

APPENDIX N

APPENDIX N

CHAPTER 4 SUPPORTING TABLES

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Table N-1. CRT Lead Inputs by Life-cycle Stage

Life-cycle Stage	Process	Input	Quantity	Units	Type
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead (Pb, ore)	6.30e-05	kg	Ancillary material
Materials Processing	Ferrite mfg. (EB)	Lead (Pb, ore)	5.70e-08	kg	Ancillary material
Materials Processing	Invar (DEAM mix)	Lead (Pb, ore)	5.84e-08	kg	Ancillary material
Materials Processing	Lead (EB)	Lead (Pb, ore)	4.96e-01	kg	Primary material
Materials Processing	Polycarbonate Production (PC; DEAM)	Lead (Pb, ore)	1.85e-06	kg	Ancillary material
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead (Pb, ore)	5.79e-08	kg	Ancillary material
Manufacturing	CRT tube mfg. (CDP)	Frit	6.67e-02	kg	Primary material
Manufacturing	CRT glass mfg. (CDP)	Lead	4.47e-01	kg	Primary material
Manufacturing	Frit manufacturing (CDP)	Lead	4.67e-02	kg	Primary material
Manufacturing	CRT monitor assembly (CDP)	Printed wiring board (PWB)	8.47e-01	kg	Direct to assembly
Manufacturing	PWB Mfg.	Solder (63% tin; 37% lead)	5.08e-02	kg	Primary material
Manufacturing	CRT monitor assembly (CDP)	Solder, unspecified	2.67e-02	kg	Direct to assembly
End-of-life	CRT Incineration (DEAM mix)	EOL CRT Monitor, incinerated	2.20e+01	kg	Primary material
End-of-life	CRT landfilling (CDP)	EOL CRT Monitor, landfilled	1.56e+01	kg	Primary material
End-of-life	CRT Recycling (CDP)	EOL CRT Monitor, recycled	2.42e+00	kg	Primary material

APPENDIX N

Table N-2. LCD Lead Inputs by Life-cycle Stage

Life-cycle Stage	Process	Input	Quantity	Units	Type
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead (Pb, ore)	2.35e-05	kg	Ancillary material
Materials Processing	PET Resin Production (DEAM)	Lead (Pb, ore)	1.82e-07	kg	Ancillary material
Materials Processing	Polycarbonate Production (PC; DEAM)	Lead (Pb, ore)	1.03e-06	kg	Ancillary material
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead (Pb, ore)	2.84e-08	kg	Ancillary material
Manufacturing	LCD module mfg. (CDP)	Printed wiring board (PWB)	2.27e-02	kg	Direct to assembly
Manufacturing	LCD monitor assembly (CDP)	Printed wiring board (PWB)	3.51e-01	kg	Direct to assembly
Manufacturing	LCD monitor assembly (CDP)	Solder (60% tin, 40% lead)	3.81e-02	kg	Primary material
Manufacturing	PWB Mfg.	Solder (63% tin; 37% lead)	2.24e-02	kg	Primary material
Manufacturing	LCD module mfg. (CDP)	Solder, unspecified	7.35e-05	kg	Ancillary material
End-of-life	LCD incineration (DEAM mix)	EOL LCD Monitor, incinerated	6.50e+00	kg	Primary material
End-of-life	LCD landfilling (CDP)	EOL LCD Monitor, landfilled	3.57e+00	kg	Primary material
End-of-life	LCD recycling (CDP)	EOL LCD Monitor, recycled	9.75e-01	kg	Primary material

Table N-3. CRT Lead Outputs by Life-cycle Stage

Life-Cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Materials Processing	ABS Production (DEAM)	Lead	2.12e-07	kg	Airborne	air
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead	1.20e-06	kg	Airborne	air
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead	1.45e-08	kg	Solid waste	landfill
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead cmpds	8.72e-06	kg	Waterborne	surface water
Materials Processing	Ferrite mfg. (EB)	Lead	3.46e-05	kg	Airborne	air
Materials Processing	Ferrite mfg. (EB)	Lead	1.70e-10	kg	Solid waste	landfill
Materials Processing	Ferrite mfg. (EB)	Lead cmpds	5.19e-07	kg	Waterborne	surface water
Materials Processing	Ferrite mfg. (EB)	Lead-210 (isotope)	1.82e-01	Bq	Radioactivity	air
Materials Processing	Invar (DEAM mix)	Lead	3.62e-05	kg	Airborne	air
Materials Processing	Invar (DEAM mix)	Lead	5.49e-09	kg	Solid waste	landfill
Materials Processing	Invar (DEAM mix)	Lead cmpds	2.98e-06	kg	Waterborne	surface water
Materials Processing	Invar (DEAM mix)	Lead-210 (isotope)	1.87e-01	Bq	Radioactivity	air
Materials Processing	Lead (EB)	Lead	1.58e-03	kg	Airborne	air
Materials Processing	Lead (EB)	Lead	2.72e-09	kg	Solid waste	landfill
Materials Processing	Lead (EB)	Lead cmpds	2.75e-06	kg	Waterborne	surface water
Materials Processing	Polycarbonate Production (PC; DEAM)	Lead	4.62e-07	kg	Airborne	air
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead	1.10e-06	kg	Airborne	air
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead	1.02e-11	kg	Solid waste	landfill
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead cmpds	8.83e-07	kg	Waterborne	surface water
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead-210 (isotope)	6.54e-01	Bq	Radioactivity	air
Materials Processing	Styrene-butadiene Copolymer Prod. (DEAM mix)	Lead	2.07e-07	kg	Airborne	air
Manufacturing	CRT glass mfg. (CDP)	Broken CRT glass	1.88e-03	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	cinders from CRT glass mfg (70% PbO)	8.26e-03	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	CRT glass faceplate EP dust (Pb) (D008 waste)	1.03e-03	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	CRT glass funnel EP dust (Pb) (D008 waste)	5.01e-03	kg	Hazardous waste	recycling/reuse

