Note: This material is related to a section in *AP42, 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 file number, the AP42 chapter and then the section. The file name "rel01_c01s02.pdf" would mean the file relates to AP42 chapter 1 section 2. The document may be out of date and related to a previous version of the section. The document has been saved for archival and historical purposes. The primary source should always be checked. If current related information is available, it will be posted on the AP42 webpage with the current version of the section.

AP42 Section:	4.12, draft 1997
Related:	2
Title:	Development of the Emission Factors for the Rubber Manufacturing Industry Volume 4: Emission Factor Application Manual – June 1995

Development of Emission Factors for the Rubber Manufacturing Industry

Volume 4: Emission Factor Application Manual

Presented to

Rubber Manufacturers Association

RMA

Presented by

TRC

TRC Environmental Corporation

May 1995

(revised by complete package brought by Dale Louda & 6-12-95 meeting)

TRC Project No. 18434

May 1995

DEVELOPMENT OF EMISSION FACTORS FOR THE RUBBER MANUFACTURING INDUSTRY

VOLUME 4

EMISSION FACTOR APPLICATION MANUAL

Prepared for

Rubber Manufacturers Association (RMA)
Suite 900
1400 K Street, N.W.
Washington, District of Columbia 20005

Prepared by

TRC Environmental Corporation
Boott Mills South
Foot of John Street
Lowell, Massachusetts 01852
(508) 970-5600

DISCLAIMER

This report is intended for use solely by the Rubber Manufacturers Association for the specific purposes described in the contractual documents between TRC Environmental Corporation and the Rubber Manufacturers Association. All professional services performed and reports generated by TRC have been prepared for the Rubber Manufacturers Association's purposes as described in the contract. The information, statements and conclusions contained in the report have been prepared in accordance with the work statement and contract terms and conditions. The report may be subject to differing interpretations and/or may be misinterpreted by third persons or entities who were not involved in the investigative or consultation process. TRC Environmental Corporation therefore expressly disclaims any liability to persons other than the Rubber Manufacturers Association who may use or rely upon this report in any way or for any purpose.

DEVELOPMENT OF EMISSION FACTORS FOR THE RUBBER MANUFACTURING INDUSTRY

OVERVIEW

The contributions of the members of the Environment Committee of the Rubber Manufacturers Association in the preparation of this document are hereby gratefully acknowledged.

****

The Rubber Manufacturers Association is a cooperative manufacturing trade association with more than 150 member companies. While RMA member companies are bound together by a common denominator--basic raw materials--the membership embraces several industries with often dissimilar problems. For this reason, the services of the RMA are organized into five business groups including: General Products, Information and Statistics, Public Affairs, Technical and Standards, and Finance and Administration. The goals of these groups are to: 1) serve as a forum for exchange of information with and among member companies on issues of common concern, and in areas of common interest; 2) provide a single voice for the industry in dealing with its publics, including government, consumers, and the general public; 3) monitor, recommend and promote the industry viewpoints on legislative and regulatory issues of concern, and investigate and report on the potential impact of these issues on the rubber industry; 4) coordinate formulation of industry positions on domestic and international standards; and 5) establish and maintain close working relationships with other organizations which share common interests and concerns.

****

© 1995 by The Rubber Manufacturers Association, Inc., 1400 K Street, N.W., Washington, D.C. 20005

All Rights Reserved

This document may not be reproduced, stored in a retrieval system, or transmitted in whole or part, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the written permission of the Rubber Manufacturers Association.

****

Printed in the United States of America

TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1
1.1	Program Overview and Objectives	1
1.2	Emission Factor Project Definitions	2
1.3	Emission Factor Summary	4
1.4	Report Series Format	4
2.0	EMISSION FACTOR APPLICATION	6
2.1	Discussion of the Tiered Emission Factor Approach	7
2.2	How to Use the Emission Factors	9
3.0	PROCESS EMISSION FACTORS	12
3.1	Mixing	12
3.2	Warmup Milling	13
3.3	Extrusion	13
3.4	Calendering	14
3.5	Tire Press Curing	14
3.6	Steam Heated Pressure Vessel (Autoclave) Curing	15
3.7	Platen Press Mold Curing	15
3.8	Hot Air Oven Curing	16
3.9	Grinding Operations	16
3.9.1	White Sidewall Grinding	16
3.9.2	Carcass Grinding	17
3.9.3	Retread Buffing	17
3.9.4	V-Belt Grinding	18

TABLES

NUMBER		PAGE
1-1	Index of Rubber Compounds and Tires Evaluated	5
3-1	Internal Mixer Emissions Factor Summary	19
3-2	Warmup Milling Emissions Summary	27
3-3	Extruder Emissions Summary	31
3-4	Calendering Emissions Summary	35
3-5	Tire Press Emissions Summary	39
3-6	Autoclave Emissions Summary	43
3-7	Platen Press Emissions Summary	51
3-8	Hot Air Oven Cure Emissions Summary	55
3-9	Grinding Operations Emissions Summary (Uncontrolled)	59

FIGURES

NUMBER		PAGE
2-1	Tier 1 Assessment Strategy	7
2-2	Tier 2 Assessment Strategy	8
2-3	Tier 3 Assessment Strategy	9

APPENDICES

NUMBER		PAGE
Appendix A	Comparison of Compound Emissions by Process	A-1
Appendix B	Rubber Compound Information	B-1
Appendix C	Interpolation Factors	C-1

SECTION 1

INTRODUCTION

1.1 Program Overview and Objectives

On July 21, 1992, EPA promulgated the Operating Permit Rule (*"The Title V Operating Permit Rule"*, Federal Register, July 21, 1992), which represents an expanded and very different approach to permitting air emission sources. The operating permit program commonly referred to as *Title V* is a national program which is now being implemented on a state by state (and in the case of California, county by county) basis. In other words, each state has been charged with developing and implementing a federally enforceable operating permit program which meets or exceeds the Clean Air Act Amendment (CAAA) requirements.

Title V now requires each facility which exceeds major source thresholds to secure a facility wide permit. The Title V program defines major source applicability on the basis of **potential to emit**, or, PTE. All facilities which have the potential to emit more than any of the following must secure a facility operating permit:

- 100 tons/year of a criteria pollutant except in selected urban areas where the threshold can be as low as 10 tons/year

- 10 tons/year of a single HAP or 25 tons/year in aggregate of any listed HAPs

To prepare a facility Title V permit, there are several tasks which must be completed. One such activity is the development of the plant emissions inventory which is the largest part of the permitting effort and also one of the areas where accuracy is critical. An inaccurate inventory can result in future compliance problems.

The key to producing an accurate inventory is contingent upon the availability of sound emissions data or emission factors for each process in a facility. These factors coupled with commonly archived process and production data are used to calculate emissions and produce the inventory.
As a result of the lack of documented emissions factors for the rubber manufacturers industry, the Rubber Manufacturers Association (RMA), on behalf of its membership, embarked on a large project to address the emission factor issue. Specifically, the objectives of the project were as follows:

- Develop emission factors for the commonly used rubber manufacturing processes;

- Develop a consistent applications approach for developing plant-wide emissions inventories;

- Develop a standard protocol for estimating emissions related to future process changes;

- Provide background information for addressing Title V record keeping and compliance demonstration requirements;

- Provide support for addressing future enhanced monitoring requirements;

- Provide information sufficient to address equipment scale differences;

An intense testing-based project was conducted which resulted in emission factors for the commonly used rubber compounds and processes. The results of the project and the emission factors now available are presented in Volumes 1 through 3 of this report series. This Applications Manual (Volume 4 of this series) presents a tiered approach for compiling facility HAP emissions, by process, and determining the applicable threshold for a given facility.

1.2 Emission Factor Project Definitions

The following is a brief list of key definitions which define pollutant categories measured in the test program, as well as terminologies which will assist the reader in interpreting the emission factor data provided in this volume.

1. *Total Speciated Volatiles:* The sum of the target volatile organic compounds as well as those compounds tentatively identified during a mass spectral library search.

2. *Total Speciated Semivolatiles:* The sum of the target semivolatile organic compounds as well as those compounds tentatively identified during a mass spectral library search.

3. *TVOC:* Total volatile organic compounds measured as total hydrocarbons (THC) calibrated to a methane standard. Measurements were made on a continuous basis using a THC analyzer in accordance with EPA Reference Method 25A.

4. *Total Metals and Metal HAPs:* The sum of the target analytes detected. The target analytes are cadmium, chromium, copper, cobalt, lead, magnesium, nickel and zinc. Note that the applicable metal HAPs for the rubber industry are Cd, Cr, Pb, Co, and Ni.

5. *Total Sulfur:* The sum of the target sulfur compounds detected during sample analysis using gas chromatography flame photometric detection (GC/FPD).

6. *Total Speciated Organics*, as used in the summary and speciation tables: The total speciated organic compounds measured in the test program is the sum of the speciated semivolatile and volatile emissions for a given rubber compound, minus any duplicate compounds. Where there is duplication of a chemical compound in the analyte list, the higher value was used to present a conservative emissions total. The other value was ignored and not included in the total.

7. *Volatile Organic Compounds (VOCs)* as defined for permitting requirements is based on the EPA definition cited in 52.21:

Volatile Organic Compounds (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate which participates in atmospheric photochemical reactions. This includes any organic compound other than the following which have been determined to have negligible photochemical reactivity:

(a) Methane (CAS 74-82-8);
(b) Ethane (CAS 74-84-0);
(c) 1,1,1-Trichloroethane (CAS 71-55-6);
(d) Methylene Chloride (CAS 75-09-2);
(e) Trichlorofluoromethane (CAS 75-69-4);
(f) Dichlorodifluoromethane (CAS 75-71-8);
(g) Chlorodifluoromethane (CAS 75-45-6);
(h) Trifluoromethane (CAS 75-46-7);
(i) Trichlorotrifluoroethane (CAS 76-13-1);
(j) Dichlorotetrafluoroethane (CAS 76-14-2);
(k) Chloropentafluoroethane (CAS 76-15-3);
(l) Dichlorotrifluoroethane (CAS 306-83-2);
(m) Tetrafluoroethane (CAS 811-97-2);
(n) Dichlorofluoroethane (CAS 1717-00-6);
(o) Chlorodifluoroethane (CAS 75-68-3);
(p) Chlorotetrafluoroethane (CAS 2837-89-0);
(q) Pentafluoroethane (CAS 354-33-6);
(r) Tetrafluoroethane (CAS 359-35-3);
(s) Trifluoroethane (CAS 420-46-2);
(t) Difluoroethane (CAS 75-37-6);
(u) Perchloroethylene (CAS 127-18-4); and,
(v) the following 4 classes of Perfluorocarbon compounds:

(1) Cyclic, branched, or linear, completely fluorinated alkanes;
(2) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturation;
(3) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturation; and
(4) Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

1.3 Emission Factor Summary

Generic rubber compounds were used for the mixing/milling, platen press, extruder, autoclave, and warmup mill tests. Data for the calendering, grinding, and tire cure processes were generated in actual manufacturing settings. For tire curing, actual tires from several of the participating companies were used. Table 1-1 presents a list of the evaluated rubber compounds and tire types.

1.4 Report Series Format

The report series for this project is presented in four volumes which are entitled as follows:

- Development of Emissions Factors for the Rubber Manufacturing Industry

--Volume 1	Emission Factor Program Results
--Volume 2	Project Data
--Volume 3	Test Program Protocol
--Volume 4	Applications Manual

The emission factors and examples for their usage are presented in the following sections of this volume (Volume 4). Section 2 presents a discussion of the tiered approach for the emission factors, as well as instructions for the use of the emission factors. Section 3 presents the emission factors for the rubber manufacturing industry based on the tiered thresholds and example scenarios for applying the factors within the industry.

Appendix A presents a comparison of total VOCs, total speciated organics, and total organic HAPs by process for each rubber compound evaluated in this program. Appendix B contains a full listing of the rubber compounds utilized in this program and their formulations.

TABLE 1-1.

INDEX OF RUBBER COMPOUNDS EVALUATED

Compound #1:	Tire Inner Liner (BrIIR/NR)
Compound #2:	Tire Ply Coat (NR/BR)
Compound #3:	Tire Belt Coat (NR)
Compound #4:	Tire Base/Sidewall (NR/BR)
Compound #5:	Tire Apex (NR)
Compound #6:	Tire Tread (SBR/BR)
Compound #7:	Tire Bladder
Compound #8:	EPDM 1 (EPDM Sulfur Cure)
Compound #9:	EPDM 2 (Peroxide Cure)
Compound #10:	EPDM 3 (Non-Black EPDM Sulfur Cure)
Compound #11:	CRW (Polychloroprene W Type)
Compound #12:	CRG (Polychloroprene G Type)
Compound #13:	Paracryl OZO (NBR/PVC)
Compound #14:	Paracryl BLT (NBR)
Compound #15:	Hypalon (CSM)
Compound #16:	Fluoroelastomer (FKM)
Compound #17:	AEM (Vamac)
Compound #18:	Hydrogenated Nitrile (HNBR)
Compound #19:	Silicone (VMQ)
Compound #20:	Acrylate Rubber (ACM)
Compound #21:	Chlorinated Polyethylene (CPE)
Compound #22:	Emulsion SBR (SBR 1502)
Compound #23:	Epichlorohydrin (ECO)
Compound #24:	Oil - Extended SBR (SBR 1712)
Compound #25:	Emulsion SBR (SBR 1500)
Compound #26:	Solution SBR (Duradene 707)

Not in draft section?

INDEX OF TIRES EVALUATED

Tire A	Original Equipment (OEM) - 195/75 R14
Tire B	Replacement - 195/75 R14
Tire C	Replacement - 195/75 R14
Tire D	Original Equipment (OEM) - 195/75 R14
Tire E	High Performance (HP) - 205/70 R14
Tire F	Original Equipment (OEM) - 205/70 R14
Tire G	High Performance (HP) - 205/70 R14
Tire H	High Performance (HP) - 205/70 R14
Tire I	Replacement - 195/75 R14

SECTION 2
EMISSION FACTOR APPLICATION

The results of this study demonstrate the wide variety of HAPs being emitted during the manufacturing of rubber products. Application of the emissions and speciation factors presented in Section 3 will vary depending on several source-specific factors. These include the number and types of products manufactured at the facility, the facility's status with respect to Title V, the operational flexibility required by the source, the recordkeeping and reporting systems in place at the facility, and whether or not the emission factor becomes critical in determining applicability to various regulations (e.g., Title V, Title III, RACT, or enhanced monitoring). The user of this manual should be cautioned, however, to consider all factors when choosing an emission factor as the facility may be required to demonstrate compliance based on the chosen emission factor.

