

## Appendix D. MN State-Specific Data

Table D-1. Minnesota State-Specific and SCC-Specific Heat Values

Type of Fuel	Heating Value (E6BTU)	Fuel Unit of Measure	SCC	Comments
ANIMAL FAT	125	E3GAL	@	GHG MRR Subpart C (10/30/2009)
BAGASSE	8.25	TON	@	GHG MRR: Subpart C, Augmented from Ag Byproduct 10/30/2009
BARK	9	TON	@	AP-42 Appendix A (09/1985)
BIOMASS SOLID	9	TON	10101207	Augmented from SCC10100902
BIOMASS SOLID	16	TON	10101209	Augmented from SCC10100908
BUTANE	97.4	E3GAL	@	AP-42 Chapter 1.5-1 (07/2008)
COAL,ANTH	24.6	TON	@	AP-42 Appendix A (09/1985)
COAL,BIT	24.93	TON	@	GHG MRR: Subpart C (10/30/2009)
COAL,SUBBIT	17.25	TON	@	GHG MRR: Subpart C (10/30/2009)
COKE	24.8	TON	@	GHG MRR: Subpart C (10/30/2009)
COKE	24.8	TON	39000801	USEPA MRR GHG 10/30/2009
COKE OVEN GS	599	E6FT3	@	GHG MRR Subpart C, 10/30/2009
COKE/BLAST GAS	92	E6FT3	@	GHG MRR: Subpart C, Augmented from Coke Oven Gas 10/30/2009
CRUDE OIL	138	E3GAL	@	GHG MRR: Subpart C 10/30/2009
DIESEL	137	E3GAL	@	AP-42 Appendix A (09/1985)
DIESEL FUEL	137	E3GAL	@	Augmented from Diesel
DIGESTER GAS	841	E6FT3	@	GHG MRR: Subpart C Augmented from Biogas 10/30/2009
DIGESTER GAS	619	E6FT3	@	MN GHG EI 2008
DIST OIL 1,2	140	E3GAL	@	Augmented from Distillate Oil
DISTILLATE	140	E3GAL	@	Augmented from Distillate Oil
DISTILLATE OIL	140	E3GAL	@	AP-42 Appendix A (09/1985)
DISTILLATE OIL 1	139	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
DISTILLATE OIL 2	140	E3GAL	@	AP-42 Table 1.3-2 (05/2010)
DISTILLATE OIL 4	146	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
DRIED SLUDGE	9.95	TON	@	GHG MRR: Subpart C Augmented from MSW 10/30/2009
DUAL FUEL	1050	E6FT3	@	Augmented from NG
ETHANE	69	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
ETHANE	68	E3GAL	@	GHG MRR: Subpart C (04/02/2013)
ETHANOL	84	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
ETHYLENE	100	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
ETHYLENE	58	E3GAL	@	GHG MRR Subpart C (04/02/2013)
FUEL	135	E3GAL	20400101	US EPA GHG MRR
FUEL	135	E3GAL	20400199	USEPA GHG MRR 10/30/2009
GAS	1050	E6FT3	@	AP-42 Appendix A (09/1985)
GASOLINE	130	E3GAL	@	AP-42 Appendix A (09/1985)

Type of Fuel	Heating Value (E6BTU)	Fuel Unit of Measure	SCC	Comments
ISOBUTENE	97	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
ISOBUTENE	99	E3GAL	@	GHG MRR Subpart C (04/02/2013)
JET A	135	E3GAL	@	GHG MRR: Subpart C Augmented from Jet Kerosene 10/30/2009
JET FUEL	135	E3GAL	@	GHG MRR: Subpart C Augmented from Jet Kerosene 10/30/2009
JET KEROSENE	135	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
JET KEROSENE	135	E3GAL	20400111	USEPA MRR GHG 10/30/2009
JET NAPHTHA	135	E3GAL	@	GHG MRR: Subpart C Augmented from Jet Kerosene 10/30/2009
JET NAPHTHA	135	E3GAL	20300901	US EPA GHG MRR 10/30/2009
JET NAPHTHA	135	E3GAL	20400112	US EPA MRR GHG 10/30/2009
KEROSENE	135	E3GAL	@	AP-42 Appendix A (09/1985)
KEROSENE	135	E3GAL	20400402	US EPA GHG MRR 10/30/2009
LANDFILL GAS	841	E6FT3	@	GHG MRR: Subpart C Augmented from Biogas 10/30/2009
LANDFILL GAS	490	E6FT3	@	Renewable Energy Annual EIA 2010
LIGNITE	14.21	TON	@	GHG MRR: Subpart C (10/30/2009)
LPG	94	E3GAL	@	AP-42 Appendix A (09/1985)
METHANE	1020	E6FT3	@	AP-42 Table 1.5-1 (07/2008)
NATURAL GAS	1050	E6FT3	@	AP-42 Appendix A (09/1985)
PROCESS GAS	1388	E6FT3	@	Augmented from Natural Gas
PROCESS GAS	599	E6FT3	10100704	USEPA GHG MRR 10/30/2009
PROCESS GAS	92	E6FT3	10100707	US EPA MRR 10/30/2009
PROCESS GAS	841	E6FT3	10100711	USEPA MRR GHG 10/30/2009
PROCESS GAS	599	E6FT3	10200704	USEPA MRR GHG 10/30/2009
PROCESS GAS	92	E6FT3	10200707	US EPA GHG MRR 10/30/2009
PROCESS GAS	841	E6FT3	20100707	US EPA MRR 'Augmented from Biogas (Captured Methane)' 10/30/2009
PROCESS GAS	490	E6FT3	20100707	Renewable Energy Annual, EIA 2010
PROCESS GAS	841	E6FT3	39990024	EPA MRR Augmented from 'Biogas (Captured Methane)' 10/30/2009
PROCESS GAS	490	E6FT3	39990024	Renewable Energy Annual, EIA, 2010
PROPANE	90.5	E3GAL	@	AP-42 Chapter 1.5-1 (07/2008)
PROPANE-BUTANE	94	E3GAL	@	Augmented from LPG
PROPYLENE	91	E3GAL	@	GHG MRR: Subpart C (10/30/2009)
RDF	11	TON	@	AP-42 Chapter 2.1-8 (10/1996)
RDF	26.87	TON	10101204	US EPA GHG MRR 10/30/2009
RESID/CRUD O	138	E3GAL	@	GHG MRR: Subpart C Augmented from Crude Oil 10/30/2009
RESIDUAL OIL	150	E3GAL	@	AP-42 Appendix A (09/1985)
RESIDUAL OIL 5	140	E3GAL	@	GHG MRR: Subpart C (10/30/2009)