Table N-3. CRT Lead Outputs by Life-cycle Stage

Life-Cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Manufacturing	CRT glass mfg. (CDP)	Hazardous sludge (Pb) (D008)	1.52e-03	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	Lead	3.22e-07	kg	Airborne	air
Manufacturing	CRT glass mfg. (CDP)	Lead	4.34e-05	kg	Waterborne	surface water
Manufacturing	CRT glass mfg. (CDP)	Lead contaminated grit (D008 waste)	3.46e-05	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	Lead debris (D008 waste)	2.14e-04	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	sludge from CRT glass mfg (1% PbO)	8.78e-04	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	Waste Batch (Ba, Pb) (D008 waste)	1.41e-03	kg	Hazardous waste	landfill
Manufacturing	CRT glass mfg. (CDP)	Waste finishing sludge (Pb) (D008 waste)	2.56e-04	kg	Hazardous waste	landfill
Manufacturing	CRT monitor assembly (CDP)	Broken CRT glass	3.82e-01	kg	Solid waste	recycling/reuse
Manufacturing	CRT monitor assembly (CDP)	Printed wiring board (PWB)	3.70e-02	kg	Solid waste	recycling/reuse
Manufacturing	CRT tube mfg. (CDP)	Broken CRT glass	6.94e-01	kg	Solid waste	recycling/reuse
Manufacturing	CRT tube mfg. (CDP)	Frit	2.99e-03	kg	Hazardous waste	landfill
Manufacturing	CRT tube mfg. (CDP)	Lead	3.01e-06	kg	Waterborne	surface water
Manufacturing	CRT tube mfg. (CDP)	Lead	1.03e-06	kg	Waterborne	treatment
Manufacturing	CRT tube mfg. (CDP)	Lead sulfate cake	2.67e-05	kg	Hazardous waste	landfill
Manufacturing	Frit manufacturing (CDP)	Lead	3.20e-10	kg	Airborne	air
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead	3.88e-08	kg	Airborne	air
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead cmpds	3.28e-12	kg	Waterborne	surface water
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead	4.14e-09	kg	Airborne	air
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead cmpds	2.66e-13	kg	Waterborne	surface water
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead	9.99e-08	kg	Airborne	air
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead cmpds	3.95e-12	kg	Waterborne	surface water
Manufacturing	Japanese Electric Grid	Lead (Pb, ore)	4.41e-07	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Lead	1.24e-05	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Lead cmpds	1.17e-09	kg	Waterborne	surface water

Table N-3. CRT Lead Outputs by Life-cycle Stage

Life-Cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Manufacturing	Natural Gas Prod. (DEAM)	Lead	2.17e-08	kg	Airborne	air
Manufacturing	Natural Gas Prod. (DEAM)	Lead cmpds	2.36e-14	kg	Waterborne	surface water
Manufacturing	PWB Mfg.	Lead cmpds	1.62e-05	kg	Waterborne	treatment
Manufacturing	PWB Mfg.	PWB-Solder dross	6.70e-02	kg	Hazardous waste	recycling/reuse
Manufacturing	US electric grid	Lead	2.04e-07	kg	Airborne	air
Use	CRT monitor use (CDP)	EOL CRT Monitor, landfilled	1.01e+01	kg	Hazardous waste	treatment
Use	CRT monitor use (CDP)	EOL CRT Monitor, landfilled	2.12e+01	kg	Solid waste	treatment
Use	CRT monitor use (CDP)	EOL CRT Monitor, recycled	2.42e+00	kg	Solid waste	treatment
Use	CRT monitor use (CDP)	EOL CRT Monitor, remanufactured	6.60e-01	kg	Solid waste	recycling/reuse
Use	US electric grid	Lead	1.28e-05	kg	Airborne	air
End-of-life	CRT Incineration (DEAM mix)	Lead	1.43e-05	kg	Airborne	air
End-of-life	CRT Incineration (DEAM mix)	Lead cmpds	8.11e-10	kg	Waterborne	surface water
End-of-life	CRT landfilling (CDP)	EOL CRT Monitor, landfilled	3.91e+00	kg	Solid waste	landfill
End-of-life	CRT landfilling (CDP)	Lead cmpds	7.90e-10	kg	Waterborne	surface water
End-of-life	CRT Recycling (CDP)	Printed wiring board (PWB)	1.46e-01	kg	Hazardous waste	recycling/reuse
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead	-4.45e-08	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead cmpds	-2.86e-12	kg	Waterborne	surface water
End-of-life	LPG Production (DEAM)	Lead	1.07e-10	kg	Airborne	air
End-of-life	LPG Production (DEAM)	Lead cmpds	1.01e-14	kg	Waterborne	surface water
End-of-life	Natural Gas Prod. (DEAM)	Lead	-1.09e-08	kg	Airborne	air
End-of-life	Natural Gas Prod. (DEAM)	Lead cmpds	-1.18e-14	kg	Waterborne	surface water
End-of-life	US electric grid	Lead	1.28e-09	kg	Airborne	air