The emission factors (lbs of pollutant emitted/lb rubber) for the various pollutant categories: total organics (regulated as VOCs), total metals, and total particulate are presented on a per rubber compound and per process basis. Additionally, emission and speciation factor means, maxima and standard deviations for each process have also been calculated for all rubber compounds and specialty groupings (e.g., engineered products and tire manufacturing).

Facilities which process several different rubber compounds may use the mean or the maximum for a particular process or grouping to simplify the emissions inventory process. The user is cautioned that, if a mean emission factor is used and rubber formulations yielding higher emissions are the primary compounds processed, the actual emissions may be underestimated. In that particular case, use of the maximum emission factor would be recommended. In general, use of the maximum emission factor value will result in the maximum operational flexibility of the facility.

To calculate emissions using the emission factors presented, the user should simply select the most appropriate factor, based on the facility-specific characterization and needs. The emission factor (lb/lb rubber) would then be multiplied by the amount of rubber processed. To calculate species emissions, the emissions for a given pollutant category (e.g.- organics) would be multiplied by the speciation factor for the desired compound (e.g.- butanol). In cases where emissions for a specific chemical compound are required, the user may obtain a species-specific emission factor (lb/lb rubber) from Volume 2 of the report series.

When applying the factors generated in this project to a multi-step manufacturing process, it must be understood that the relative contribution of each process must be accounted for. For instance, the application of these factors to tire production must take into account the emissions from the mixing, milling, extruding, calendering, and curing processes to determine the total emissions from tire manufacturing.

In the case of tire manufacturing, for example, there were certain chemical species that were not present in all test tires, indicating differences in the chemical composition of the rubber formulations used. Excluding superfluous chemical species from the emission factor allows a higher degree of accuracy for the different companies when estimating emissions for their

different tires. Individual chemicals which can be reasonably excluded need not be assumed to be present simply because the "average passenger tire" emitted the chemical. These individual chemicals can be excluded, but only through detailed knowledge of the formulations in use in combination with literature and available test data.

2.1 Discussion of Tiered Emission Factor Approach

Compliance with Title V and other air permitting requirements can be simplified with a tiered approach. Manufacturers can perform a preliminary screening analysis and determine whether their operation may have the potential to be a major source. Actual emissions would be calculated using process-specific information and emission factors if Tier 1 or Tier 2 screening indicates that the source has the potential to be a major source. Those manufacturers which may be a major source can apply increasingly sophisticated and time-consuming assessments to achieve the greatest possible precision in estimating emissions.

A Tier 1 assessment involves a review of maximum values for total VOCs (measured as total hydrocarbons by EPA Reference Method 25A), total HAPs, and particulate matter (PM).

Figure 2-1. Tier 1 Assessment Strategy

Assessment Step	PTE Threshold	Action
1.1 Total VOC emissions	100 tons/yr (less in nonattainment areas)	No further action if threshold is not exceeded, i.e., if source is a minor source.
1.2 Total HAPs	25 tons/yr total HAPs	No further action if threshold is not exceeded.
1.3 TSP	100 tons/yr (less in nonattainment areas)	No further action if threshold is not exceeded.

A Tier 2 assessment focuses on assessment of organic HAPs when the PTE is more than 10 tons/yr and less than 25 tons/year. It involves a review of mean and maximum values for each organic HAP. Data for each organic HAP (including detection limits for compounds not detected) are listed in tabular format for each process involved at the facility, and summarized for all rubber compounds/products. A total for all manufacturing operations is computed by the plant operator. The data are then sorted by chemical compounds, or species, in the order of decreasing emissions.

Figure 2-2. Tier 2 Assessment Strategy

Assessment Step	PTE Threshold	Action
2.1 HAPs, Maximum concentration values	25 tons/yr for total HAPs 10 tons/yr for individual HAPs	No further action if threshold is not exceeded, i.e., if source is a minor source. This is a conservative approach which provides maximum flexibility in plant operations.
2.2 HAPs, Average concentration values	25 tons/yr for total HAPs 10 tons/yr for individual HAPs	No further action if threshold is not exceeded. This is a less conservative approach which may require a detailed consideration of current and future rubber compounds used at the facility.

A Tier 3 assessment is a detailed assessment performed for all major sources. A user at this point is very concerned about data accuracy and site specificity. The user will extract emissions data which relate specifically to the owner's facility.

The assessment is performed using tables for each process with the following information by chemical compound: total VOCs (as methane), total speciated organics, and total and individual HAPs. The mean, maximum, and standard deviation values are given for the different pollutant categories and individual chemical species.

It is anticipated that perhaps only 90% of the speciated VOC emissions will be identified by name to the agency. Constituents observed at trace or de minimus concentrations will be grouped into a general HAPs category for regulatory reporting purposes.

As the assessment proceeds, the plant operator is able to judge the significance of major HAPs in terms of both the concentration values and the prevalence of each chemical compound across the variety of rubber compounds used at the facility.

Figure 2-3. Tier 3 Assessment Strategy

Assessment Step	PTE Threshold	Action
3.1 HAPs, Maximum concentration values	25 tons/yr for total HAPs 10 tons/yr for a single HAP;	No further action if threshold is not exceeded, i.e., if source is a minor source. This is a conservative approach which provides maximum flexibility in plant operations.
3.2 HAPs, Average concentration values	25 tons/yr for total HAPs 10 tons/yr for a single HAP;	No further action if threshold is not exceeded. This is a less conservative approach which may require a detailed consideration of current and future rubber compounds used at the facility.
3.3 HAPs	10 tons/yr for a single HAP	Consider changing rubber compounds to avoid "problem" HAPs
3.4 HAPs	112(g) limits for major sources	

2.2 How To Use The Emission Factors

1) Identify the rubber compound used in your process. Compare your compound with the listed compounds in Table 1-1. Select the matching compound. Appendix B provides further detail on compound recipes for comparison with your particular compound.

2) Select the appropriate manufacturing process from the Table of Contents. Find the selected process emission factor table in Section 3. Choose the correct emission factor for your compound and process.

3) Four categories of emission factors and a listing of individual HAP's are available. Two categories of organic emission factors are presented:

   A) Total VOCs (Method 25A)
   B) Total Speciated Organics (GC/MS)

Note that the Individual Organic HAPs listed in the Section 3 tables are taken from the Total Speciated Organics list. The decision on which of these factors you select will be determined by which method your state or local regulatory agency requires.

4) Determine the actual rubber throughput for each rubber compound through each process. Multiply the emission factor (pounds pollutant emitted pounds rubber processed) by the process rubber throughput. The result is expressed in pounds emitted.

Notes:

a) Grinding process emission factors are based on the amount of rubber ground off and not the total process throughput weight, with the exception of retread buffing which is based on pounds of tread throughput.

b) Tire curing emission factors are based on pounds of rubber compound and not on total tire weight. A typical passenger tire is approximately 85% by weight rubber compounds. Each facility should determine this percentage for their own tires.

factors were Increased to account for total tire wt.

c) Internal mixing emission factors (lb/lb rubber mixed) are based on the final quantity (lbs) of productive run rubber because of the varying number of non-productive runs for the different rubber formulations. Productive run throughput is typically the measure used by the industry for production data. The same basis is used here for determining emissions data.

5) Although the following calculation procedure is not anticipated to be used for products currently known to be produced in the industry, these emission factors can be used for material which are composites. Emission factors for materials which are composites consisting of multiple compounds can be approximated by determining an overall weighted average emission factor using the appropriate compound emission factors. The weighted average factor is then multiplied by the total throughput to determine the emission.

Example:

95 lbs Compound 1 - Emission Factor (lbs emitted per lb of rubber) = 1.2^{E-05}
275 lbs Compound 2 - Emission Factor (lbs emitted per lb of rubber) = 2.8^{E-05}
150 lbs Compound 3 - Emission Factor (lbs emitted per lb of rubber) = 9.5^{E-06}

Overall Emission Factor:

$$[95\ (1.2^{E-05}) + 275\ (2.8^{E-05}) + 150\ (9.5^{E-06})]/(95 + 275 + 150) =$$

$$1.03^{E-02}/520 =$$

1.97^{E-05} lbs emitted/lb of rubber

Although a tire undergoing curing is a composite of many rubber compounds, the emission factors for tire curing have been developed separately and can be found in Section 3.

6) Process variables, including compound recipes, process time and temperatures, and processing methods may differ from the tested conditions in an actual manufacturing situation. Emission factors were developed using conservative assumptions to ensure that emissions are not understated. Although adjustments can be made to the published factors based on specific process knowledge and/or scientific test data, care should be exercised in making any upward or downward revision of the published factors. This should only be done if specific, defensible test or engineering data exists for the given process.

7) General Information

A) Emission factors were developed through the testing of twenty-six generic compounds and several rubber products. Testing was conducted on the most commonly used manufacturing processes. Appendix C "Interpolation Factors" provides a method to determine emission factors for a compound not listed in a process summary table.

B) HAPs known to be present, but not detected in actual testing of a particular process, are assumed to be present at the detection level in all processes where not detected. The "<" notation in the table indicates that the compound was not observed in all measurements for a given process or was below the detection limit. The method detection limit was therefore used as a conservative default value.

It should be noted that, if a HAP was not found during any testing of the individual rubber product even though it was suspected to be present, or that HAP is not known to exist in the manufacture of that rubber product, then it is not included in the reported data, even as a "<" value.

C) Metals were expected to be detected in the particulate matter emitted during rubber mixing but were not expected to be a significant emission in any other process. To confirm this assumption, metals were anaylzed in the extruder emission. Metals emitted proved to be so small that they could be within the margin of error of the analytical procedure. Metal emissions were therefore considered to be insignificant in other processes and no additional testing was performed.

D) Due to the high reactivity and propensity of formaldehyde to become quickly bound up with other chemicals, formaldehyde was not expected to be a significant emission in any process. Compounds 1 and 7, judged to have the best potential for any formaldehyde emission, were tested for it during the platen press runs. Compound 1 emitted 1.88×10^{-6} lb/lb rubber and compound 7 emitted 1.23×10^{-6} lb/lb of rubber. These small emissions could well be within the margin of error of the analytical procedure. Formaldehyde emissions were therefore considered to be insignificant and no additional testing was conducted.

E) Polycyclic organic matter (POM) emissions are regulated in combusion processes only as clarified by Sally L. Shaver, EPA Director, Air Quality Strategies and Standards Division by a letter dated April 27, 1995 to RMA. POM emissions are therefore not an issue in the processes analyzed in this project.

SECTION 3

PROCESS EMISSION EMISSION FACTORS

The following subsections present information for determining uncontrolled emissions from the the individual rubber manufacturing processes. These process examples are organized by the order in which they would typically appear in a typical manufacturing setting. This section is organized as follows:

- 3.1 Internal Mixing
- 3.2 Warmup Milling
- 3.3 Extrusion
- 3.4 Calendering
- 3.5 Tire Press Curing
- 3.6 Steam Heated Pressure Vessel (Autoclave) Curing
- 3.7 Platen Press Mold Curing
- 3.8 Hot Air Oven Curing
- 3.9 Grinding Operations
  - 3.9.1 Sidewall Grinding
  - 3.9.2 Carcass Buffing
  - 3.9.3 Retread Buffing
  - 3.9.4 V-belt Grinding

A table of emission factors for each process or operation is presented at the end of this section.

3.1 Mixing

The emission factor includes the total uncontrolled emissions from an internal mixer and its drop mill or roller die extruder.

The mixing emission factor includes emissions from both non-productive and productive mixing. Table 3-1 presents the emission factors for uncontrolled mixing emissions. Emissions from non-productive mixing are approximately 90% of the total.

Results of testing using a fabric filter (Torit Brand) resulted in the following collection efficiencies:

VOC -	Zero reduction.
Particulate (PM) -	Collection efficiency of 99.2% observed. For other types of collectors refer to manufacturers specifications or actual test results.
Metal Compounds -	Assumed to be present as particulate matter.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Controlled emissions:	(Uncontrolled emissions) x (1 - Control Efficiency)
Known:	1,000,000 pounds of Compound 12 were mixed
Find:	Uncontrolled and controlled PM emissions
Uncontrolled PM:	(1,000,000 lbs rubber) x (1.83^{E-04} lbs/lb rubber) = 183 lbs PM
Controlled PM:	(183 lbs PM) x (1 - 0.992) = 1.5 lbs PM

3.2 Warmup Milling

The emission factor includes the total uncontrolled emissions from a single warmup mill. For example, this would be a mill used prior to a hot feed extruder or a calender. Where multiple mills are used, each mill should be calculated based on its throughput. Table 3-2 presents the warmup mill emissions.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 pounds of Compound 12 were milled
Find:	Uncontrolled Total HAP emissions
Uncontrolled Total HAPs:	(1,000,000 lbs rubber) x (1.49^{E-07} lbs/lb rubber) = 0.149 lbs Total HAPs

3.3 Extrusion

The emission factor includes the total uncontrolled emisisons from a cold feed extruder including the die head and the cooling conveyor. The testing was conducted using an air-cooled conveyor. This factor is applicable to both hot feed and cold feed extruders. Table 3-3 presents the extrusion process emission factors.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 pounds of Compound 6 were extruded
Find:	Uncontrolled Total HAP emissions
Uncontrolled Total HAPs:	(1,000,000 lbs rubber) x (3.71^{E-05} lbs/lb rubber) = 37.1 lbs Total HAPs

3.4 Calendering

The emission factor includes the total uncontrolled emissions from a calender or calender line, excluding feed mills. Calendering includes rubber calendering as well as wire and fabric calenders. Table 3-4 presents the calendering process emission factors.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 pounds of Compound 12 were calendered
Find:	Uncontrolled Total HAP emissions
Uncontrolled Total HAPs:	(1,000,000 lbs rubber) x (3.49^{E-06} lbs/lb rubber) = 3.49 lbs Total HAPs

3.5 Tire Press Curing

The emission factor includes the total uncontrolled emissions from a passenger tire press using actual green tires furnished by 9 different manufacturers. Three categories of passenger radial tires were tested which included original equipment, replacement and high performance.