Type of Fuel	Heating Value (E6BTU)	Fuel Unit of Measure	SCC	Comments
RESIDUAL OIL 6	150	E3GAL	@	AP-42 Table 1.3-2 (05/2010)
SAWDUST	10.4	TON	@	
SEWAGE GREASE SK	135	E3GAL	@	
SEWAGE GREASE SK	138	E3GAL	@	
SLUDGE	9.95	TON	@	
TIRES	26.87	TON	@	
TIRES	28	TON	@	
WASTE GAS	841	E6FT3	@	
WASTE LIQUID	135	E3GAL	@	
WASTE LIQUID	138	E3GAL	@	
WASTE OIL	150	E3GAL	@	
WASTE OIL	125	E3GAL	10201303	
WASTE,SOLID	9.95	TON	@	
WOOD	10.4	TON	@	
WOOD	16	TON	10100908	
WOOD	16	TON	10200908	
WOOD	16	TON	10300908	
WOOD/BARK	9	TON	@	

Note: @ in the SCC column means the heat value can be used for any SCCs if there are no process-specific and SCC-specific heat values.

Table D-2. Minnesota State-Specific Default Percent Sulfur (S%) Content Values

Material	Default Sulfur % by Weight	Notes*
COAL,BIT	1.0605	
COAL,SUBBIT	0.364477612	
COKE	2.119733333	
DIESEL FUEL	0.226209957	
DISTILLATE	0.22892973	
NATURAL GAS	0.15986	
RESIDUAL OIL	1.205465049	
WASTE OIL	1.074722222	
PROPANE	0.2	
LPG	0.2	
BUTANE	0.2	
PROCESS GAS	0.15986	
COAL,ANTH	0.75	
RESIDUAL OIL 6	1.205465049	Same as RESIDUAL OIL
RESIDUAL OIL 5	1.205465049	Same as RESIDUAL OIL
OIL	1.205465049	Same as RESIDUAL OIL

Material	Default Sulfur % by Weight	Notes*
LIGNITE	0.7	AP-42**
CRUDE OIL	1.399166667	US average***
DISTILLATE OIL 2	0.22892973	Same as DISTILLATE
DISTILLATE OIL 4	0.22892973	Same as DISTILLATE
DISTILLATE OIL	0.22892973	Same as DISTILLATE
DIESEL	0.226209957	Same as DIESEL FUEL

\*. The default sulfur % were calculated from data for the SCCs that have formulas using sulfur contents in the 2008 state emission inventory if not specified.

\*\* . [AP- 42 APPENDIX A](#).

\*\*\*. [2011 U.S. Sulfur Content](#) (Weighted Average) of Crude Oil Input to Refineries (Percent).

Table D-3. Minnesota State-Specific Default Percent Ash (A%) Content Values

Type of Fuel	Default Ash % by Weight	Notes*
COAL,BIT	8.322800016	
COAL,SUBBIT	5.124242423	
COKE	5.6168	
WASTE OIL	0.594642857	
COAL,ANTH	11.5	
LIGNITE	6.2	AP-42**

\*. The default ash % were calculated from data for the SCCs that have formulas using ash % in the 2008 state emission inventory if not specified.

\*\* . [AP- 42 APPENDIX A](#).