APPENDIX N

Table N-4. LCD Lead Outputs by Life-cycle Stage

Life-cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead	4.47e-07	kg	Airborne	air
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead	5.41e-09	kg	Solid waste	landfill
Materials Processing	Aluminum Prod. (all virgin; EB)	Lead empds	3.25e-06	kg	Waterborne	surface water
Materials Processing	Natural Gas Prod. (DEAM)	Lead	1.51e-06	kg	Airborne	air
Materials Processing	Natural Gas Prod. (DEAM)	Lead empds	1.65e-12	kg	Waterborne	surface water
Materials Processing	PET Resin Production (DEAM)	Lead	9.08e-08	kg	Airborne	air
Materials Processing	PMMA Sheet Prod. (DEAM)	Lead	1.92e-07	kg	Airborne	air
Materials Processing	Polycarbonate Production (PC; DEAM)	Lead	2.58e-07	kg	Airborne	air
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead	5.40e-07	kg	Airborne	air
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead	4.98e-12	kg	Solid waste	landfill
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead empds	4.33e-07	kg	Waterborne	surface water
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Lead-210 (isotope)	3.21e-01	Bq	Radioactivity	air
Materials Processing	Styrene-butadiene Copolymer Prod. (DEAM mix)	Lead	9.04e-08	kg	Airborne	air
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead	1.81e-09	kg	Airborne	air
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead empds	1.53e-13	kg	Waterborne	surface water
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead	6.38e-09	kg	Airborne	air
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead empds	4.10e-13	kg	Waterborne	surface water
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead	3.40e-09	kg	Airborne	air
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead empds	1.34e-13	kg	Waterborne	surface water
Manufacturing	Japanese Electric Grid	Lead (Pb, ore)	1.48e-06	kg	Airborne	air
Manufacturing	LCD backlight unit assembly (CDP)	Waste CCFL, with lead	8.17e-08	kg	Hazardous waste	treatment
Manufacturing	LCD CCFL mfg. (CDP)	Lead	8.33e-07	kg	Waterborne	treatment
Manufacturing	LCD glass mfg. (CDP)	Lead	2.01e-06	kg	Waterborne	surface water
Manufacturing	LCD glass mfg. (CDP)	Waste Batch (Ba, Pb) (D008 waste)	6.55e-05	kg	Hazardous waste	landfill

Table N-4. LCD Lead Outputs by Life-cycle Stage

Life-cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Manufacturing	LCD module mfg. (CDP)	Lead	6.17e-06	kg	Waterborne	surface water
Manufacturing	LCD monitor assembly (CDP)	Printed wiring board (PWB)	7.50e-03	kg	Solid waste	landfill
Manufacturing	LPG Production (DEAM)	Lead	5.93e-07	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Lead empds	5.60e-11	kg	Waterborne	surface water
Manufacturing	Natural Gas Prod. (DEAM)	Lead	3.42e-08	kg	Airborne	air
Manufacturing	Natural Gas Prod. (DEAM)	Lead empds	3.72e-14	kg	Waterborne	surface water
Manufacturing	PWB Mfg.	Lead empds	7.14e-06	kg	Waterborne	treatment
Manufacturing	PWB Mfg.	PWB-Lead contaminated waste oil	5.14e-03	kg	Hazardous waste	treatment
Manufacturing	PWB Mfg.	PWB-Solder dross	2.96e-02	kg	Hazardous waste	recycling/reuse
Manufacturing	US electric grid	Lead	2.47e-08	kg	Airborne	air
Use	LCD monitor use (CDP)	EOL LCD Monitor, incinerated	9.75e-01	kg	Solid waste	treatment
Use	LCD monitor use (CDP)	EOL LCD Monitor, landfilled	3.25e-01	kg	Hazardous waste	treatment
Use	LCD monitor use (CDP)	EOL LCD Monitor, landfilled	6.82e+00	kg	Solid waste	treatment
Use	LCD monitor use (CDP)	EOL LCD Monitor, recycled	9.75e-01	kg	Solid waste	treatment
Use	LCD monitor use (CDP)	EOL LCD Monitor, remanufactured	9.75e-01	kg	Solid waste	recycling/reuse
Use	US electric grid	Lead	4.76e-06	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead	-2.90e-08	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead empds	-1.90e-12	kg	Waterborne	surface water
End-of-life	LCD incineration (DEAM mix)	Lead	4.80e-06	kg	Airborne	air
End-of-life	LCD incineration (DEAM mix)	Lead empds	2.59e-10	kg	Waterborne	surface water
End-of-life	LCD landfilling (CDP)	EOL LCD Monitor, landfilled	8.94e-01	kg	Solid waste	landfill
End-of-life	LCD landfilling (CDP)	EOL LCD Monitor, landfilled	1.64e+00	kg	Hazardous waste	landfill
End-of-life	LCD landfilling (CDP)	Lead empds	2.40e-10	kg	Waterborne	surface water
End-of-life	LPG Production (DEAM)	Lead	4.87e-11	kg	Airborne	air
End-of-life	LPG Production (DEAM)	Lead empds	4.60e-15	kg	Waterborne	surface water

APPENDIX N

Table N-4. LCD Lead Outputs by Life-cycle Stage

Life-cycle Stage	Process	Output	Quantity	Units	Type	Disposition
End-of-life	Natural Gas Prod. (DEAM)	Lead	-7.20e-09	kg	Airborne	air
End-of-life	Natural Gas Prod. (DEAM)	Lead empds	-7.80e-15	kg	Waterborne	surface water
End-of-life	US electric grid	Lead	9.03e-10	kg	Airborne	air