Emissions were collected during vulcanizing, press opening, and tire cool-down. Emission factors do not include mold release agents. Consideration must be given to both product type and formulations used when calculating emissions. Table 3-5 presents the tire press emission factors.

Emission factors are based on pounds of rubber compound and not the total tire weight. Typical passenger tires are 85% by weight rubber compounds.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 lbs of rubber by weight of a finished Tire Type A
Find:	Uncontrolled Emissions to Total HAP emissions
Uncontrolled Total HAPs:	(1,000,000 lbs rubber) x (8.78^{E-05} lbs/lb rubber) = 87.8 lbs Total HAPs

3.6 Steam Heated Pressure Vessel (Autoclave) Curing

The emission factor includes the total uncontrolled emissions from an autoclave. Testing was completed using direct contact with steam on unextruded compounds. The emission factor has been corrected for non-contact steam cure and includes the organic emissions that would have been condensed out in the water phase (approximately 17%). Emissions from mold releases were not included in the testing.

Steam heated pressure vessels include but is not limited to autoclaves, pot heaters, pot kettles, and vulcanizers. Table 3-6 presents these emission factors.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 pounds of Compound 4 were cured in a steam heated pressure vessel
Find:	Uncontrolled Total HAP emissions
Uncontrolled Total HAPs:	(1,000,000 lbs rubber) x (2.89^{E-04} lbs/lb rubber) = 289 lbs Total HAPs

3.7 Platen Press Mold Curing

The emission factor includes the total uncontrolled emissions from a platen press and the cooldown cycle. This factor is applicable to injection molding and other types of compression molding. Emissions from mold releases were not included in the testing. Table 3-7 presents the emission factors for the platen press curing operation.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber processed) x (Emission Factor)
Known:	1,000,000 pounds of Compound 12 was cured

Find: Uncontrolled Total HAP emissions

Uncontrolled Total HAPs: (1,000,000 lbs rubber) x (2.30^{E-03} lbs/lb rubber) = 2,300 lbs Total HAPs

3.8 Hot Air Oven Curing

The emission factor includes uncontrolled emissions from the oven and the leakage that may occur during curing.

Example Calculations:

Uncontrolled emissions: (lbs of rubber cured) x (Emission Factor)

Known: 1,000,000 pounds of extruded SBR was cured

Find: Uncontrolled Total HAP emissions

Uncontrolled Total HAPs: (1,000,000 lbs rubber) x (2.03^{E-03} lbs/lb rubber) = 2,030 lbs Total HAPs

3.9 Grinding Operations

Several types of grinding operations were evaluated and emission factors developed. These are sidewall grinding, carcass grinding, retread buffing, and V-belt grinding. All factors, except retread buffing, are based on lbs emitted per lb of rubber removed or ground off. The retread buffing factor is based on lbs emitted per lb of rubber processed or buffed. The user should exercise caution in working up the total HAP emissions and ensure use of the proper units. Table 3-9 presents the emission factors for each grinding operation.

3.9.1 White Sidewall Grinding

The emission factor is the total uncontrolled emissions from a grinder producing white sidewall tires. The factor is based upon the pounds of emissions per pound of rubber ground off.

Reductions from passing the emissions through a cyclone separator are:

PM = ~~99.2%~~ 91.9

Example Calculations:

Uncontrolled emissions: (lbs of rubber ground off) x (Emission Factor)

Controlled emissions:	(Uncontrolled emissions) x (1 - Control Efficiency)
Known:	1,000,000 pounds of rubber ground from tires
Find:	Uncontrolled and Controlled PM emissions ?
Uncontrolled PM:	(1,000,000 lbs rubber) x (1.0 lbs/lb rubber) = 1,000,000 lbs of Uncontrolled PM emissions
Controlled PM:	(1,000,000 lbs PM) x (1 - 0.992) = 8,000 lbs of Controlled PM emissions

3.9.2 Carcass Grinding

The emission factor is the total uncontrolled emissions from a fine grinding module preparing used tires for retreading. Reductions from passing the emissions through a cyclone separator (Retread Equipment Company, Charlotte, NC) are:

PM = ~~99.8%~~ · ← table footnote says 97.8

The factor is based on the pounds of emissions per pound of rubber ground off.

Example Calculations:

Uncontrolled emissions:	(lbs of rubber ground off) x (Emission Factor)
Controlled emissions:	(Uncontrolled emissions) x (Control Efficiency)
Known:	1,000,000 pounds of rubber ground off
Find:	Uncontrolled and Controlled PM emissions
Uncontrolled PM:	(1,000,000 lbs rubber) x (5.45^{E-01} lbs/lb rubber) = 545,000 lbs of Uncontrolled PM emissions correct
Controlled PM:	(545,000 lbs PM) x (1 - 0.998) = 1,090 lbs of Controlled PM emissions

3.9.3 Retread Buffing

The emission factor is the total uncontrolled emissions from four inline buffing wheels. Reductions from passing the emissions thru a cyclone separator and an American Air Filter Baghouse, Model 12-84-1347 are:

PM = 97.8% · 97.9

table says "baghouse"

Example Calculations:

not according to Table

Uncontrolled emissions: (lbs of rubber ground off) x (Emission Factor)

Controlled emissions: (Uncontrolled emissions) x (Control Efficiency)

Known: 1,000,000 pounds of rubber through the process off ?

Find: Uncontrolled and Controlled PM emissions

this is not the ef

Uncontrolled PM: (1,000,000 lbs rubber) x (9.48^{E-03} lbs/lb rubber) =
9,480 lbs of Uncontrolled PM emissions

Controlled PM: (9,480 lbs PM) x (1 - 0.978) =
208.6 lbs of Controlled PM emissions

3.9.4 V-Belt Grinding

The emission factor is the total uncontrolled emissions from a water-cooled grinder producing V-belts constructed with toluene-based manufacturing aids.

Reductions from passing the emissions through control devices are:

PM:	Cyclone	- ~~75%~~ 98.98 (Fisher Kloster XQ-102-20)
PM:	Cyclone plus ESP	- 99.97% ✓

VOCs and HAPs were not reduced by the cyclone and ESP

The factor is based on pounds of emissions per pound of rubber ground off.

Example Calculations:

Uncontrolled emissions: (lbs of rubber ground off) x (Emission Factor)

Controlled emissions: (Uncontrolled emissions) x (control efficiency)

Known: 1,000,000 pounds of rubber through the process off

Find: Uncontrolled and Controlled PM emissions

Uncontrolled PM: (1,000,000 lbs rubber) x (1.0 lbs/lb rubber) = ?
1,000,000 lbs of Uncontrolled PM emissions

Controlled PM: (1,000,000 lbs PM) x (1 - 0.9997) =
300 lbs of Controlled PM emissions

TABLE 3-1. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #1 lbs/lb rubber	Cmpd. #2 lbs/lb rubber	Cmpd. #3 lbs/lb rubber	Cmpd. #4 lbs/lb rubber	Cmpd. #5 lbs/lb rubber	Cmpd. #6 lbs/lb rubber	Cmpd. #7 lbs/lb rubber	Cmpd. #8 lbs/lb rubber	Cmpd. #9 lbs/lb rubber	Cmpd. #10 lbs/lb rubber	Cmpd. #11 lbs/lb rubber	Cmpd. #12 lbs/lb rubber	Cmpd. #13 lbs/lb rubber
TOTAL VOCs		6.11E-05	3.86E-05	1.37E-04	3.86E-05	2.15E-04	3.96E-05	1.20E-04	1.55E-05	2.84E-05	2.90E-04	3.22E-05	1.59E-05	2.28E-04
TOTAL SPECIATED ORGANICS		< 6.08E-05	< 6.61E-05	< 1.09E-04	< 6.09E-05	< 7.36E-05	< 1.25E-04	< 1.16E-04	< 6.04E-05	< 6.53E-05	< 3.13E-04	< 4.21E-05	< 6.70E-05	< 1.63E-04
TOTAL PARTICULATE MATTER (PM)		1.75E-04	4.02E-04	8.99E-04	3.00E-04	9.25E-04	4.00E-04	5.66E-04	2.22E-04	4.92E-05	3.58E-04	7.82E-05	1.83E-04	2.46E-04
TOTAL ORGANIC HAPS		< 4.03E-05	< 1.85E-05	< 7.12E-05	< 2.97E-05	< 5.05E-05	< 6.76E-05	< 6.45E-05	< 5.99E-05	< 2.02E-05	< 1.40E-04	< 1.60E-05	< 5.90E-05	< 1.91E-05
TOTAL METAL HAPs		< 9.67E-08	< 3.76E-08	< 1.74E-07	< 7.07E-08	< 7.73E-08	< 4.90E-08	< 1.66E-07	< 3.91E-08	< 3.32E-08	< 5.18E-08	< 2.51E-08	< 2.87E-08	< 4.85E-08
TOTAL HAPS (1)		< 4.04E-05	< 1.86E-05	< 7.14E-05	< 2.98E-05	< 5.05E-05	< 6.76E-05	< 6.47E-05	< 5.99E-05	< 2.03E-05	< 1.40E-04	< 1.60E-05	< 5.90E-05	< 1.92E-05
Individual HAPs:														
1,1-Dichloroethane	00075-34-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1-Dichloroethene	00075-35-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	5.47E-07	< 2.04E-07	< 4.60E-07	< 4.75E-07	1.00E-07	1.90E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1,1-Trichloroethane	00071-55-6	< 4.64E-07	8.03E-08	3.19E-07	4.23E-08	1.84E-07	< 4.60E-07	< 4.75E-07	2.67E-08	7.30E-08	1.34E-07	< 9.87E-08	2.94E-08	5.32E-08
1,1,2-Trichloroethane	00079-00-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1,2,2-Tetrachloroethane	00079-34-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
1,2-Dibromoethane	00106-93-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dichloroethane	00107-06-2	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dichloropropane	00078-87-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2,4-Trichlorobenzene	120-82-1	< 7.42E-09	< 4.60E-09	< 1.24E-08	< 3.65E-09	< 6.86E-09	< 9.57E-09	< 1.17E-08	< 5.61E-09	< 5.44E-09	< 5.70E-09	< 4.65E-09	< 3.74E-09	< 4.96E-09
1,3-Butadiene	00106-99-0	9.78E-08	< 1.84E-08	< 3.62E-08	2.17E-07	< 1.15E-08	< 6.46E-08	4.67E-07	1.13E-07	1.70E-07	< 6.86E-08	3.82E-07	8.57E-08	1.12E-07
1,4-Dichlorobenzene	00106-46-7	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,4-Dioxane	00123-91-1	< 1.85E-06	< 5.25E-07	< 1.03E-06	< 3.98E-07	< 8.16E-07	< 1.84E-06	< 1.90E-06	< 4.27E-07	< 5.08E-07	< 1.95E-06	< 3.95E-07	< 3.36E-07	< 7.10E-07
1,4-Phenylenediamine	106-50-3	< 1.59E-06	< 9.34E-09	< 3.67E-08	< 1.26E-08	< 1.46E-08	< 1.72E-08	< 2.47E-08	< 1.36E-08	< 1.33E-08	< 1.02E-08	< 8.31E-09	< 9.11E-09	< 8.89E-09
2-Butanone	00078-93-3	5.91E-06	1.59E-06	9.01E-07	2.74E-06	1.53E-06	4.40E-07	1.40E-06	5.08E-07	4.92E-07	1.18E-06	8.64E-08	8.20E-07	3.22E-07
2-Methylphenol	95-48-7	< 8.31E-09	< 5.50E-09	8.64E-08	8.34E-10	1.30E-08	6.00E-09	< 1.29E-08	< 7.35E-09	< 6.50E-09	< 6.55E-09	< 5.26E-09	< 4.53E-09	< 5.77E-09
2,4-Dinitrophenol	51-28-5	< 2.97E-08	< 2.88E-08	< 7.51E-08	< 2.82E-08	< 2.87E-08	< 4.83E-08	< 4.48E-08	< 2.94E-08	< 3.10E-08	< 2.95E-08	< 2.42E-08	< 2.15E-08	< 2.61E-08
2,4-Dinitrotoluene	121-14-2	< 9.45E-09	< 6.91E-09	< 1.92E-08	< 5.52E-09	< 9.14E-09	< 1.23E-08	< 1.43E-08	< 8.03E-09	< 6.32E-09	< 7.49E-09	< 6.15E-09	< 4.40E-09	< 6.63E-09
2,4,5-Trichlorophenol	95-95-4	< 1.00E-08	< 7.04E-09	< 1.92E-08	< 5.68E-09	< 9.67E-09	< 1.38E-08	< 1.50E-08	< 7.47E-09	< 7.88E-09	< 8.43E-09	< 6.95E-09	< 5.46E-09	< 7.44E-09
2,4,6-Trichlorophenol	88-06-2	< 1.01E-08	< 7.42E-09	< 1.90E-08	< 5.63E-09	< 9.73E-09	< 1.40E-08	< 1.52E-08	< 7.82E-09	< 8.26E-09	< 8.53E-09	< 7.04E-09	< 5.72E-09	< 7.55E-09
3,3'-Dichlorobenzidine	91-94-1	< 2.07E-08	< 3.58E-09	< 7.11E-08	< 1.01E-08	< 2.21E-08	< 5.05E-09	< 3.69E-08	< 3.23E-09	< 3.88E-09	< 2.93E-09	< 2.96E-09	< 2.02E-09	< 3.56E-09
3,3'-Dimethoxybenzidine	119-90-4	< 2.20E-08	< 6.01E-09	< 9.02E-08	< 1.57E-08	< 2.35E-08	< 7.13E-09	< 4.14E-08	< 4.72E-09	< 5.63E-09	< 4.17E-09	< 4.18E-09	< 2.95E-09	< 5.07E-09
3,3'-Dimethylbenzidine	119-93-7	< 8.62E-09	< 2.05E-09	< 2.70E-08	< 5.58E-09	< 9.26E-09	< 2.87E-09	< 1.63E-08	< 1.85E-09	< 2.19E-09	< 1.69E-09	< 1.69E-09	< 1.14E-09	< 2.05E-09
3/4-Methylphenol	108-39-4/106-44-5	1.01E-08	< 5.12E-09	2.37E-07	< 4.07E-09	1.11E-07	< 1.12E-08	< 1.24E-08	< 8.87E-09	< 6.13E-09	1.54E-09	< 5.07E-09	< 4.27E-09	< 5.55E-09
4-Aminobiphenyl	92-67-1	< 4.12E-09	< 2.37E-09	< 7.29E-09	< 2.92E-09	< 3.81E-09	< 3.83E-09	< 6.32E-09	< 2.21E-09	< 2.38E-09	< 2.23E-09	< 1.83E-09	< 1.50E-09	< 1.94E-09
4-Methyl-2-Pentanone	00108-10-1	< 4.64E-07	1.97E-07	1.26E-05	1.49E-05	< 2.04E-07	3.08E-05	< 4.75E-07	1.27E-07	1.24E-07	4.15E-07	6.79E-08	< 8.41E-08	9.87E-08
4-Nitrobiphenyl	92-93-3	< 8.94E-09	< 4.73E-09	< 1.64E-08	< 6.62E-09	< 8.21E-09	< 7.22E-09	< 1.37E-08	< 4.42E-09	< 4.75E-09	< 4.22E-09	< 3.43E-09	< 2.95E-09	< 3.61E-09
4-Nitrophenol	100-02-7	< 2.50E-08	< 2.19E-08	< 5.85E-08	< 1.43E-08	< 2.41E-08	< 3.25E-08	< 3.77E-08	< 1.88E-08	< 1.97E-08	< 1.98E-08	< 1.63E-08	< 1.37E-08	< 1.75E-08
4,4'-Methylenedianiline	101-77-9	< 1.63E-08	< 4.48E-09	< 4.79E-08	< 1.12E-08	< 1.75E-08	< 6.00E-09	< 3.07E-08	< 3.82E-09	< 4.57E-09	< 3.52E-09	< 3.52E-09	< 2.42E-09	< 4.26E-09
4,6-Dinitro-2-methylphenol	534-52-1	< 2.25E-08	< 1.33E-08	< 4.73E-08	< 2.14E-08	< 2.07E-08	< 2.63E-08	< 3.45E-08	< 1.54E-08	< 1.64E-08	< 1.53E-08	< 1.23E-08	< 1.03E-08	< 1.32E-08
Acetaldehyde (2)	00075-07-0	6.95E-07												
Acetonitrile	75-05-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Acetophenone	98-86-2	4.24E-08	2.13E-08	5.13E-08	3.75E-09	1.85E-08	7.67E-08	1.23E-07	1.29E-08	1.47E-08	8.46E-08	2.29E-07	3.45E-07	5.21E-08
Acrolein	00107-02-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	7.10E-07
Acrylonitrile	00107-13-1	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	6.81E-08	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	9.54E-07
Allyl Chloride	00107-05-1	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Aniline	62-53-3	< 5.71E-09	4.80E-07	< 1.30E-08	4.30E-07	< 5.33E-09	9.97E-08	< 8.91E-09	7.70E-09	5.13E-09	4.71E-09	2.39E-08	< 2.55E-09	< 3.56E-09
a,a,a-Trichlorotoluene	98-07-7	< 5.07E-09	< 3.77E-09	< 9.58E-09	< 3.13E-09	< 4.69E-09	< 7.63E-09	< 7.95E-09	< 4.54E-09	< 4.38E-09	< 4.61E-09	< 3.75E-09	< 3.04E-09	< 4.04E-09
Benzene	00071-43-2	5.46E-08	4.62E-08	1.13E-07	1.14E-07	2.98E-07	< 6.22E-08	9.13E-08	< 1.45E-08	4.90E-08	< 8.61E-08	< 1.34E-08	3.64E-08	6.61E-07
Benzidine	92-87-5	< 1.12E-08	< 2.94E-09	< 2.75E-08	< 7.77E-09	< 1.20E-08	< 4.35E-09	< 2.11E-08	< 2.75E-09	< 3.25E-09	< 2.53E-09	< 2.53E-09	< 1.72E-09	< 3.07E-09
Benzyl Chloride	00100-44-7	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Biphenyl	92-52-4	< 2.66E-09	< 2.30E-09	5.63E-08	5.42E-09	< 2.58E-09	1.17E-08	< 4.02E-09	< 2.45E-09	< 2.56E-09	< 2.78E-09	< 2.30E-09	< 1.80E-09	< 2.48E-09
bis(2-Chloroethyl)ether	111-44-4	< 9.26E-09	< 5.24E-09	< 1.87E-08	< 5.00E-09	< 8.73E-09	< 1.18E-08	< 1.45E-08	< 7.05E-09	< 6.25E-09	< 6.65E-09	< 5.35E-09	< 4.36E-09	< 5.88E-09
bis(2-Ethylhexyl)phthalate	117-81-7	3.91E-08	3.01E-08	1.19E-07	0.00E+00	2.29E-08	1.79E-07	3.34E-08	0.00E+00	7.07E-09	< 1.29E-09	2.69E-07	8.93E-09	7.40E-07
Bromoform	00075-25-2	2.78E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Bromomethane	00074-83-9	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07

