9.3%	1.4%	0.8%	3.5%	3.7%	0.3%	1.3%						
Rank	3	1	2	9	6	4	5	8	7	3	1	2	6	8	5	4	9	7	2	1	3	4	9	7	5	8	6	1	3	2	5	9	7	4	8	6	3	1	2	7	8	5	4	9	6	3	1	2	6	8	5	4	9	7									

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