Table N-5. CRT Life-Cycle Impacts Scores from Lead-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category							
			Nonrenew.	Haz. Waste	Rad	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.	
MP	ABS Production (DEAM)	Lead				4.24e-07				2.12e-07
MP	Aluminum Prod. (all virgin; EB)	Lead				2.40e-06				1.20e-06
MP	Ferrite mfg. (EB)	Lead				6.92e-05				3.46e-05
MP	Invar (DEAM mix)	Lead				7.24e-05				3.62e-05
MP	Lead (EB)	Lead				3.16e-03				1.58e-03
MP	Polycarbonate Production (PC; DEAM)	Lead				9.23e-07				4.62e-07
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead				2.20e-06				1.10e-06
MP	Styrene-butadiene Copolymer Prod. (DEAM)	Lead				4.14e-07				2.07e-07
MP	Aluminum Prod. (all virgin; EB)	Lead (Pb, ore)	6.30e-05							
MP	Ferrite mfg. (EB)	Lead (Pb, ore)	5.70e-08							
MP	Invar (DEAM mix)	Lead (Pb, ore)	5.84e-08							
MP	Lead (EB)	Lead (Pb, ore)	4.96e-01							
MP	Polycarbonate Production (PC; DEAM)	Lead (Pb, ore)	1.85e-06							
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead (Pb, ore)	5.79e-08							
MP	Aluminum Prod. (all virgin; EB)	Lead empds				1.74e-05			1.70e-04	8.72e-06
MP	Ferrite mfg. (EB)	Lead empds	1.04e-06			5.19e-07				
MP	Invar (DEAM mix)	Lead empds				5.96e-06			5.90e-05	2.98e-06

Table N-5. CRT Life-Cycle Impacts Scores from Lead-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category							
			Nonrenew.	Haz Waste	Rad	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.	
MP	Lead (EB)	Lead empds				5.50e-06			5.40e-05	2.75e-06
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead empds				1.77e-06			1.70e-05	8.83e-07
MP	Ferrite mfg. (EB)	Lead-210 (isotope)			1.82e-01					
MP	Invar (DEAM mix)	Lead-210 (isotope)			1.87e-01					
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead-210 (isotope)			6.54e-01					
Manufacturing	CRT glass mfg. (CDP)	Broken CRT glass		6.22e-07						
Manufacturing	CRT glass mfg. (CDP)	cinders from CRT glass mfg (70% PbO)		6.88e-06						
Manufacturing	CRT glass mfg. (CDP)	CRT glass faceplate EP dust (Pb) (D008 waste)		2.15e-06						
Manufacturing	CRT tube mfg. (CDP)	Frit		3.04e-06						
Manufacturing	CRT glass mfg. (CDP)	Hazardous sludge (Pb)		1.38e-06						
Manufacturing	CRT glass mfg. (CDP)	Lead	4.47e-01			8.74e-05	8.95e-01		8.70e-05	4.37e-05
Manufacturing	CRT tube mfg. (CDP)	Lead				6.03e-06			6.00e-06	3.01e-06
Manufacturing	Frit manufacturing (CDP)	Lead	4.67e-02			6.40e-10	9.33e-02			3.20e-10
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead				7.76e-08				3.88e-08
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead				8.28e-09				4.14e-09
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead				2.00e-07				9.99e-08
Manufacturing	LPG Production (DEAM)	Lead				2.47e-05				1.24e-05
Manufacturing	Natural Gas Prod. (DEAM)	Lead				4.33e-08				2.17e-08
Manufacturing	US electric grid	Lead				4.07e-07				2.04e-07
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead empds				6.55e-12			6.50e-11	3.27e-12
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead empds		5.32e-13	5.2E-					
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead empds				7.89e-12			7.80e-11	3.95e-12
Manufacturing	LPG Production (DEAM)	Lead empds				2.33e-09			2.30e-08	1.17e-09

APPENDIX N

Table N-5. CRT Life-Cycle Impacts Scores from Lead-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category						
			Nonrenew.	Haz. Waste	Rad	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.
Manufacturing	Natural Gas Prod. (DEAM)	Lead empds				4.72e-14		4.60e-13	2.36e-14
Manufacturing	CRT glass mfg. (CDP)	Lead contaminated grit (D008 waste)		2.99e-09					
Manufacturing	CRT glass mfg. (CDP)	Lead debris (D008 waste)		1.85e-08					
Manufacturing	CRT tube mfg. (CDP)	Lead sulfate cake		3.03e-08					
Manufacturing	CRT glass mfg. (CDP)	sludge from CRT glass mfg (1% PbO)		6.45e-07					
Manufacturing	CRT glass mfg. (CDP)	Waste Batch (Ba, Pb) (D008 waste)		1.22e-07					
Manufacturing	CRT glass mfg. (CDP)	Waste finishing sludge (Pb) (D008 waste)		2.32e-07					
Use	US electric grid	Lead				2.55e-05			1.27e-05
End-of-life	CRT Incineration (DEAM mix)	Lead		2.86e-05	1.43e-05				
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead				-8.90e-08			-4.40e-08
End-of-life	LPG Production (DEAM)	Lead				2.13e-10			1.07e-10
End-of-life	Natural Gas Prod. (DEAM)	Lead				-2.17e-08			-1.10e-08
End-of-life	US electric grid	Lead				2.55e-09			1.28e-09
End-of-life	CRT Incineration (DEAM mix)	Lead empds				1.62e-09		1.60e-08	8.10e-10
End-of-life	CRT landfilling (CDP)	Lead empds				1.58e-09		1.60e-08	7.89e-10
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Lead empds				-5.72e-12		-5.60e-11	-2.90e-12
End-of-life	LPG Production (DEAM)	Lead empds				2.01e-14		2.00e-13	1.01e-14
End-of-life	Natural Gas Prod. (DEAM)	Lead empds				-2.37e-14		-2.30e-13	-1.20e-14

MP = Materials processing.
Blank = not applicable.