TABLE 3-1. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #1 lbs/lb rubber	Cmpd. #2 lbs/lb rubber	Cmpd. #3 lbs/lb rubber	Cmpd. #4 lbs/lb rubber	Cmpd. #5 lbs/lb rubber	Cmpd. #6 lbs/lb rubber	Cmpd. #7 lbs/lb rubber	Cmpd. #8 lbs/lb rubber	Cmpd. #9 lbs/lb rubber	Cmpd. #10 lbs/lb rubber	Cmpd. #11 lbs/lb rubber	Cmpd. #12 lbs/lb rubber	Cmpd. #13 lbs/lb rubber
Carbon Disulfide	00075-15-0	< 4.64E-07	< 1.31E-07	< 2.57E-07	1.99E-07	1.84E-07	3.83E-06	< 4.75E-07	2.81E-05	6.66E-07	1.03E-04	8.64E-06	4.52E-05	8.32E-07
Carbon Tetrachloride	00056-23-5	< 4.64E-07	< 1.31E-07	1.19E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Carbonyl sulfide	00463-58-1	< 2.32E-07	< 1.61E-07	< 3.15E-07	< 1.22E-07	5.34E-07	1.59E-06	< 2.33E-07	2.24E-05	1.15E-06	< 2.44E-07	< 1.23E-07	6.14E-06	5.85E-07
Chlorobenzene	00108-90-7	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloroethane	00075-00-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloroform	00067-66-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloromethane	00074-87-3	< 4.64E-07	3.12E-08	< 2.57E-07	2.98E-08	< 2.04E-07	3.25E-07	< 4.75E-07	3.74E-08	3.17E-08	9.27E-08	< 9.87E-08	2.31E-08	6.43E-08
Cumene	00098-82-8	< 2.58E-08	< 1.82E-08	< 3.58E-08	< 1.38E-08	< 1.13E-08	< 6.38E-08	8.31E-08	9.65E-08	3.17E-08	8.81E-07	< 1.37E-08	9.05E-08	9.86E-08
Dibenzofuran	132-64-9	< 2.22E-09	2.11E-09	3.42E-08	1.41E-09	< 2.11E-09	3.31E-09	< 3.35E-09	< 1.91E-09	< 2.00E-09	< 2.13E-09	< 1.78E-09	< 1.36E-09	< 1.89E-09
Dimethylaminoazobenzene	60-11-7	< 1.45E-08	< 3.33E-09	< 2.87E-08	< 9.54E-09	< 1.54E-08	< 4.96E-09	< 2.72E-08	< 3.34E-09	< 3.94E-09	< 2.93E-09	< 2.91E-09	< 2.07E-09	< 3.56E-09
Dimethylphthalate	131-11-3	< 2.85E-09	< 2.30E-09	1.57E-08	1.56E-09	< 2.75E-09	< 4.18E-09	< 4.31E-09	< 2.39E-09	< 2.56E-09	< 2.58E-09	< 2.11E-09	< 1.76E-09	< 2.26E-09
Di-n-butylphthalate (3)	84-74-2	8.00E-08	1.61E-08	5.49E-08	0.00E+00	0.00E+00	1.50E-08	0.00E+00	7.47E-09	1.31E-09	1.47E-08	0.00E+00	5.94E-09	3.34E-07
Epichlorohydrin	00106-89-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Ethyl Acrylate (2)														
Ethylbenzene	00100-41-4	< 2.56E-08	1.45E-07	2.13E-07	1.17E-07	1.18E-07	2.43E-07	4.32E-06	1.11E-07	7.36E-08	< 6.74E-08	6.81E-08	5.74E-08	2.06E-07
Hexachlorobenzene	118-74-1	< 1.05E-08	< 6.59E-09	9.29E-09	< 5.11E-09	< 9.73E-09	< 1.16E-08	< 1.62E-08	< 7.05E-09	< 7.51E-09	< 8.75E-09	< 5.44E-09	< 4.71E-09	< 5.82E-09
Hexachlorobutadiene	00087-68-3	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Hexachlorocyclopentadiene	77-47-4	< 9.38E-09	< 9.79E-09	< 2.39E-08	< 5.52E-09	< 9.08E-09	< 2.11E-08	< 1.42E-08	< 1.40E-08	< 1.47E-08	< 1.29E-08	< 1.06E-08	< 1.02E-08	< 1.14E-08
Hexachloroethane	67-72-1	< 1.29E-08	< 8.63E-09	< 2.43E-08	< 6.05E-09	< 1.21E-08	< 1.73E-08	< 2.00E-08	< 1.10E-08	< 9.76E-09	< 9.72E-09	< 7.79E-09	< 6.78E-09	< 8.52E-09
Hydroquinone	123-31-9	< 1.07E-08	< 9.15E-09	< 2.13E-08	8.10E-07	2.62E-05	< 1.37E-08	< 1.68E-08	< 9.91E-09	< 9.63E-09	< 8.13E-09	< 6.62E-09	< 6.65E-09	< 7.12E-09
Isophorone	78-59-1	< 4.18E-09	6.63E-07	< 8.15E-09	5.93E-08	< 3.93E-09	< 5.48E-09	< 6.61E-09	< 3.17E-09	< 3.06E-09	< 3.27E-09	< 2.63E-09	< 2.11E-09	< 2.66E-09
Methylene bis-chloroaniline	101-14-4	< 3.10E-08	< 7.29E-09	< 9.88E-08	< 2.02E-08	< 3.31E-08	< 9.74E-09	< 5.83E-08	< 6.63E-09	< 7.94E-09	< 5.75E-09	< 5.73E-09	< 4.14E-09	< 6.95E-09
Methylene Chloride	00075-09-2	1.10E-06	9.51E-07	3.86E-05	1.86E-06	4.18E-07	2.49E-06	1.14E-06	4.81E-07	6.98E-07	9.04E-06	5.00E-07	6.51E-07	2.22E-07
m,p-Xylenes	00108-38-3/00106-42-3	2.62E-07	5.79E-07	7.11E-07	5.15E-07	4.11E-07	6.24E-07	1.44E-05	4.35E-07	4.82E-07	1.08E-06	1.51E-07	3.65E-07	7.96E-07
Naphthalene	91-20-3	2.50E-08	3.33E-08	3.08E-07	1.73E-08	2.52E-07	5.11E-08	4.32E-08	2.72E-08	2.79E-08	8.18E-09	8.87E-09	3.02E-08	1.14E-08
n-Hexane	00110-54-3	8.24E-06	1.08E-06	1.58E-06	1.56E-06	5.91E-06	1.49E-06	1.08E-05	1.28E-06	3.21E-06	1.66E-06	2.84E-07	4.68E-07	2.05E-06
Nitrobenzene	98-95-3	< 7.80E-09	< 4.60E-09	< 1.40E-08	< 4.12E-09	< 7.21E-09	< 9.74E-09	< 1.23E-08	< 5.79E-09	< 5.63E-09	< 5.80E-09	2.02E-08	< 3.87E-09	< 5.07E-09
n-Nitrosodimethylamine (3)	62-75-9	0.00E+00	< 7.93E-09	< 4.50E-08	0.00E+00	0.00E+00	< 1.92E-08	0.00E+00	< 1.09E-08	< 9.76E-09	< 1.08E-08	< 8.68E-09	< 6.78E-09	< 9.49E-09
n-Nitrosomorpholine	59-89-2	< 1.15E-08	< 7.61E-09	< 2.10E-08	< 7.30E-09	< 1.08E-08	< 1.69E-08	< 1.80E-08	< 1.00E-08	< 8.88E-09	< 9.47E-09	< 7.60E-09	< 6.21E-09	< 8.30E-09
N,N-Dimethylaniline	121-69-7	< 4.57E-09	< 3.39E-09	< 8.87E-09	< 2.92E-09	< 4.22E-09	< 6.96E-09	< 7.09E-09	< 4.06E-09	< 3.94E-09	< 4.12E-09	< 3.33E-09	< 2.68E-09	< 3.61E-09
o-Anisidine	90-04-0	< 9.19E-09	< 6.01E-09	< 1.72E-08	< 6.15E-09	< 8.50E-09	< 1.25E-08	< 1.44E-08	< 7.35E-09	< 7.13E-09	< 7.44E-08	< 6.05E-09	< 4.89E-09	< 6.47E-09
o-Toluidine	95-53-4	< 4.82E-09	< 3.65E-09	< 1.14E-08	< 3.13E-09	< 4.51E-09	2.23E-07	< 7.47E-09	< 4.84E-09	< 4.25E-09	< 4.61E-09	< 3.71E-09	8.24E-08	< 4.10E-09
o-Xylene	00095-47-6	9.60E-08	3.89E-07	3.20E-07	3.77E-07	1.52E-07	9.51E-07	7.73E-06	1.55E-07	1.66E-07	3.91E-07	1.33E-07	1.68E-07	3.55E-07
Pentachloronitrobenzene	82-68-8	< 2.56E-08	< 2.09E-08	< 4.50E-08	< 1.67E-08	< 2.35E-08	< 3.36E-08	< 3.92E-08	< 2.06E-08	< 2.20E-08	< 1.96E-08	< 1.58E-08	< 1.38E-08	< 1.69E-08
Pentachlorophenol	87-86-5	< 1.86E-08	< 9.21E-09	< 3.66E-08	< 1.43E-08	< 1.71E-08	< 1.87E-08	< 2.85E-08	< 1.13E-08	< 1.21E-08	< 1.09E-08	< 8.82E-09	< 7.57E-09	4.53E-09
Phenol	108-95-2	7.21E-08	4.00E-08	2.77E-07	1.47E-08	7.61E-07	4.43E-08	2.39E-08	3.19E-08	5.95E-08	1.21E-08	9.20E-09	2.72E-08	4.20E-08
Propylene Oxide	00075-56-9	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Styrene	00100-42-5	< 2.51E-08	< 1.78E-08	< 3.49E-08	4.44E-08	< 1.10E-08	4.25E-06	< 2.57E-08	4.12E-08	1.63E-07	2.18E-07	5.01E-08	< 1.14E-08	5.40E-08
t-Butyl Methyl Ether	01634-04-4	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	3.25E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Tetrachloroethene	00127-18-4	< 4.64E-07	4.10E-06	9.65E-08	8.59E-08	< 2.04E-07	1.01E-07	< 4.75E-07	7.75E-08	1.13E-07	1.22E-07	2.41E-08	7.88E-08	1.33E-07
Toluene	00108-88-3	1.65E-06	2.06E-06	2.11E-06	5.99E-07	1.73E-06	5.45E-07	1.05E-06	1.32E-06	2.26E-06	1.84E-06	3.92E-07	5.72E-07	2.79E-06
Trichloroethene	00079-01-6	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	2.22E-07
Trifluralin	1582-09-8	< 1.23E-08	< 1.24E-08	< 3.16E-08	< 9.49E-09	< 1.19E-08	< 2.03E-08	< 1.85E-08	< 1.28E-08	< 1.35E-08	< 1.24E-08	< 1.02E-08	< 9.38E-09	< 1.10E-08
Vinyl Acetate	00108-05-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	2.35E-06	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Vinyl Chloride	00075-01-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chromium		3.18E-08	6.99E-09	5.91E-08	2.38E-08	2.72E-08	4.26E-09	1.23E-07	4.41E-09	1.53E-09	1.56E-08	ND	6.44E-09	6.58E-09
Nickel		4.92E-08	< 2.79E-08	9.53E-08	4.09E-08	2.47E-08	< 4.26E-08	< 4.91E-08	3.38E-08	< 3.05E-08	2.40E-08	< 2.33E-08	2.15E-08	3.42E-08
Cadmium		9.35E-09	2.40E-09	7.01E-09	2.55E-09	5.05E-09	2.18E-09	3.89E-09	9.09E-10	1.12E-09	4.08E-09	1.27E-09	7.29E-10	5.94E-10
Lead		6.35E-09	3.24E-10	1.25E-08	3.42E-09	2.03E-08	ND	1.03E-08	ND	ND	8.16E-09	5.51E-10	ND	7.10E-09

