

Handout 1.3.1 Covered Product Data

C&T § 95891 Table 9-1: Product-Based Emissions Efficiency Benchmarks¹

NAICS Sector Definition	NAICS code	Activity (a)	Benchmark (B _a)	Benchmark Units
Crude Petroleum and Natural Gas Extraction	211111	Thermal EOR Crude Oil Extraction	0.0811	Allowances / Barrel of Oil Eqv. Produced Using Thermal EOR
		Non Thermal Crude Oil Extraction	0.0076	Allowances / Barrel of Non Thermal Crude Oil Eqv.
		Natural Gas Processing ≥ 25 MMscf/day	0.0220	Allowances / Barrel of Gas Processed Eqv.
Natural Gas Liquid Extraction	211112	Natural Gas Liquid Processing	0.0118	Allowances / Barrel of Natural Gas Liquids Produced
Potash, Soda, and Borate Mineral Mining	212391	Mining and Manufacturing of Soda Ash and Related Products	0.948	Allowances / Short Ton of Soda Ash Equivalent (Soda Ash, Biocarb, Borax, V-Bor, DECA, PYROBOR, Boric Acid, and Sulfate)
All Other Nonmetallic Mineral Mining	212399	Freshwater Diatomite Filter Aids Manufacturing	0.418	Allowances / Short Ton of Freshwater Diatomite Filter Aids

NAICS Sector Definition	NAICS code	Activity (a)	Benchmark (B _a)	Benchmark Units
Fruit and vegetable canning	311421	Aseptic Tomato Paste Processing	0.353	Allowances / Short Ton of 31% NTSS Aseptic Tomato Paste
		Aseptic Whole and Diced Tomato Processing	0.179	Allowances / Short Ton of Aseptic Whole and Diced Tomatoes
		Non-Aseptic Tomato Paste and Tomato Puree Processing	0.315	Allowances / Short Ton of 24% NTSS Non-Aseptic Tomato Paste and Tomato Puree
		Non-Aseptic Whole and Diced Tomato Processing	0.135	Allowances / Short Ton of Non-Aseptic Whole and Diced Tomatoes
		Non-Aseptic Tomato Juice Processing	0.163	Allowances / Short Ton of Non-Aseptic Tomato Juice
Poultry Processing	311615	Whole Chicken and Chicken Parts Processing	0.0330	Allowances / Short Ton of Whole Chicken and Chicken Parts
		Poultry Deli Product Processing	0.0353	Allowances / Short Ton of Poultry Deli Product
		Protein Meal and Fat Processing	0.396	Allowances / Short Ton of Protein Meal and Fat
Dried and Dehydrated Food Manufacturing	311423	Dehydrated Garlic Processing	0.824	Allowances / Short Ton of Dehydrated Garlic
		Dehydrated Onion Processing	1.01	Allowances / Short Ton of Dehydrated Onion
		Dehydrated Chili Pepper Processing	1.29	Allowances / Short Ton of Dehydrated Chili Pepper

NAICS Sector Definition	NAICS code	Activity (a)	Benchmark (B _a)	Benchmark Units
		Dehydrated Spinach Processing	5.56	Allowances / Short Ton of Dehydrated Spinach
		Dehydrated Parsley Processing	3.21	Allowances / Short Ton of Dehydrated Parsley
Dairy Product Manufacturing	31151	Milk, Buttermilk, Skim Milk, and Ultrafiltered Milk Processing	0.0147	Allowances / Short Ton of Milk, Buttermilk, Skim Milk, and Ultrafiltered Milk
		Cream processing	0.0153	Allowances / Short Ton of Cream
		Butter processing	0.0391	Allowances / Short Ton of Butter
		Condensed Milk Processing	0.0368	Allowances / Short Ton of Condensed Milk
		Nonfat Dry Milk and Skimmed Milk Powder (Low Heat) Processing	0.380	Allowances / Short Ton of Nonfat Dry Milk and Skimmed Milk Powder (Low Heat)
		Nonfat Dry Milk and Skimmed Milk Powder (Medium Heat and High Heat) Processing	0.425	Allowances / Short Ton of Nonfat Dry Milk and Skimmed Milk Powder (Medium Heat and High Heat)
		Buttermilk Powder Processing	0.501	Allowances / Short Ton of Buttermilk Powder
		Dairy Product Solids for Animal Feed Processing	0.0241	Allowances / Short Ton of Dairy Product Solids for Animal Feed
		Intermediate Dairy Ingredients Processing	0.0808	Allowances / Short Ton of Intermediate Dairy Ingredients

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		Cheese Processing	0.114	Allowances / Short Ton of Cheese
		Lactose Processing	0.272	Allowances / Short Ton of Lactose
		Whey Protein Concentrate Processing	1.28	Allowances / Short Ton of Whey Protein Concentrate
		Deproteinized Whey Processing	0.764	Allowances / Short Ton of Deproteinized Whey
Roasted Nuts and Peanut Butter Manufacturing	311911	Pistachio Processing	0.221	Allowances / Short Ton of Pistachios
		Almond Processing	0.0714	Allowances / Short Ton of Almonds
Snack Food Manufacturing	31191	Fried Potato Chips Processing	0.834	Allowances / Short Ton of Fried Potato Chips
		Baked Potato Chips Processing	0.517	Allowances / Short Ton of Baked Potato Chips
		Corn Chips Processing	0.580	Allowances / Short Ton of Corn Chips
		Corn Curls Processing	0.446	Allowances / Short Ton of Corn Curls
		Pretzel Processing	0.633	Allowances / Short Ton of Pretzels
Beet sugar manufacturing	311313	Beet sugar manufacturing	0.611	Allowances / short ton Granulated-Refined Sugar