Table N-6. LCD Life-Cycle Impact Scores from Lead-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category							
			Nonrenew	Haz. Waste	Solid Waste	Rad	ChrTox-pub	Aq. Tox.	Terr. Tox.	
MP	Aluminum Prod. (all virgin; EB)	Lead					8.94e-07			4.47e-07
MP	Natural Gas Prod. (DEAM)	Lead					3.03e-06			1.51e-06
MP	PET Resin Production (DEAM)	Lead					1.82e-07			9.08e-08
MP	PMMA Sheet Prod. (DEAM)	Lead					3.83e-07			1.92e-07
MP	Polycarbonate Production (PC; DEAM)	Lead					5.16e-07			2.58e-07
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead					1.08e-06			5.40e-07
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Lead					1.81e-07			9.04e-08
MP	Aluminum Prod. (all virgin; EB)	Lead (Pb, ore)	2.35e-05							
MP	PET Resin Production (DEAM)	Lead (Pb, ore)	1.82e-07							
MP	Polycarbonate Production (PC; DEAM)	Lead (Pb, ore)	1.03e-06							
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead (Pb, ore)	2.84e-08							
MP	Aluminum Prod. (all virgin; EB)	Lead cmpds					6.49e-06		6.40e-05	3.25e-06
MP	Natural Gas Prod. (DEAM)	Lead cmpds					3.30e-12		3.25e-11	1.65e-12
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead cmpds					8.65e-07		8.52e-06	4.33e-07
MP	Steel Prod., cold-rolled, semi-finished (EB)	Lead-210 (isotope)					3.21e-01			
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead					3.62e-09			1.81e-09
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead					1.28e-08			6.38e-09
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead					6.80e-09			3.40e-09
Manufacturing	LCD glass mfg. (CDP)	Lead					4.02e-06		4.02e-06	2.01e-06
Manufacturing	LCD module mfg. (CDP)	Lead					1.23e-05		1.23e-05	6.17e-06
Manufacturing	LPG Production (DEAM)	Lead					1.19e-06			5.93e-07
Manufacturing	Natural Gas Prod. (DEAM)	Lead					6.83e-08			3.42e-08
Manufacturing	US electric grid	Lead					4.94e-08			2.47e-08
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Lead cmpds					3.06e-13		3.01e-12	1.53e-13

APPENDIX N

Table N-6. LCD Life-Cycle Impact Scores from Lead-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category						
			Nonrenew	Haz. Waste	Solid Waste	Rad	ChrTox-pub	Aq. Tox.	Terr. Tox.
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Lead empds					8.20e-13	8.08e-12	4.10e-13
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Lead empds					2.69e-13	2.65e-12	1.34e-13
Manufacturing	LPG Production (DEAM)	Lead empds					1.12e-10	1.10e-09	5.60e-11
Manufacturing	Natural Gas Prod. (DEAM)	Lead empds					7.44e-14	7.33e-13	3.72e-14
Manufacturing	LCD monitor assembly (CDP)	Printed wiring board			9.38e-06				
Manufacturing	LCD glass mfg. (CDP)	Waste batch (Ba, Pb) (D008 waste)		5.67e-09					
Use	US electric grid	Lead					9.52e-06		4.76e-06
End-of Life	Fuel Oil #4 Prod. (DEAM mix)	Lead					-5.88e-08		-2.94e-08
End-of Life	LCD incineration (DEAM mix)	Lead					9.60e-06		4.80e-06
End-of Life	LPG Production (DEAM)	Lead					9.74e-11		4.87e-11
End-of Life	Natural Gas Prod. (DEAM)	Lead					-1.43e-08		-7.17e-09
End-of Life	US electric grid	Lead					1.81e-09		9.03e-10
End-of Life	Fuel Oil #4 Prod. (DEAM mix)	Lead empds					-3.78e-12	-3.72e-11	-1.89e-12
End-of Life	LCD incineration (DEAM mix)	Lead empds					5.19e-10	5.11e-09	2.59e-10
End-of Life	LCD landfilling (CDP)	Lead empds					4.80e-10	4.73e-09	2.40e-10
End-of Life	LPG Production (DEAM)	Lead empds					9.19e-15	9.06e-14	4.60e-15
End-of Life	Natural Gas Prod. (DEAM)	Lead empds					-1.56e-14	-1.54e-13	-7.81e-15

MP = Materials processing.
Blank = not applicable.

Table N-7. LCD Mercury Inputs by Life-cycle Stage

Life-cycle Stage	Process	Input	Quantity	Units	Type
Manufacturing	LCD CCFL mfg. (CDP)	Mercury	3.99e-06	kg	Primary material
Manufacturing	LCD backlight unit assembly (CDP)	Backlight lamp (CCFL)	1.94e-03	kg	Direct to assembly