(1) - Total HAPs include listed individual organic and metal HAP compounds.
(2) - Compounds detected only as tentatively identified compounds (TICs) in emissions from indicated rubber compounds. No applicable data for non-detects.
(3) - Blank correction caused a negative value. A "0" is reported for these cases, but is not included in the statistics summary.

TABLE 3-1. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #14 lbs/lb rubber	Cmpd. #15 lbs/lb rubber	Cmpd. #16 lbs/lb rubber	Cmpd. #17 lbs/lb rubber	Cmpd. #18 lbs/lb rubber	Cmpd. #19 lbs/lb rubber	Cmpd. #20 lbs/lb rubber	Cmpd. #21 lbs/lb rubber	Cmpd. #22 lbs/lb rubber	Cmpd. #23 lbs/lb rubber	Mean lbs/lb rubber	Max. lbs/lb rubber	Std. Dev. lbs/lb rubber
TOTAL VOCs		2.30E-04	9.69E-06	8.18E-05	4.43E-04	6.48E-05	2.70E-05	8.22E-06	1.56E-04	1.23E-04	4.02E-05	1.06E-04	4.43E-04	1.08E-04
TOTAL SPECIATED ORGANICS		< 1.47E-04	< 6.32E-05	< 3.48E-05	< 3.20E-04	< 1.35E-04	< 2.40E-05	< 1.97E-05	< 1.40E-05	< 9.27E-05	< 6.19E-05	< 9.80E-05	< 3.20E-04	7.79E-05
TOTAL PARTICULATE MATTER (PM)		1.30E-04	1.42E-04	3.17E-04	8.96E-05	1.92E-04	6.89E-05	7.84E-04	7.50E-05	4.49E-04	3.39E-04	3.21E-04	9.25E-04	2.52E-04
TOTAL ORGANIC HAPS		< 4.58E-05	< 5.79E-05	< 8.40E-06	< 1.50E-04	< 5.64E-05	< 6.40E-06	< 1.15E-05	< 1.49E-05	< 3.36E-05	< 5.12E-05	< 4.75E-05	< 1.50E-04	3.64E-05
TOTAL METAL HAPs		< 3.98E-08	< 2.54E-08	< 1.80E-08	< 7.68E-08	< 5.66E-08	< 3.96E-08	< 3.41E-08	< 2.32E-08	< 3.70E-08	< 5.15E-08	< 5.74E-08	< 1.86E-07	4.24E-08
TOTAL HAPS (1)		< 4.59E-05	< 5.79E-05	< 8.42E-06	< 1.50E-04	< 5.65E-05	< 6.44E-06	< 1.15E-05	< 1.50E-05	< 3.36E-05	< 5.13E-05	< 4.76E-05	< 1.50E-04	3.64E-05
Individual HAPs:														
1,1-Dichloroethane	00075-34-3	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,1-Dichloroethene	00075-35-4	2.19E-07	1.39E-08	< 8.38E-08	< 1.89E-07	8.80E-08	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.22E-07	5.47E-07	1.64E-07
1,1,1-Trichloroethane	00071-55-6	3.61E-08	1.83E-08	1.75E-08	6.03E-08	< 1.83E-07	1.14E-07	7.31E-07	1.04E-08	6.55E-08	< 4.61E-07	< 1.80E-07	7.31E-07	1.97E-07
1,1,2-Trichloroethane	00079-00-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,1,2,2-Tetrachloroethane	00079-34-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
1,2-Dibromoethane	00106-93-4	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dichloroethane	00107-06-2	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dichloropropane	00078-87-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2,4-Trichlorobenzene	120-82-1	< 1.41E-08	< 2.57E-09	< 3.64E-09	< 1.20E-08	< 5.87E-09	< 4.75E-09	< 5.32E-09	< 4.19E-09	< 3.88E-09	< 3.85E-09	< 6.37E-09	< 1.41E-08	3.20E-09
1,3-Butadiene	00106-99-0	2.39E-07	6.17E-08	< 1.18E-08	< 1.33E-07	1.80E-07	5.79E-08	< 1.54E-08	< 1.38E-08	1.31E-07	1.43E-07	< 1.23E-07	4.67E-07	1.14E-07
1,4-Dichlorobenzene	00106-46-7	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,4-Dioxane	00123-91-1	< 4.13E-07	< 2.34E-07	< 3.35E-07	< 7.56E-07	< 7.31E-07	< 2.53E-07	< 4.37E-07	< 3.93E-07	< 4.37E-07	< 1.85E-06	< 8.05E-07	< 1.95E-06	5.95E-07
1,4-Phenylenediamine	106-50-3	< 2.88E-08	< 8.85E-09	< 8.81E-09	< 2.19E-08	< 1.42E-08	< 8.50E-09	< 1.58E-08	< 7.56E-09	< 7.97E-09	< 7.92E-09	< 1.41E-08	< 3.67E-08	7.37E-09
2-Butanone	00078-93-3	3.10E-07	8.78E-08	3.95E-08	1.04E-06	1.26E-06	6.30E-08	1.30E-07	4.73E-07	4.37E-06	< 9.23E-07	1.16E-06	5.91E-06	1.40E-06
2-Methylphenol	95-48-7	< 5.47E-09	< 3.20E-09	< 4.31E-09	< 1.30E-08	< 7.42E-09	< 5.06E-09	1.01E-09	< 5.50E-09	< 4.69E-09	< 4.82E-09	< 9.71E-09	8.64E-08	1.66E-08
2,4-Dinitrophenol	51-28-5	< 2.50E-08	< 2.07E-08	< 1.86E-08	< 1.01E-07	< 3.17E-08	1.62E-08	< 3.12E-08	< 1.95E-08	< 2.61E-08	< 2.37E-08	< 3.30E-08	< 1.01E-07	1.88E-08
2,4-Dinitrotoluene	121-14-2	< 6.00E-09	< 4.05E-09	< 3.79E-09	< 1.68E-08	< 6.45E-09	< 6.45E-09	< 8.01E-09	< 4.94E-09	< 6.00E-09	< 5.66E-09	< 7.91E-09	< 1.92E-08	3.93E-09
2,4,5-Trichlorophenol	95-95-4	< 8.12E-09	< 4.17E-09	< 4.72E-09	< 1.72E-08	< 8.07E-09	< 7.28E-09	< 8.01E-09	< 5.59E-09	< 6.11E-09	< 5.75E-09	< 8.57E-09	< 1.92E-08	3.91E-09
2,4,6-Trichlorophenol	88-06-2	< 8.42E-09	< 4.13E-09	< 4.94E-09	< 1.76E-08	< 8.45E-09	< 7.37E-09	< 7.91E-09	< 5.64E-09	< 6.44E-09	< 6.10E-09	< 8.74E-09	< 1.90E-08	3.90E-09
3,3'-Dichlorobenzidine	91-94-1	< 2.88E-09	< 7.72E-09	< 2.38E-09	< 2.55E-08	< 3.23E-09	< 3.58E-09	< 3.39E-08	< 2.93E-09	< 3.17E-09	< 3.05E-09	< 1.21E-08	< 7.11E-08	1.65E-08
3,3'-Dimethoxybenzidine	119-90-4	< 4.89E-09	< 1.21E-08	< 3.46E-09	< 3.84E-08	< 4.71E-09	< 5.06E-09	< 4.29E-08	< 4.11E-09	< 5.29E-09	< 5.09E-09	< 1.56E-08	< 9.02E-08	2.02E-08
3,3'-Dimethylbenzidine	119-93-7	< 1.65E-09	< 4.29E-09	< 1.34E-09	< 1.51E-08	< 1.81E-09	< 2.09E-09	< 1.29E-08	< 1.66E-09	< 1.80E-09	< 1.72E-09	< 5.50E-09	< 2.70E-08	6.44E-09
3/4-Methylphenol	106-39-4/106-44-5	< 5.12E-09	< 3.00E-09	< 4.05E-09	< 1.23E-08	< 6.97E-09	< 4.84E-09	< 6.69E-09	< 5.24E-09	< 4.42E-09	< 4.51E-09	< 2.08E-08	2.37E-07	5.09E-08
4-Aminobiphenyl	92-67-1	< 1.71E-09	< 2.07E-09	< 1.45E-09	< 5.86E-09	< 2.39E-09	< 2.27E-09	< 3.24E-09	< 1.35E-09	< 2.02E-09	< 1.90E-09	< 2.91E-09	< 7.29E-09	1.58E-09
4-Methyl-2-Pentanone	00108-10-1	8.26E-07	4.90E-08	8.64E-08	1.65E-07	4.57E-06	< 6.34E-08	1.91E-07	2.76E-08	1.37E-05	< 4.61E-07	< 3.50E-06	3.06E-05	7.36E-06
4-Nitrobiphenyl	92-93-3	< 3.47E-09	< 4.68E-09	< 2.90E-09	< 1.27E-08	< 4.78E-09	< 4.23E-09	< 7.30E-09	< 2.53E-09	< 4.04E-09	< 3.80E-09	< 6.07E-09	< 1.64E-08	3.63E-09
4-Nitrophenol	100-02-7	< 1.90E-08	< 1.05E-08	< 1.18E-08	< 3.91E-08	< 2.01E-08	9.90E-09	< 2.44E-08	< 1.31E-08	< 1.90E-08	< 1.80E-08	< 2.19E-08	< 5.85E-08	1.08E-08
4,4'-Methylenedianiline	101-77-9	< 3.59E-09	< 8.58E-09	< 2.82E-09	< 2.85E-08	< 3.81E-09	< 4.27E-09	< 2.28E-08	< 3.45E-09	< 3.93E-09	< 3.76E-09	< 1.05E-08	< 4.79E-08	1.15E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 9.77E-09	< 1.51E-08	< 1.01E-08	< 7.21E-08	< 1.66E-08	< 1.53E-08	< 2.10E-08	< 9.17E-09	< 1.15E-08	< 1.07E-08	< 2.00E-08	< 7.21E-08	1.41E-08
Acetaldehyde (2)	00075-07-0		5.12E-07									< 8.04E-07	6.95E-07	9.18E-08
Acetonitrile	75-05-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	4.63E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.17E-07	< 9.76E-07	2.92E-07
Acetophenone	98-86-2	1.70E-08	1.10E-08	1.11E-08	1.45E-08	5.72E-08	2.48E-08	1.61E-07	1.76E-08	2.92E-08	9.02E-09	1.25E-07	1.47E-06	2.98E-07
Acrolein	00107-02-8	8.26E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	2.27E-07	3.00E-07	< 9.23E-07	< 4.50E-07	< 9.76E-07	3.08E-07
Acrylonitrile	00107-13-1	1.17E-05	< 1.17E-07	< 1.68E-07	< 3.78E-07	8.00E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 9.43E-07	1.17E-05	2.32E-06
Allyl Chloride	00107-05-1	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Aniline	62-53-3	< 3.06E-09	< 2.92E-09	< 2.45E-09	5.13E-07	1.66E-07	< 3.10E-09	7.20E-09	< 3.36E-09	4.68E-07	2.23E-07	< 1.08E-07	5.13E-07	1.77E-07
a,a,a-Trichlorotoluene	98-07-7	< 1.17E-08	< 2.18E-09	< 2.94E-09	< 6.97E-09	< 4.71E-09	< 3.84E-09	< 4.10E-09	< 3.41E-09	< 3.22E-09	< 3.18E-09	< 4.90E-09	< 1.17E-08	2.30E-09
Benzene	00071-43-2	5.24E-07	1.74E-08	2.61E-08	< 1.28E-07	3.77E-08	1.42E-07	5.92E-08	< 1.33E-08	8.87E-08	< 1.56E-08	< 1.16E-07	6.61E-07	1.60E-07
Benzidine	92-87-5	< 2.35E-09	1.80E-08	< 2.01E-09	< 1.95E-08	< 2.71E-09	< 3.10E-09	< 1.31E-08	< 2.53E-09	< 2.57E-09	< 2.48E-09	< 7.43E-09	< 2.75E-08	7.37E-09
Benzyl Chloride	00100-44-7	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Biphenyl	92-52-4	1.24E-09	< 1.48E-09	< 1.56E-09	< 3.75E-09	< 2.65E-09	< 2.40E-09	< 2.64E-09	< 1.83E-09	9.77E-09	< 1.90E-09	< 5.59E-09	5.63E-08	1.11E-08
bis(2-Chloroethyl)ether	111-44-4	< 5.24E-09	< 3.74E-09	< 4.12E-09	< 1.50E-08	< 7.10E-09	< 5.14E-09	< 8.11E-09	< 5.55E-09	< 4.53E-09	< 4.64E-09	< 7.48E-09	< 1.87E-08	3.86E-09
bis(2-Ethylhexyl)phthalate	117-81-7	0.00E+00	4.60E-08	3.54E-08	2.40E-09	2.20E-08	1.31E-08	4.53E-08	1.31E-07	8.41E-09	6.74E-07	1.06E-07	7.40E-07	1.97E-07
Bromoform	00075-25-2	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 1.93E-07	< 4.88E-07	1.39E-07
Bromomethane	00074-83-9	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	5.62E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07

