



AP-42 Section	<u>9.12.1</u>
Reference	<u>4</u>
Report Sect.	<u>2</u>
Reference	<u>8</u>

BEER INSTITUTE

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Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

February 15, 1995

Dallas W. Safriet
Environmental Engineer
U.S. Environmental Protection Agency
Emission Factor Inventory Group (MD-14)
Research Triangle Park, North Carolina 27711

Re: Draft Version of Section 9.12.1, Malt Beverages For Publication
in AP-42, Compilation of Air Pollutant Emission Factors

Dear Mr. Safriet:

Enclosed please find a copy of comments developed by members of the Beer Institute (Anheuser Busch Companies, Miller Brewing Co., Coors Brewing Co., Stroh Brewery Company, G. Heileman Brewing Co., Pabst Brewing Co., and Genesee Brewing Co.) on the draft version of Section 9.12.1, Malt Beverages, which has been proposed for publication in AP-42, the EPA Compilation of Air Pollutant Emission Factors. The Beer Institute is a national trade association for the malt beverage industry.

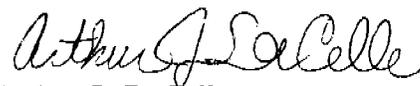
These comments are submitted based on EPA's public guidance document Public Participation Procedures for EPA's Emissions Estimation Guidance Materials and are being submitted in a timely manner based on the Beer Institute's recent correspondence dated January 27, 1995.

EPA's proposed Section 9.12.1 (Malt Beverages) for inclusion in AP-42 is of vital interest to the malt brewing industry. Pursuant to section 130 of the Clean Air Act, the Beer Institute wishes to have the opportunity to participate in the development and evaluation of this section of the AP-42 manual and to act as a public reviewer in connection with any proposed changes to Section 9.12.1. After you have had an opportunity to review these comments, the Beer Institute wishes to meet with EPA officials to discuss its view on this emission factor initiative in further detail. We would appreciate being contacted in a timely manner to arrange this meeting.

Mr. Dallas W. Safriet continued...

Thank you for your attention to the Beer Institute's views on this matter. If you have any questions regarding these comments or any general questions regarding the malt beverage industry, please do not hesitate to contact the undersigned.

Sincerely,



Arthur J. DeCelle
General Counsel

DMS/AD:jlc
Encls.

**Emission Factor Documentation for AP-42, Section 9.12.1, Malt Beverages
Comments on Draft November 1994 Report**

February 15, 1995

The comments listed below are common to the majority of brewing segment. Comments on use of specific testing data and subsequent emission factor development presented in Section 4 will be addressed separately by individual brewers.

- Page 2-1; 1st paragraph; Delete phrase (used for industrial purposes). Ethanol is used for a variety of non-industrial purposes.
- Clarify that factors for three of the SCC operations are included in this report; Drying spent grains, Brewing and Aging. Grain Handling and Malt Drying should be covered in other sections of AP-42.
- Page 2-1; last paragraph; Delete reference to malting in the brewhouse operation. This is typically done at malting operations which are not located at the brewery site. If described, these operations should reference other sections of AP-42 that apply.
- Page 2-2; 1st paragraph; Change Some to Most breweries purchase grain that is already malted.
- Page 2-3; Flow chart; Change Malt Dryer to Malt Kiln.
- Page 2-4; Flow chart; Change Spent Grain to Brewers Grain. Change Wet Scrubber or Other Control Device to optional process.
- Page 2-5; Flow chart; Change Yeast Production to Yeast Propagation. Change Waste Yeast to Brewers Yeast. Change Brewers Yeast Removal to Brewers Yeast Recovery. Change Brewers Yeast Disposal or Recovery to Brewers Yeast Disposal or Re-use. Draw a product stream from Brewers Yeast Recovery to Yeast Propagation.
- Page 2-6; Flow chart; Change Beer Sump to optional process. Change waste beer recovery, waste beer storage tanks, and ethanol recovery to optional process. Change Discharge as industrial sewage to Discharge as process waste water.
- Page 2-7; 3rd paragraph; Delete and help to sterilize the wort.
- Page 2-7; last paragraph; In second sentence, change Some to Most, change off-gas to CO₂.
- Page 2-8; 1st paragraph; Delete sentence starting with Common impurities...
- Page 2-8; 2nd paragraph; In last sentence, delete for a day or less.
- Page 2-8; 3rd paragraph; Delete for about 2 weeks.
- Page 2-8; 4th paragraph; Delete waste (spent). Change industrial sewage to process waste water.