APPENDIX N

Table N-8. CRT Mercury Outputs by Life-cycle Stage

Life-cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Materials Processing	ABS Production (DEAM)	Mercury	2.12e-07	kg	Airborne	air
Materials Processing	ABS Production (DEAM)	Mercury compounds	2.12e-07	kg	Waterborne	surface water
Materials Processing	Aluminum Prod. (all virgin; EB)	Mercury	2.02e-07	kg	Airborne	air
Materials Processing	Aluminum Prod. (all virgin; EB)	Mercury	8.93e-11	kg	Solid waste	landfill
Materials Processing	Ferrite mfg. (EB)	Mercury	1.62e-07	kg	Airborne	air
Materials Processing	Ferrite mfg. (EB)	Mercury	1.11e-12	kg	Solid waste	landfill
Materials Processing	Ferrite mfg. (EB)	Mercury compounds	1.03e-10	kg	Waterborne	surface water
Materials Processing	Invar (DEAM mix)	Mercury	2.12e-07	kg	Airborne	air
Materials Processing	Invar (DEAM mix)	Mercury	3.39e-11	kg	Solid waste	landfill
Materials Processing	Invar (DEAM mix)	Mercury compounds	1.06e-10	kg	Waterborne	surface water
Materials Processing	Lead (EB)	Mercury	1.51e-06	kg	Airborne	air
Materials Processing	Lead (EB)	Mercury	1.72e-11	kg	Solid waste	landfill
Materials Processing	Lead (EB)	Mercury compounds	1.50e-09	kg	Waterborne	surface water
Materials Processing	Polycarbonate Production (PC; DEAM)	Mercury	4.62e-07	kg	Airborne	air
Materials Processing	Polycarbonate Production (PC; DEAM)	Mercury compounds	4.62e-07	kg	Waterborne	surface water
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Mercury	3.26e-08	kg	Airborne	air
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Mercury	8.26e-14	kg	Solid waste	landfill
Materials Processing	Steel Prod., cold-rolled, semi-finished (EB)	Mercury compounds	8.58e-08	kg	Waterborne	surface water
Materials Processing	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury	2.07e-07	kg	Airborne	air
Materials Processing	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury compounds	2.07e-07	kg	Waterborne	surface water
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury	2.72e-09	kg	Airborne	air
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury compounds	3.77e-15	kg	Waterborne	surface water
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury	2.89e-10	kg	Airborne	air
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds	3.06e-16	kg	Waterborne	surface water
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury	6.94e-09	kg	Airborne	air

Table N-8. CRT Mercury Outputs by Life-cycle Stage

Life-cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury compounds	4.54e-15	kg	Waterborne	surface water
Manufacturing	Japanese Electric Grid	Mercury	1.18e-07	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Mercury	8.69e-07	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Mercury compounds	1.34e-12	kg	Waterborne	surface water
Manufacturing	Natural Gas Prod. (DEAM)	Mercury	1.88e-09	kg	Airborne	air
Manufacturing	Natural Gas Prod. (DEAM)	Mercury compounds	2.71e-17	kg	Waterborne	surface water
Manufacturing	US electric grid	Mercury	1.20e-07	kg	Airborne	air
Use	US electric grid	Mercury	7.51e-06	kg	Airborne	air
End-of-life	CRT Incineration (DEAM mix)	Mercury	-1.12e-07	kg	Airborne	air
End-of-life	CRT Incineration (DEAM mix)	Mercury compounds	2.15e-11	kg	Waterborne	surface water
End-of-life	CRT landfilling (CDP)	Mercury compounds	2.19e-11	kg	Waterborne	surface water
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury	-3.11e-09	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds	-3.29e-15	kg	Waterborne	surface water
End-of-life	LPG Production (DEAM)	Mercury	7.50e-12	kg	Airborne	air
End-of-life	LPG Production (DEAM)	Mercury compounds	1.16e-17	kg	Waterborne	surface water
End-of-life	Natural Gas Prod. (DEAM)	Mercury	-9.44e-10	kg	Airborne	air
End-of-life	Natural Gas Prod. (DEAM)	Mercury compounds	-1.36e-17	kg	Waterborne	surface water
End-of-life	US electric grid	Mercury	7.52e-10	kg	Airborne	air

APPENDIX N

Table N-9. LCD Mercury Outputs by Life-cycle Stage

Life-Cycle Stage	Process	Output	Quantity	Units	Type	Disposition
MP	Aluminum Prod. (all virgin; EB)	Mercury	7.51e-08	kg	Airborne	air
MP	Natural Gas Prod. (DEAM)	Mercury	1.32e-07	kg	Airborne	air
MP	PET Resin Production (DEAM)	Mercury	9.08e-08	kg	Airborne	air
MP	PMMA Sheet Prod. (DEAM)	Mercury	1.92e-07	kg	Airborne	air
MP	Polycarbonate Production (PC; DEAM)	Mercury	2.58e-07	kg	Airborne	air
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury	1.60e-08	kg	Airborne	air
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury	9.04e-08	kg	Airborne	air
MP	Aluminum Prod. (all virgin; EB)	Mercury	3.32e-11	kg	Solid waste	landfill
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury	4.05e-14	kg	Solid waste	landfill
MP	PET Resin Production (DEAM)	Mercury	9.08e-08	kg	Waterborne	surface water
MP	Natural Gas Prod. (DEAM)	Mercury compounds	1.89e-15	kg	Waterborne	surface water
MP	PMMA Sheet Prod. (DEAM)	Mercury compounds	1.92e-07	kg	Waterborne	surface water
MP	Polycarbonate Production (PC; DEAM)	Mercury compounds	2.58e-07	kg	Waterborne	surface water
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury compounds	4.21e-08	kg	Waterborne	surface water
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury compounds	9.04e-08	kg	Waterborne	surface water
Manufacturing	LCD CCFL mfg. (CDP)	Backlight lamp (CCFL)	1.94e-03	kg	Product	
Manufacturing	LCD backlight unit assembly (CDP)	Broken CCFL	2.69e-07	kg	Solid waste	landfill
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury	1.27e-10	kg	Airborne	air
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury	4.46e-10	kg	Airborne	air
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury	2.36e-10	kg	Airborne	air
Manufacturing	Japanese Electric Grid	Mercury	3.97e-07	kg	Airborne	air
Manufacturing	LPG Production (DEAM)	Mercury	4.17e-08	kg	Airborne	air
Manufacturing	Natural Gas Prod. (DEAM)	Mercury	2.97e-09	kg	Airborne	air
Manufacturing	US electric grid	Mercury	1.45e-08	kg	Airborne	air
Manufacturing	LCD monitor assembly (CDP)	Mercury	2.00e-06	kg	Hazardous waste	recycling/reuse