TABLE 3-1. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #14 lbs/lb rubber	Cmpd. #15 lbs/lb rubber	Cmpd. #16 lbs/lb rubber	Cmpd. #17 lbs/lb rubber	Cmpd. #18 lbs/lb rubber	Cmpd. #19 lbs/lb rubber	Cmpd. #20 lbs/lb rubber	Cmpd. #21 lbs/lb rubber	Cmpd. #22 lbs/lb rubber	Cmpd. #23 lbs/lb rubber	Mean lbs/lb rubber	Max. lbs/lb rubber	Std. Dev. lbs/lb rubber
Carbon Disulfide	00075-15-0	4.26E-06	1.54E-07	4.50E-08	< 1.89E-07	3.54E-05	< 6.34E-08	2.60E-07	4.36E-08	9.56E-08	5.07E-07	< 1.01E-05	1.03E-04	2.32E-05
Carbon Tetrachloride	00056-23-5	< 1.03E-07	4.68E-05	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	2.36E-07	< 2.22E-06	4.68E-05	9.51E-06
Carbonyl sulfide	00463-58-1	1.13E-05	2.73E-06	< 1.05E-07	< 4.36E-07	< 2.29E-06	1.69E-07	1.58E-06	3.52E-07	< 1.34E-07	2.88E-06	< 2.43E-06	2.24E-05	4.94E-06
Chlorobenzene	00108-90-7	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
Chloroethane	00075-00-3	< 1.03E-07	< 5.85E-08	1.70E-06	2.01E-07	< 1.83E-07	< 6.34E-08	4.24E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.86E-07	1.70E-06	3.38E-07
Chloroform	00067-66-3	2.45E-08	6.51E-07	1.23E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	1.72E-08	< 1.09E-07	< 4.61E-07	< 2.17E-07	6.51E-07	1.81E-07
Chloromethane	00074-87-3	3.61E-08	1.02E-07	1.44E-08	8.66E-07	< 1.83E-07	1.48E-07	3.35E-07	3.93E-07	3.82E-08	< 4.61E-07	< 2.06E-07	8.86E-07	2.13E-07
Cumene	00098-82-8	< 1.43E-08	< 8.12E-09	< 1.16E-08	< 1.31E-07	1.21E-07	1.06E-06	< 1.52E-08	2.80E-08	5.61E-08	< 1.60E-08	< 2.64E-07	3.17E-06	6.74E-07
Dibenzofuran	132-64-9	2.41E-09	7.41E-10	< 1.19E-09	< 3.81E-09	< 2.06E-09	< 1.83E-09	9.63E-10	3.06E-10	< 1.64E-09	5.31E-10	< 3.27E-09	3.42E-08	6.64E-09
Dimethylaminoazobenzene	60-11-7	< 2.71E-09	1.64E-08	< 2.42E-09	< 2.52E-08	< 3.29E-09	< 3.58E-09	< 1.37E-08	< 2.88E-09	< 2.95E-09	< 2.83E-09	< 8.62E-09	< 2.87E-08	8.45E-09
Dimethylphthalate	131-11-3	3.00E-09	2.18E-09	3.12E-09	< 4.75E-09	< 2.58E-09	< 2.22E-09	< 2.64E-09	< 1.70E-09	< 1.96E-09	< 1.86E-09	< 3.19E-09	1.57E-08	2.79E-09
Di-n-butylphthalate (3)	84-74-2	8.95E-09	0.00E+00	3.68E-09	0.00E+00	8.27E-08	2.91E-08	2.17E-08	2.86E-07	3.57E-08	8.78E-08	< 4.72E-08	3.34E-07	8.58E-08
Epichlorohydrin	00106-89-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Ethyl Acrylate (2)					4.73E-06							4.73E-06	4.73E-06	NA
Ethylbenzene	00100-41-4	6.12E-08	4.84E-08	< 1.16E-08	< 1.30E-07	2.78E-07	3.24E-08	7.92E-08	< 1.36E-08	1.28E-07	< 1.59E-08	< 2.86E-07	4.32E-06	8.64E-07
Hexachlorobenzene	118-74-1	< 4.83E-09	< 3.63E-09	< 4.61E-09	< 1.56E-08	< 7.61E-09	< 6.71E-09	< 7.40E-09	< 4.02E-09	< 5.68E-09	< 5.35E-09	< 7.47E-09	< 1.62E-08	3.29E-09
Hexachlorobutadiene	00087-68-3	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Hexachlorocyclopentadiene	77-47-4	< 8.48E-09	< 4.05E-09	< 6.81E-09	< 1.64E-08	< 1.50E-08	< 1.11E-08	< 9.93E-09	< 8.52E-09	< 8.51E-09	< 8.00E-09	< 1.16E-08	2.39E-08	4.49E-09
Hexachloroethane	67-72-1	< 8.59E-09	1.23E-06	< 6.43E-09	< 1.87E-08	< 1.11E-08	< 7.46E-09	< 1.05E-08	< 8.13E-09	< 7.42E-09	6.06E-09	< 6.39E-08	1.23E-06	2.49E-07
Hydroquinone	123-31-9	< 2.83E-08	< 6.39E-09	< 6.43E-09	< 1.48E-08	< 1.03E-08	< 6.76E-09	< 9.12E-09	< 6.03E-09	< 7.80E-09	< 7.74E-09	< 1.19E-08	2.62E-05	5.35E-06
Isophorone	78-59-1	< 8.24E-09	< 1.64E-09	< 2.04E-09	< 7.03E-09	< 3.29E-09	< 2.70E-09	< 3.50E-09	3.93E-09	3.37E-07	< 2.26E-09	< 4.95E-08	6.63E-07	1.48E-07
Methylene bis-chloroaniline	101-14-4	< 5.89E-09	< 1.55E-08	< 4.87E-09	< 5.41E-08	< 6.58E-09	< 6.98E-09	< 4.70E-08	< 5.68E-09	< 6.44E-09	< 6.15E-09	< 1.98E-08	< 9.88E-08	2.35E-08
Methylene Chloride	00075-09-2	1.68E-06	7.02E-07	5.00E-07	1.65E-05	8.68E-07	3.74E-07	1.03E-06	2.82E-07	1.01E-06	1.10E-06	3.58E-06	3.86E-05	8.28E-06
m,p-Xylenes	00108-38-3/00106-42-3	3.35E-07	3.07E-07	1.07E-07	4.76E-07	8.83E-07	1.01E-07	3.36E-07	1.42E-07	4.22E-07	1.18E-07	1.05E-06	1.44E-05	2.86E-06
Naphthalene	91-20-3	< 5.18E-09	2.78E-08	1.13E-08	4.01E-08	3.30E-08	1.23E-08	1.71E-08	1.25E-08	5.52E-08	3.18E-08	< 4.74E-08	3.08E-07	7.35E-08
n-Hexane	00110-54-3	6.78E-07	7.88E-07	1.81E-06	1.13E-04	4.03E-07	2.37E-07	4.86E-07	2.53E-07	7.75E-07	6.22E-07	< 6.89E-06	1.13E-04	2.28E-05
Nitrobenzene	98-95-3	< 1.48E-08	< 2.92E-09	< 3.75E-09	< 1.29E-08	< 6.07E-09	< 4.80E-09	< 6.03E-09	< 4.28E-09	< 4.09E-09	< 4.07E-09	< 7.39E-09	2.02E-08	4.38E-09
n-Nitrosodimethylamine (3)	62-75-9	< 7.89E-09	0.00E+00	< 6.43E-09	0.00E+00	< 1.11E-08	< 8.33E-09	< 1.94E-08	< 9.04E-09	< 6.82E-09	< 6.94E-09	< 8.90E-09	< 4.50E-08	9.40E-09
n-Nitrosomorpholine	59-89-2	< 7.59E-09	< 5.42E-09	< 5.87E-09	< 1.46E-08	< 1.01E-08	< 7.28E-09	< 9.07E-09	< 7.91E-09	< 6.55E-09	< 6.72E-09	< 9.78E-09	< 2.10E-08	4.03E-09
N,N-Dimethylaniline	121-69-7	< 1.04E-08	< 2.07E-09	< 2.60E-09	< 6.27E-09	< 4.19E-09	< 3.40E-09	< 3.80E-09	< 3.06E-09	< 2.89E-09	< 2.83E-09	< 4.40E-09	< 1.04E-08	2.06E-09
o-Anisidine	90-04-0	< 1.86E-08	< 4.33E-09	< 4.76E-09	< 1.27E-08	< 7.61E-09	< 6.19E-09	< 7.35E-09	< 5.50E-09	< 5.13E-09	< 5.09E-09	< 8.28E-09	< 1.86E-08	3.92E-09
o-Toluidine	95-53-4	< 3.65E-09	< 2.34E-09	< 2.82E-09	< 6.09E-09	< 4.90E-09	< 3.58E-09	< 4.92E-09	< 3.89E-09	< 3.11E-09	< 3.18E-09	< 1.74E-08	2.23E-07	4.67E-08
o-Xylene	00095-47-6	1.71E-07	8.07E-08	5.49E-08	5.09E-07	3.66E-07	4.81E-08	1.25E-07	1.59E-07	3.62E-07	< 1.59E-08	< 5.77E-07	7.73E-06	1.54E-06
Pentachloronitrobenzene	82-68-8	< 1.53E-08	< 1.18E-08	< 1.35E-08	< 3.63E-08	< 2.23E-08	< 1.96E-08	< 2.01E-08	< 1.18E-08	< 1.80E-08	< 1.68E-08	< 2.17E-08	< 4.50E-08	8.65E-09
Pentachlorophenol	87-86-5	< 6.77E-09	< 1.02E-08	< 7.43E-09	< 4.36E-08	< 1.22E-08	1.25E-08	< 1.63E-08	< 6.51E-09	< 7.91E-09	< 7.43E-09	< 1.43E-08	< 4.36E-08	9.58E-09
Phenol	108-95-2	5.33E-08	2.69E-08	4.56E-08	1.27E-06	5.63E-08	< 3.79E-09	1.64E-08	9.35E-09	6.87E-07	1.25E-08	< 1.57E-07	1.27E-06	3.09E-07
Propylene Oxide	00075-56-9	6.97E-06	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 6.97E-07	6.97E-06	1.37E-06
Styrene	00100-42-5	6.50E-08	< 7.92E-09	< 1.13E-08	< 1.28E-07	5.45E-08	< 8.58E-09	< 1.48E-08	6.32E-08	1.48E-06	< 1.56E-08	< 2.95E-07	4.25E-06	8.94E-07
t-Butyl Methyl Ether	01634-04-4	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	7.98E-06	< 2.18E-07	< 9.23E-07	< 7.15E-07	7.98E-06	1.57E-06
Tetrachloroethene	00127-18-4	1.42E-07	6.95E-07	< 8.38E-08	< 1.89E-07	7.66E-06	2.81E-08	7.59E-08	< 9.83E-08	1.91E-06	< 4.61E-07	< 4.27E-07	4.10E-06	8.75E-07
Toluene	00108-88-3	1.55E-06	3.16E-07	1.75E-07	1.04E-06	6.68E-07	4.34E-07	4.75E-07	1.38E-07	2.47E-06	2.31E-05	2.14E-06	2.31E-05	4.53E-06
Trichloroethene	00079-01-6	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.03E-07	< 4.88E-07	1.49E-07
Trifluralin	1582-09-8	< 1.08E-08	< 8.98E-09	< 8.10E-09	< 1.73E-08	< 1.38E-08	< 1.07E-08	< 1.31E-08	< 8.21E-09	< 1.08E-08	< 1.02E-08	< 1.29E-08	< 3.16E-08	5.08E-09
Vinyl Acetate	00108-05-4	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.94E-07	2.35E-06	4.62E-07
Vinyl Chloride	00075-01-4	< 1.03E-07	1.32E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 1.99E-07	< 4.88E-07	1.51E-07
Chromium		4.05E-09	1.96E-09	8.29E-10	4.20E-08	< 1.62E-08	< 1.06E-08	9.37E-09	1.08E-09	3.81E-09	2.11E-08	< 1.83E-08	1.23E-07	2.66E-08
Nickel		< 2.70E-08	2.16E-08	< 1.66E-08	3.21E-08	3.89E-08	2.85E-08	< 2.34E-08	< 2.15E-08	< 2.54E-08	2.91E-08	< 3.30E-08	9.53E-08	1.59E-08
Cadmium		3.38E-09	1.66E-09	6.09E-10	2.65E-09	1.47E-09	6.06E-10	1.35E-09	6.27E-10	2.79E-09	1.04E-09	< 2.49E-09	9.35E-09	2.16E-09
Lead		5.39E-09	2.27E-10	ND	ND	ND	1.86E-09	ND	ND	4.97E-09	2.73E-10	< 3.55E-09	2.03E-08	5.15E-09

(1) - Total HAPs include listed individual HAP compounds.
(2) - Compounds detected only as tentatively identified compounds (TICs) in emissions from indicated rubber compounds. No applicable data for non-detects.
(3) - Blank correction caused a negative value. A "0" is reported for these cases, but is not included in the statistics summary.