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Breweries	312120	Lager Beer Manufacturing	0.178	Allowances / Thousand Gallons of Lager Beer
Wineries	312130	Distilled Spirits Production	1.13×10^{-3}	Allowances / Proof Gallons of Distilled Spirits
		Dry Color Concentrate Production	12.0	Allowances / Short ton of Dry Color Concentrate
		Grape Juice Concentrate Production	1.59×10^{-3}	Allowances / Gallons of Grape Juice Concentrate
		Grape Seed Extract Production	9.48	Allowances / Short ton of Grape Seed Extract
		Liquid Color Concentrate Production	6.95×10^{-3}	Allowances / Gallons of Liquid Color Concentrate
Paper (except Newsprint) Mills	322121	Bathroom Tissue Manufacturing	0.108	Allowances / Air Dried Short Ton of Bathroom Tissue produced adjusted by water absorption capacity

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		Facial Tissue Manufacturing	1.32	Allowances / Air Dried Short Ton of Facial Tissue
		Delicate Task Wipers Manufacturing	1.32	Allowances / Air Dried Short Ton of Delicate Task Wipers
		Paper Towel Manufacturing	1.54	Allowances / Air Dried Short Ton of Paper Towel
Paperboard Mills	322130	Recycled Boxboard Manufacturing	0.516	Allowances / Air Dried Short Ton of Recycled Boxboard
		Recycled Linerboard (Testliner) Manufacturing	0.562	Allowances / Air Dried Short Ton of Recycled Linerboard
		Recycled Medium (Fluting) Manufacturing	0.392	Allowances / Air Dried Short Ton of Recycled Medium
Petroleum Refineries	324110	Petroleum Refining	3.89	Allowances / Complexity Weighted Barrel
All Other Petroleum and Coal Products Manufacturing	324199	Coke Calcining	0.632	Allowances/ Metric Ton Calcined Coke
Industrial Gas Manufacturing	325120	On –Purpose Hydrogen Gas Production	8.94	Allowances / Metric Ton of On – Purpose Hydrogen Gas

NAICS Sector Definition	NAICS code	Activity (a)	Benchmark (B _a)	Benchmark Units
		Liquid Hydrogen Production	11.9	Allowances / Metric Ton of Liquid Hydrogen Sold
Nitrogenous Fertilizer Manufacturing	325311	Nitric Acid Production	0.349	Allowances / Short ton of nitric acid (HNO ₃ 100%)
		Calcium Ammonium Nitrate Solution Production	0.0902	Allowances / Short ton of Calcium Ammonium Nitrate Solution
Flat Glass Manufacturing	327211	Flat glass Manufacturing	0.495	Allowances / Short Ton of Flat Glass Pulled
Glass Container Manufacturing	327213	Container Glass Manufacturing	0.270	Allowances / Short Ton of Container Glass Pulled
Mineral Wool Manufacturing	327993	Fiber Glass Manufacturing	0.394	Allowances / Short Ton of Fiberglass Pulled
Cement Manufacturing	327310	Cement Manufacturing	0.742	Allowances / Short ton of adjusted clinker and mineral additives produced
Lime Manufacturing	327410	Dolime Manufacturing	1.40	Allowances / Short Ton of Dolime Produced
Gypsum Product Manufacturing	327420	Plaster Manufacturing	0.0454	Allowances / Short Ton of Plaster Sold as a Separate Finished Product

NAICS Sector Definition	NAICS code	Activity (a)	Benchmark (B _a)	Benchmark Units
		Stucco Manufacturing	0.134	Allowances / Short Ton of Stucco used to produce saleable plasterboard
Iron and Steel Mills	331111	Steel Production Using an Electric Arc Furnace	0.170	Allowances / Short ton of Steel produced using EAF
Secondary smelting and alloying of aluminum	331314	Aluminum and Aluminum Alloy Billet Manufacturing	0.371	Allowances / Short ton of Aluminum and Aluminum alloy Billet
Secondary smelting, refining, and alloying of nonferrous metal (except copper and aluminum)	331492	Lead Acid Battery Recycling	0.403	Allowances / Short Ton of Lead and Lead Alloys
Iron Foundries	331511	Ductile Iron Pipe Manufacturing	0.561	Allowances / Short ton of Ductile Iron Pipes
Nonferrous Forging	332112	Seamless Rolled Ring	3.14	Allowances / Short ton of Seamless Rolled Ring
Rolled Steel Shape Manufacturing	331221	Hot Rolled Steel Sheet Production	0.0843	Allowances / Short ton of hot rolled steel sheet
		Pickled Steel Sheet Production	0.0123	Allowances / Short ton of pickled steel sheet
		Cold Rolled and Annealed Steel Sheet Production	0.0520	Allowances / Short ton of cold rolled and annealed steel sheet

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		Galvanized Steel Sheet Production	0.0504	Allowances / Short ton of galvanized steel sheet
		Tin Steel Plate Production	0.111	Allowances / Short ton of tin plate
Turbine and Turbine Generator Set Units Manufacturing	333611	Testing of Turbines and Turbine Generator Sets	0.00782	Allowances / Horsepower tested