Table N-9. LCD Mercury Outputs by Life-cycle Stage

Life-Cycle Stage	Process	Output	Quantity	Units	Type	Disposition
Manufacturing	LCD module mfg. (CDP)	Mercury	9.69e-08	kg	Waterborne	surface water
Manufacturing	LCD CCFL mfg. (CDP)	Mercury	8.33e-08	kg	Waterborne	treatment
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury compounds	1.76e-16	kg	Waterborne	surface water
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds	4.71e-16	kg	Waterborne	surface water
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury compounds	1.55e-16	kg	Waterborne	surface water
Manufacturing	LPG Production (DEAM)	Mercury compounds	6.44e-14	kg	Waterborne	surface water
Manufacturing	Natural Gas Prod. (DEAM)	Mercury compounds	4.28e-17	kg	Waterborne	surface water
Manufacturing	LCD backlight unit assembly (CDP)	Waste CCFL, with mercury	8.17e-10	kg	Hazardous waste	treatment
Manufacturing	LCD backlight unit assembly (CDP)	Waste glass, with mercury	1.05e-10	kg	Hazardous waste	landfill
Manufacturing	LCD CCFL mfg. (CDP)	Wastewater stream, from CCFL mfg.	1.67e+02	kg	Waterborne	treatment
Use	US electric grid	Mercury	2.80e-06	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury	-2.05e-09	kg	Airborne	air
End-of-life	LCD incineration (DEAM mix)	Mercury	-8.42e-08	kg	Airborne	air
End-of-life	LPG Production (DEAM)	Mercury	3.42e-12	kg	Airborne	air
End-of-life	Natural Gas Prod. (DEAM)	Mercury	-6.23e-10	kg	Airborne	air
End-of-life	US electric grid	Mercury	5.32e-10	kg	Airborne	air
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds	-2.17e-15	kg	Waterborne	surface water
End-of-life	LCD incineration (DEAM mix)	Mercury compounds	8.67e-12	kg	Waterborne	surface water
End-of-life	LCD landfilling (CDP)	Mercury compounds	7.50e-12	kg	Waterborne	surface water
End-of-life	LPG Production (DEAM)	Mercury compounds	5.29e-18	kg	Waterborne	surface water
End-of-life	Natural Gas Prod. (DEAM)	Mercury compounds	-8.98e-18	kg	Waterborne	surface water

MP = Materials processing

APPENDIX N

Table N-10. CRT Life-Cycle Impact Scores from Mercury-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category					
			Haz. Waste	Solid Waste	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.
MP	ABS Production (DEAM)	Mercury			2.12e-07			2.12e-07
MP	Aluminum Prod. (all virgin; EB)	Mercury			2.02e-07			2.02e-07
MP	Ferrite mfg. (EB)	Mercury			1.62e-07			1.62e-07
MP	Invar (DEAM mix)	Mercury			2.12e-07			2.12e-07
MP	Lead (EB)	Mercury			1.51e-06			1.51e-06
MP	Polycarbonate Production (PC; DEAM)	Mercury			4.62e-07			4.62e-07
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury			3.26e-08			3.26e-08
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury			2.07e-07			2.07e-07
MP	ABS Production (DEAM)	Mercury compounds			1.12e-04			1.97e-04
MP	Ferrite mfg. (EB)	Mercury compounds			5.45e-08			9.63e-08
MP	Invar (DEAM mix)	Mercury compounds			5.58e-08			9.86e-08
MP	Lead (EB)	Mercury compounds			7.89e-07			1.39e-06
MP	Polycarbonate Production (PC; DEAM)	Mercury compounds			2.44e-04			4.30e-04
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury compounds			4.53e-05			8.00e-05
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury compounds			1.09e-04			1.93e-04
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury			2.72e-09			2.72e-09
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury			2.89e-10			2.89e-10
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury			6.94e-09			6.94e-09
Manufacturing	Japanese Electric Grid	Mercury			1.18e-07			1.18e-07
Manufacturing	LPG Production (DEAM)	Mercury			8.69e-07			8.69e-07
Manufacturing	Natural Gas Prod. (DEAM)	Mercury			1.88e-09			1.88e-09
Manufacturing	US electric grid	Mercury			1.20e-07			1.20e-07
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury compounds			1.99e-12			3.51e-12
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds			1.61e-13			2.85e-13