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- Page 2-8; 5th paragraph; Change impurities to solids.
- Page 2-9; 1st paragraph; Change industrial sewage to process waste water.
- Page 2-9; 2nd paragraph; Define small breweries as equal to or less than 60,000 BBLs per year production. Delete sentence starting with Many microbrews are held...
- Page 2-9; 3rd paragraph; Change pollutant to Volatile Organic Compound. Delete Aldehydes, ethyl acetate from start of next sentence.
- Page 2-9; last paragraph; Delete grain malting operations. Change production to propagation. Consider re-writing paragraph to list all sources or major sources of emissions. Reference sources to flow charts. Delete references to ethyl acetates and various aldehydes.
- Page 2-10; 1st paragraph; Delete sentence starting with Other VOC that are emitted...
- Page 2-10; 4th paragraph; Factors from Anchor brewing seem to indicate that emissions from microbreweries are typically higher on a per BBL basis. This is partially due to the lack of CO2 recovery. Delete only in smaller quantities.
- Page 2-10; 5th paragraph; Change first sentence to Process loss controls are effectively used to reduce emissions in the production of malt beverages. Add-on emission controls are widely used to recover CO2 in the fermentation process and control particulate emissions from grain handling and brewers grain drying. Change industrial sewage to process waste water.
- Page 4-3; 5th paragraph; Change units from lb of pollutant per 1,000 bbl of beer produced to lb of pollutant per 1,000 bbl of beer packaged. This change should be made throughout the document.
- Page 4-4; Table 4-2; Factors for small breweries are based on a 60,000 bbl/yr facility. Delete this table and reference due to limited data available. These data should not be combined with large brewery emissions to get an average factor.
- Page 4-20; Table 4-4; All TOC factors should be converted to as methane (pre-fermentation) or as ethanol (post-fermentation). The first five factors are from a microbrewer and should be deleted from the table. Can and bottle filling from references 11,15 and 16 should be re-named to sterilized can and bottle filling. Change wort cooler to open wort cooler. Change Beer storage tank-filling to Aging tank-filling. Clarify definition of term waste beer storage tank.
- Page 4-21; Table 4-4; Change spent grain dryer to brewers grain dryer. All references throughout the document referring to spent grain should be changed to brewers grain. All emission factors for brewers grain dryers should be expressed in lbs of pollutant per ton of grain dried.

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Page 4-22; Table 4-4;

Change spent grain dryer to brewers grain dryer. All emission factors for brewers grain dryers should be expressed in lbs of pollutant per ton of grain dried. Change Crushed can pneumatic conveyor to Can crusher with pneumatic conveyor. All emission factors for Bottle soaker and Bottle crusher should be expressed in lbs of pollutant per 1000 cases processed.

Page 4-23; Table 4-4;

Change spent grain dryer to brewers grain dryer. All emission factors for brewers grain dryers should be expressed in lbs of pollutant per ton of grain dried.

Page 4-24 to 4-26;
Table 4-5;

Incorporate comments as outlined for Table 4-4. Delete data from small brewers from table. An average emission factor based upon large and small breweries is not representative. If small brewery factors are to be included, they should be stated in a separate table.

Section 9.12.1

Incorporate comments as outlined in previous sections. For clarity, the emission points shown on the process flow diagrams should be linked to the two emission factor tables. As a general note, the large number of footnotes on Table 9.12.1-2 make it very difficult to follow and understand. These footnotes should be consolidated to the largest extent possible.

Section 9.12.1.1
New Paragraph 2

Each brewery is unique in many respects, and source to source variations can be significant. These result from differences in the brewing process, the type and age of equipment used, and total production. Each brewer uses unique recipes with time and temperature differences during various stages of production that directly affect emissions.

February 15, 1995