TABLE 3-1A. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed In Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #1 lbs/lb rubber	Cmpd. #2 lbs/lb rubber	Cmpd. #3 lbs/lb rubber	Cmpd. #4 lbs/lb rubber	Cmpd. #5 lbs/lb rubber	Cmpd. #6 lbs/lb rubber	Cmpd. #7 lbs/lb rubber	Cmpd. #8 lbs/lb rubber	Cmpd. #9 lbs/lb rubber	Cmpd. #10 lbs/lb rubber	Cmpd. #11 lbs/lb rubber	Cmpd. #12 lbs/lb rubber	Cmpd. #13 lbs/lb rubber
TOTAL VOCs		6.11E-05	3.86E-05	1.37E-04	3.86E-05	2.15E-04	3.96E-05	1.20E-04	1.55E-05	2.84E-05	2.90E-04	3.22E-05	1.59E-05	2.28E-04
TOTAL SPECIATED ORGANICS		< 8.08E-05	< 6.61E-05	< 1.09E-04	< 6.09E-05	< 7.36E-05	< 1.25E-04	< 1.16E-04	< 6.04E-05	< 6.53E-05	< 3.13E-04	< 4.21E-05	< 6.70E-05	< 1.63E-04
TOTAL PARTICULATE MATTER (PM)		1.75E-04	4.02E-04	8.99E-04	3.00E-04	9.25E-04	4.00E-04	5.66E-04	2.22E-04	4.92E-05	3.58E-04	7.82E-05	1.83E-04	2.46E-04
TOTAL ORGANIC HAPS		< 4.03E-05	< 1.85E-05	< 7.12E-05	< 2.97E-05	< 5.05E-05	< 6.76E-05	< 6.45E-05	< 5.99E-05	< 2.02E-05	< 1.40E-04	< 1.60E-05	< 5.90E-05	< 1.91E-05
TOTAL METAL HAPs		< 9.67E-08	< 3.76E-08	< 1.74E-07	< 7.07E-08	< 7.73E-08	< 4.90E-08	< 1.85E-07	< 3.91E-08	< 3.32E-08	< 5.18E-08	< 2.51E-08	< 2.87E-08	< 4.85E-08
TOTAL HAPS (1)		< 4.04E-05	< 1.86E-05	< 7.14E-05	< 2.98E-05	< 5.06E-05	< 6.76E-05	< 6.47E-05	< 5.99E-05	< 2.03E-05	< 1.40E-04	< 1.60E-05	< 5.90E-05	< 1.92E-05
Individual HAPs:														
Carbon Disulfide	00075-15-0	< 4.64E-07	< 1.31E-07	< 2.57E-07	1.99E-07	1.84E-07	3.83E-06	< 4.75E-07	2.81E-05	6.66E-07	1.03E-04	8.64E-06	4.52E-05	8.32E-07
n-Hexane	00110-54-3	8.24E-06	1.08E-06	1.58E-06	1.56E-06	5.91E-06	1.49E-06	1.08E-05	1.28E-06	3.21E-06	1.66E-06	2.84E-07	4.68E-07	2.05E-06
Ethyl Acrylate (2)														
Methylene Chloride	00075-09-2	1.10E-06	9.51E-07	3.86E-05	1.86E-06	4.18E-07	2.49E-06	1.14E-06	4.81E-07	6.98E-07	9.04E-06	5.00E-07	6.51E-07	2.22E-07
4-Methyl-2-Pentanone	00108-10-1	< 4.64E-07	1.97E-07	1.26E-05	1.49E-05	< 2.04E-07	3.06E-05	< 4.75E-07	1.27E-07	1.24E-07	4.15E-07	6.79E-08	< 8.41E-08	9.87E-08
Carbonyl sulfide	00463-58-1	< 2.32E-07	< 1.61E-07	< 3.15E-07	< 1.22E-07	5.34E-07	1.59E-06	< 2.33E-07	2.24E-05	1.15E-06	< 2.44E-07	< 1.23E-07	6.14E-06	5.65E-07
Carbon Tetrachloride	00056-23-5	< 4.64E-07	< 1.31E-07	1.19E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Toluene	00108-88-3	1.65E-06	2.06E-06	2.11E-06	5.99E-07	1.73E-06	5.45E-07	1.05E-06	1.32E-06	2.26E-06	1.84E-06	3.92E-07	5.72E-07	2.79E-06
Hydroquinone	123-31-9	< 1.07E-08	< 9.15E-09	< 2.13E-08	8.10E-07	2.62E-05	< 1.37E-08	< 1.68E-08	< 9.91E-09	< 9.63E-09	< 8.13E-09	< 6.62E-09	< 6.65E-09	< 7.12E-09
2-Butanone	00078-93-3	5.91E-06	1.59E-06	9.01E-07	2.74E-06	1.53E-06	4.40E-07	1.40E-06	5.08E-07	4.92E-07	1.18E-06	8.64E-08	8.20E-07	3.22E-07
m,p-Xylenes	00108-38-3/00106-42-3	2.62E-07	5.79E-07	7.11E-07	5.15E-07	4.11E-07	6.24E-07	1.44E-05	4.35E-07	4.82E-07	1.08E-06	1.51E-07	3.65E-07	7.96E-07
Acrylonitrile	00107-13-1	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	6.81E-08	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	9.54E-07
1,4-Dioxane	00123-91-1	< 1.85E-06	< 5.25E-07	< 1.03E-06	< 3.98E-07	< 8.16E-07	< 1.84E-06	< 1.90E-06	< 4.27E-07	< 5.08E-07	< 1.95E-06	< 3.95E-07	< 3.36E-07	< 7.10E-07
t-Butyl Methyl Ether	01634-04-4	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	3.25E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Propylene Oxide	00075-56-9	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Acetaldehyde (2)	00075-07-0	6.95E-07												
o-Xylene	00095-47-6	9.60E-08	3.89E-07	3.20E-07	3.77E-07	1.52E-07	9.51E-07	7.73E-06	1.55E-07	1.66E-07	3.91E-07	1.33E-07	1.68E-07	3.55E-07
Acrolein	00107-02-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	7.10E-07
Tetrachloroethene	00127-18-4	< 4.64E-07	4.10E-06	9.65E-08	6.59E-08	< 2.04E-07	1.01E-07	< 4.75E-07	7.75E-08	1.13E-07	1.22E-07	2.41E-08	7.88E-08	1.33E-07
Acetonitrile	75-05-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Epichlorohydrin	00106-89-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Benzyl Chloride	00100-44-7	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Hexachlorobutadiene	00087-68-3	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Allyl Chloride	00107-05-1	< 9.27E-07	< 2.62E-07	< 5.15E-07	< 1.99E-07	< 4.08E-07	< 9.19E-07	< 9.49E-07	< 2.14E-07	< 2.54E-07	< 9.76E-07	< 1.97E-07	< 1.68E-07	< 3.55E-07
Styrene	00100-42-5	< 2.51E-08	< 1.78E-08	< 3.49E-08	4.44E-08	< 1.10E-08	4.25E-06	< 2.57E-08	4.12E-08	1.63E-07	2.18E-07	5.01E-08	< 1.14E-08	5.40E-08
Vinyl Acetate	00108-05-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	2.35E-06	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloroethane	00075-00-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Ethylbenzene	00100-41-4	< 2.56E-08	1.45E-07	2.13E-07	1.17E-07	1.18E-07	2.43E-07	4.32E-06	1.11E-07	7.38E-08	< 8.74E-08	6.81E-08	5.74E-08	2.08E-07
Cumene	00098-82-8	< 2.58E-08	< 1.82E-08	< 3.58E-08	< 1.38E-08	< 1.13E-08	6.38E-08	8.31E-08	9.65E-08	3.17E-08	8.81E-07	< 1.37E-08	9.05E-08	9.86E-08
1,1-Dichloroethene	00075-35-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	5.47E-07	< 2.04E-07	< 4.60E-07	< 4.75E-07	1.00E-07	1.90E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloroform	00067-66-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Chloromethane	00074-87-3	< 4.64E-07	3.12E-08	< 2.57E-07	2.98E-08	< 2.04E-07	3.25E-07	< 4.75E-07	3.74E-08	3.17E-08	9.27E-08	< 9.87E-08	2.31E-08	6.43E-08
Trichloroethane	00079-01-6	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	2.22E-07
Chlorobenzene	00108-90-7	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1-Dichloroethane	00075-34-3	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,4-Dichlorobenzene	00106-46-7	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dichloropropane	00078-87-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dichloroethane	00107-06-2	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,2-Dibromoethane	00106-93-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1,2,2-Tetrachloroethane	00079-34-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1,2-Trichloroethane	00079-00-5	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Bromomethane	00074-83-9	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Vinyl Chloride	00075-01-4	< 4.64E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
Bromoform	00075-25-2	2.78E-07	< 1.31E-07	< 2.57E-07	< 9.95E-08	< 2.04E-07	< 4.60E-07	< 4.75E-07	< 1.07E-07	< 1.27E-07	< 4.88E-07	< 9.87E-08	< 8.41E-08	< 1.77E-07
1,1,1-Trichloroethane	00071-55-6	< 4.64E-07	8.03E-08	3.19E-07	4.23E-08	1.84E-07	< 4.60E-07	< 4.75E-07	2.67E-08	7.30E-08	1.34E-07	< 9.87E-08	2.94E-08	5.32E-08