Table N-10. CRT Life-Cycle Impact Scores from Mercury-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category						
			Haz. Waste	Solid Waste	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.	
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury compounds			2.39e-12	4.23e-12	2.39e-12	2.39e-12	
Manufacturing	LPG Production (DEAM)	Mercury compounds			7.08e-10		1.25e-09	7.07e-10	
Manufacturing	Natural Gas Prod. (DEAM)	Mercury compounds			1.43e-14		2.53e-14	1.43e-14	
Use	US electric grid	Mercury			7.51e-06			7.51e-06	
End-of-life	CRT Incineration (DEAM mix)	Mercury			-1.12e-07			-1.12e-07	
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury			-3.11e-09			-3.11e-09	
End-of-life	LPG Production (DEAM)	Mercury			7.50e-12			7.50e-12	
End-of-life	Natural Gas Prod. (DEAM)	Mercury			-9.44e-10			-9.44e-10	
End-of-life	US electric grid	Mercury			7.52e-10			7.52e-10	
End-of-life	CRT Incineration (DEAM mix)	Mercury compounds			1.13e-08		2.00e-08	1.13e-08	
End-of-life	CRT landfilling (CDP)	Mercury compounds			1.15e-08		2.04e-08	1.15e-08	
End-of-life	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds			-1.74e-12		-3.06e-12	-1.73e-12	
End-of-life	LPG Production (DEAM)	Mercury compounds			6.11e-15		1.08e-14	6.10e-15	
End-of-life	Natural Gas Prod. (DEAM)	Mercury compounds			-7.18e-15		-1.27e-14	-7.16e-15	

MP = Materials processing.
Blank = not applicable.

APPENDIX N

Table N-11. LCD Life-Cycle Impact Scores from Mercury-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category					
			Haz. Waste	Solid Waste	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.
MP	Aluminum Prod. (all virgin; EB)	Mercury			7.51e-08			7.51e-08
MP	Natural Gas Prod. (DEAM)	Mercury			1.32e-07			1.32e-07
MP	PET Resin Production (DEAM)	Mercury			1.82e-07		1.82e-07	1.82e-07
MP	PMMA Sheet Prod. (DEAM)	Mercury			1.92e-07			1.92e-07
MP	Polycarbonate Production (PC; DEAM)	Mercury			2.58e-07			2.58e-07
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury			1.60e-08			1.60e-08
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury			9.04e-08			9.04e-08
MP	Natural Gas Prod. (DEAM)	Mercury compounds			1.00e-12		1.77e-12	9.98e-13
MP	PMMA Sheet Prod. (DEAM)	Mercury compounds			1.01e-04		1.79e-04	1.01e-04
MP	Polycarbonate Production (PC; DEAM)	Mercury compounds			1.36e-04		2.40e-04	1.36e-04
MP	Steel Prod., cold-rolled, semi-finished (EB)	Mercury compounds			2.22e-05		3.92e-05	2.22e-05
MP	Styrene-butadiene Copolymer Prod. (DEAM mix)	Mercury compounds			4.77e-05		8.42e-05	4.76e-05
Manufacturing	LCD backlight unit assembly (CDP)	Broken CCFL		1.98e-11				
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury			1.27e-10			1.27e-10
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury			4.46e-10			4.46e-10
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury			2.36e-10			2.36e-10
Manufacturing	Japanese Electric Grid	Mercury			3.97e-07			3.97e-07
Manufacturing	LCD CCFL mfg. (CDP)	Mercury				3.99e-06		
Manufacturing	LCD module mfg. (CDP)	Mercury			9.69e-08		1.94e-07	9.69e-08
Manufacturing	LPG Production (DEAM)	Mercury			4.17e-08			4.17e-08
Manufacturing	Natural Gas Prod. (DEAM)	Mercury			2.97e-09			2.97e-09
Manufacturing	US electric grid	Mercury			1.45e-08			1.45e-08
Manufacturing	Fuel Oil #2 Prod. (DEAM)	Mercury compounds			9.27e-14		1.64e-13	9.25e-14

Table N-11. LCD Life-Cycle Impact Scores from Mercury-based Materials

Life-cycle Stage	Process	Input/Output	Impact Scores by Category							
			Haz. Waste	Solid Waste	ChrTox-pub	ChrTox-occ	Aq. Tox.	Terr. Tox.		
Manufacturing	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds			2.49e-13			4.39e-13		2.48e-13
Manufacturing	Fuel Oil #6 Prod. (DEAM)	Mercury compounds			8.15e-14			1.44e-13		8.14e-14
Manufacturing	LPG Production (DEAM)	Mercury compounds			3.40e-11			6.00e-11		3.39e-11
Manufacturing	Natural Gas Prod. (DEAM)	Mercury compounds			2.26e-14			3.98e-14		2.25e-14
Manufacturing	LCD backlight unit assembly (CDP)	Waste glass, with mercury	7.73e-15							
Use	US electric grid	Mercury			2.80e-06					2.80e-06
End of Life	Fuel Oil #4 Prod. (DEAM mix)	Mercury			-2.05e-09					-2.05e-09
End of Life	LCD incineration (DEAM mix)	Mercury			-8.42e-08					-8.42e-08
End of Life	LPG Production (DEAM)	Mercury			3.42e-12					3.42e-12
End of Life	Natural Gas Prod. (DEAM)	Mercury			-6.23e-10					-6.23e-10
End of Life	US electric grid	Mercury			5.32e-10					5.32e-10
End of Life	Fuel Oil #4 Prod. (DEAM mix)	Mercury compounds			-1.15e-12			-2.02e-12		-1.14e-12
End of Life	LCD incineration (DEAM mix)	Mercury compounds			4.57e-09			8.08e-09		4.57e-09
End of Life	LCD landfilling (CDP)	Mercury compounds			3.96e-09			6.99e-09		3.95e-09
End of Life	LPG Production (DEAM)	Mercury compounds			2.79e-15			4.93e-15		2.78e-15
End of Life	Natural Gas Prod. (DEAM)	Mercury compounds			-4.74e-15			-8.37e-15		-4.73e-15

MP = Materials processing.
Blank = not applicable.

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