TABLE 3-1A. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #1 lbs/lb rubber	Cmpd. #2 lbs/lb rubber	Cmpd. #3 lbs/lb rubber	Cmpd. #4 lbs/lb rubber	Cmpd. #5 lbs/lb rubber	Cmpd. #6 lbs/lb rubber	Cmpd. #7 lbs/lb rubber	Cmpd. #8 lbs/lb rubber	Cmpd. #9 lbs/lb rubber	Cmpd. #10 lbs/lb rubber	Cmpd. #11 lbs/lb rubber	Cmpd. #12 lbs/lb rubber	Cmpd. #13 lbs/lb rubber
Phenol	108-95-2	7.21E-08	4.90E-08	2.77E-07	1.47E-08	7.61E-07	4.43E-08	2.39E-08	3.19E-08	5.95E-08	1.21E-08	9.20E-09	2.72E-08	4.20E-08
Acetophenone	98-86-2	4.24E-08	2.13E-08	5.13E-08	3.75E-09	1.85E-08	7.67E-08	1.23E-07	1.29E-08	1.47E-06	8.46E-08	2.29E-07	3.45E-07	5.21E-08
1,3-Butadiene	00106-99-0	9.78E-08	< 1.84E-08	< 3.62E-08	2.17E-07	< 1.15E-08	< 6.46E-08	4.67E-07	1.13E-07	1.70E-07	< 6.86E-08	3.82E-07	8.57E-08	1.12E-07
Benzene	00071-43-2	5.46E-08	4.62E-08	1.13E-07	1.14E-07	2.98E-07	< 6.22E-08	9.13E-08	< 1.45E-08	4.90E-08	< 6.61E-08	< 1.34E-08	3.64E-08	6.61E-07
Aniline	62-53-3	< 5.71E-09	4.80E-07	< 1.30E-08	4.30E-07	< 5.33E-09	9.97E-08	< 8.91E-09	7.70E-09	5.13E-09	4.71E-09	2.39E-08	< 2.55E-09	< 3.56E-09
bis(2-Ethylhexyl)phthalate	117-81-7	3.91E-08	3.01E-08	1.19E-07	0.00E+00	2.29E-08	1.79E-07	3.34E-08	0.00E+00	7.07E-09	< 1.29E-09	2.69E-07	8.93E-09	7.40E-07
Hexachloroethane	67-72-1	< 1.29E-08	< 8.63E-09	< 2.43E-08	< 6.05E-09	< 1.21E-08	< 1.73E-08	< 2.00E-08	< 1.10E-08	< 9.76E-09	< 9.72E-09	< 7.79E-09	< 6.78E-09	< 8.52E-09
Isophorone	78-59-1	< 4.18E-09	6.63E-07	< 8.15E-09	5.93E-08	< 3.93E-09	< 5.48E-09	< 6.61E-09	< 3.17E-09	< 3.06E-09	< 3.27E-09	< 2.63E-09	< 2.11E-09	< 2.86E-09
Naphthalene	91-20-3	2.50E-08	3.33E-08	3.08E-07	1.73E-08	2.52E-07	5.11E-08	4.32E-08	2.72E-08	2.79E-08	8.18E-09	8.87E-09	3.02E-08	1.14E-08
Di-n-butylphthalate (3)	84-74-2	8.00E-08	1.61E-08	5.49E-08	0.00E+00	0.00E+00	1.50E-08	0.00E+00	7.47E-09	1.31E-09	1.47E-08	0.00E+00	5.94E-09	3.34E-07
2,4-Dinitrophenol	51-28-5	< 2.97E-08	< 2.88E-08	< 7.51E-08	< 2.82E-08	< 2.87E-08	< 4.83E-08	< 4.48E-08	< 2.94E-08	< 3.10E-08	< 2.95E-08	< 2.42E-08	< 2.15E-08	< 2.61E-08
4-Nitrophenol	100-02-7	< 2.50E-08	< 2.19E-08	< 5.85E-08	< 1.43E-08	< 2.41E-08	< 3.25E-08	< 3.77E-08	< 1.88E-08	< 1.97E-08	< 1.98E-08	< 1.63E-08	< 1.37E-08	< 1.75E-08
Pentachloronitrobenzene	82-68-8	< 2.56E-08	< 2.09E-08	< 4.50E-08	< 1.67E-08	< 2.35E-08	< 3.36E-08	< 3.92E-08	< 2.06E-08	< 2.20E-08	< 1.96E-08	< 1.58E-08	< 1.38E-08	< 1.69E-08
3/4-Methylphenol	108-39-4/106-44-5	1.01E-08	< 5.12E-09	2.37E-07	< 4.07E-09	1.11E-07	< 1.12E-08	< 1.24E-08	< 6.87E-09	< 6.13E-09	1.54E-09	< 5.07E-09	< 4.27E-09	< 5.55E-09
4,6-Dinitro-2-methylphenol	534-52-1	< 2.25E-08	< 1.33E-08	< 4.73E-08	< 2.14E-08	< 2.07E-08	< 2.63E-08	< 3.45E-08	< 1.54E-08	< 1.64E-08	< 1.53E-08	< 1.23E-08	< 1.03E-08	< 1.32E-08
Methylene bis-chloroaniline	101-14-4	< 3.10E-08	< 7.29E-09	< 9.88E-08	< 2.02E-08	< 3.31E-08	< 9.74E-09	< 5.83E-08	< 6.63E-09	< 7.94E-09	< 5.75E-09	< 5.73E-09	< 4.14E-09	< 6.95E-09
o-Toluidine	95-53-4	< 4.82E-09	< 3.65E-09	< 1.14E-08	< 3.13E-09	< 4.51E-09	2.23E-07	< 7.47E-09	< 4.84E-09	< 4.25E-09	< 4.61E-09	< 3.71E-09	8.24E-08	< 4.10E-09
3,3'-Dimethoxybenzidine	119-90-4	< 2.20E-08	< 6.01E-09	< 9.02E-08	< 1.57E-08	< 2.35E-08	< 7.13E-09	< 4.14E-08	< 4.72E-09	< 5.63E-09	< 4.17E-09	< 4.18E-09	< 2.95E-09	< 5.07E-09
Pentachlorophenol	87-86-5	< 1.86E-08	< 9.21E-09	< 3.66E-08	< 1.43E-08	< 1.71E-08	< 1.87E-08	< 2.85E-08	< 1.13E-08	< 1.21E-08	< 1.09E-08	< 8.82E-09	< 7.57E-09	4.53E-09
1,4-Phenylenediamine	106-50-3	< 1.59E-08	< 9.34E-09	< 3.67E-08	< 1.26E-08	< 1.46E-08	< 1.72E-08	< 2.47E-08	< 1.36E-08	< 1.33E-08	< 1.02E-08	< 8.31E-09	< 9.11E-09	< 8.89E-09
Trifluralin	1582-09-8	< 1.23E-08	< 1.24E-08	< 3.16E-08	< 9.49E-09	< 1.19E-08	< 2.03E-08	< 1.85E-08	< 1.28E-08	< 1.35E-08	< 1.24E-08	< 1.02E-08	< 9.38E-09	< 1.10E-08
3,3'-Dichlorobenzidine	91-94-1	< 2.07E-08	< 3.58E-09	< 7.11E-08	< 1.01E-08	< 2.21E-08	< 5.05E-09	< 3.89E-08	< 3.23E-09	< 3.88E-09	< 2.93E-09	< 2.96E-09	< 2.02E-09	< 3.56E-09
Hexachlorocyclopentadiene	77-47-4	< 9.38E-09	< 9.79E-09	< 2.39E-08	< 5.52E-09	< 9.08E-09	< 2.11E-08	< 1.42E-08	< 1.40E-08	< 1.47E-08	< 1.29E-08	< 1.06E-08	< 1.02E-08	< 1.14E-08
4,4'-Methylenedianiline	101-77-9	< 1.63E-08	< 4.48E-09	< 4.79E-08	< 1.12E-08	< 1.75E-08	< 6.00E-09	< 3.07E-08	< 3.82E-09	< 4.67E-09	< 3.52E-09	< 3.52E-09	< 2.42E-09	< 4.26E-09
n-Nitrosomorpholine	59-89-2	< 1.15E-08	< 7.61E-09	< 2.10E-08	< 7.30E-09	< 1.08E-08	< 1.69E-08	< 1.80E-08	< 1.00E-08	< 8.88E-09	< 9.47E-09	< 7.60E-09	< 6.21E-09	< 8.30E-09
2-Methylphenol	95-48-7	< 8.31E-09	< 5.50E-09	8.64E-08	8.34E-10	1.30E-08	6.00E-09	< 1.29E-08	< 7.35E-09	< 6.50E-09	< 6.55E-09	< 5.26E-09	< 4.53E-09	< 5.77E-09
n-Nitrosodimethylamine (3)	62-75-9	0.00E+00	< 7.93E-09	< 4.50E-08	0.00E+00	0.00E+00	< 1.92E-08	0.00E+00	< 1.09E-08	< 9.76E-09	< 1.08E-08	< 8.68E-09	< 6.78E-09	< 9.49E-09
2,4,6-Trichlorophenol	88-06-2	< 1.01E-08	< 7.42E-09	< 1.90E-08	< 5.63E-09	< 9.73E-09	< 1.40E-08	< 1.52E-08	< 7.82E-09	< 8.26E-09	< 8.53E-09	< 7.04E-09	< 5.72E-09	< 7.55E-09
Dimethylaminoazobenzene	60-11-7	< 1.45E-08	< 3.33E-09	< 2.87E-08	< 9.54E-09	< 1.54E-08	< 4.96E-09	< 2.72E-08	< 3.34E-09	< 3.94E-09	< 2.93E-09	< 2.91E-09	< 2.07E-09	< 3.56E-09
2,4,5-Trichlorophenol	95-95-4	< 1.00E-08	< 7.04E-09	< 1.92E-08	< 5.68E-09	< 9.67E-09	< 1.38E-08	< 1.50E-08	< 7.47E-09	< 7.88E-09	< 8.43E-09	< 6.95E-09	< 5.46E-09	< 7.44E-09
o-Anisidine	90-04-0	< 9.19E-09	< 6.01E-09	< 1.72E-08	< 6.15E-09	< 8.50E-09	< 1.25E-08	< 1.44E-08	< 7.35E-09	< 7.13E-09	< 7.44E-09	< 6.05E-09	< 4.89E-09	< 6.47E-09
2,4-Dinitrotoluene	121-14-2	< 9.45E-09	< 6.91E-09	< 1.92E-08	< 5.52E-09	< 9.14E-09	< 1.23E-08	< 1.43E-08	< 6.03E-09	< 6.32E-09	< 7.49E-09	< 6.15E-09	< 4.40E-09	< 6.63E-09
bis(2-Chloroethyl)ether	111-44-4	< 9.26E-09	< 5.24E-09	< 1.87E-08	< 5.00E-09	< 8.73E-09	< 1.18E-08	< 1.45E-08	< 7.05E-09	< 6.25E-09	< 6.65E-09	< 5.35E-09	< 4.36E-09	< 5.88E-09
Hexachlorobenzene	118-74-1	< 1.05E-08	< 6.59E-09	9.29E-09	< 5.11E-09	< 9.73E-09	< 1.16E-08	< 1.62E-08	< 7.05E-09	< 7.51E-09	< 6.75E-09	< 5.44E-09	< 4.71E-09	< 5.82E-09
Benzidine	92-87-5	< 1.12E-08	< 2.94E-09	< 2.75E-08	< 7.77E-09	< 1.20E-08	< 4.35E-09	< 2.11E-08	< 2.75E-09	< 3.25E-09	< 2.53E-09	< 2.53E-09	< 1.72E-09	< 3.07E-09
Nitrobenzene	98-95-3	< 7.80E-09	< 4.80E-09	< 1.40E-08	< 4.12E-09	< 7.21E-09	< 9.74E-09	< 1.23E-08	< 5.79E-09	< 5.63E-09	< 5.80E-09	2.02E-08	< 3.87E-09	< 5.07E-09
1,2,4-Trichlorobenzene	120-82-1	< 7.42E-09	< 4.60E-09	< 1.24E-08	< 3.65E-09	< 6.86E-09	< 9.57E-09	< 1.17E-08	< 5.61E-09	< 5.44E-09	< 5.70E-09	< 4.65E-09	< 3.74E-09	< 4.96E-09
4-Nitrobiphenyl	92-93-3	< 8.94E-09	< 4.73E-09	< 1.64E-08	< 6.62E-09	< 8.21E-09	< 7.22E-09	< 1.37E-08	< 4.42E-09	< 4.75E-09	< 4.22E-09	< 3.43E-09	< 2.95E-09	< 3.61E-09
Biphenyl	92-52-4	< 2.66E-09	< 2.30E-09	5.63E-08	5.42E-09	< 2.58E-09	1.17E-08	< 4.02E-09	< 2.45E-09	< 2.56E-09	< 2.78E-09	< 2.30E-09	< 1.80E-09	< 2.48E-09
3,3'-Dimethylbenzidine	119-93-7	< 8.62E-09	< 2.05E-09	< 2.70E-08	< 5.58E-09	< 9.26E-09	< 2.87E-09	< 1.63E-08	< 1.85E-09	< 2.19E-09	< 1.69E-09	< 1.69E-09	< 1.14E-09	< 2.05E-09
a,a,a-Trichlorotoluene	98-07-7	< 5.07E-09	< 3.77E-09	< 9.58E-09	< 3.13E-09	< 4.69E-09	< 7.83E-09	< 7.95E-09	< 4.54E-09	< 4.38E-09	< 4.61E-09	< 3.75E-09	< 3.04E-09	< 4.04E-09
N,N-Dimethylaniline	121-69-7	< 4.57E-09	< 3.39E-09	< 8.87E-09	< 2.92E-09	< 4.22E-09	< 6.96E-09	< 7.09E-09	< 4.06E-09	< 3.94E-09	< 4.12E-09	< 3.33E-09	< 2.68E-09	< 3.61E-09
Dibenzofuran	132-64-9	< 2.22E-09	2.11E-09	3.42E-08	1.41E-09	< 2.11E-09	3.31E-09	< 3.35E-09	< 1.91E-09	< 2.00E-09	< 2.13E-09	< 1.78E-09	< 1.36E-09	< 1.89E-09
Dimethylphthalate	131-11-3	< 2.85E-09	< 2.30E-09	1.57E-08	1.56E-09	< 2.75E-09	< 4.18E-09	< 4.31E-09	< 2.39E-09	< 2.56E-09	< 2.58E-09	< 2.11E-09	< 1.76E-09	< 2.26E-09
4-Aminobiphenyl	92-67-1	< 4.12E-09	< 2.37E-09	< 7.29E-09	< 2.92E-09	< 3.81E-09	< 3.83E-09	< 6.32E-09	< 2.21E-09	< 2.38E-09	< 2.23E-09	< 1.83E-09	< 1.50E-09	< 1.94E-09
Chromium		3.18E-08	6.99E-09	5.91E-08	2.38E-08	2.72E-08	4.26E-09	1.23E-07	4.41E-09	1.53E-09	1.56E-08	ND	6.44E-09	6.58E-09
Nickel		4.92E-08	< 2.79E-08	9.53E-08	4.09E-08	2.47E-08	< 4.26E-08	< 4.91E-08	3.38E-08	< 3.05E-08	2.40E-08	< 2.33E-08	2.15E-08	3.42E-08
Cadmium		9.35E-09	2.40E-09	7.01E-09	2.55E-09	5.05E-09	2.18E-09	3.89E-09	9.09E-10	1.12E-09	4.08E-09	1.27E-09	7.29E-10	5.94E-10
Lead		6.35E-09	3.24E-10	1.25E-08	3.42E-09	2.03E-08	ND	1.03E-08	ND	ND	8.16E-09	5.51E-10	ND	7.10E-09

(1) - Total HAPs include listed individual organic and metal HAP compounds.
(2) - Compounds detected only as tentatively identified compounds (TICs) in emissions from indicated rubber compounds. No applicable data for non-detects.
(3) - Blank correction caused a negative value. A "0" is reported for these cases, but is not included in the statistics summary.

TABLE 3-1A. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #14 lbs/lb rubber	Cmpd. #15 lbs/lb rubber	Cmpd. #16 lbs/lb rubber	Cmpd. #17 lbs/lb rubber	Cmpd. #18 lbs/lb rubber	Cmpd. #19 lbs/lb rubber	Cmpd. #20 lbs/lb rubber	Cmpd. #21 lbs/lb rubber	Cmpd. #22 lbs/lb rubber	Cmpd. #23 lbs/lb rubber	Mean lbs/lb rubber	Max. lbs/lb rubber	Std. Dev. lbs/lb rubber
TOTAL VOCs		2.30E-04	9.69E-06	8.18E-05	4.43E-04	6.46E-05	2.70E-05	8.22E-06	1.56E-04	1.23E-04	4.02E-05	1.06E-04	4.43E-04	1.08E-04
TOTAL SPECIATED ORGANICS		< 1.47E-04	< 6.32E-05	< 3.48E-05	< 3.20E-04	< 1.35E-04	< 2.40E-05	< 1.97E-05	< 1.40E-05	< 9.27E-05	< 6.19E-05	< 9.80E-05	< 3.20E-04	7.79E-05
TOTAL PARTICULATE MATTER (PM)		1.30E-04	1.42E-04	3.17E-04	8.96E-05	1.92E-04	6.89E-05	7.84E-04	7.50E-05	4.49E-04	3.39E-04	3.21E-04	9.25E-04	2.52E-04
TOTAL ORGANIC HAPS		< 4.58E-05	< 5.79E-05	< 8.40E-06	< 1.50E-04	< 5.64E-05	< 6.40E-06	< 1.15E-05	< 1.49E-05	< 3.36E-05	< 5.12E-05	< 4.75E-05	< 1.50E-04	3.64E-05
TOTAL METAL HAPs		< 3.98E-08	< 2.54E-08	< 1.80E-08	< 7.68E-08	< 5.66E-08	< 3.96E-08	< 3.41E-08	< 2.32E-08	< 3.70E-08	< 5.15E-08	< 5.74E-08	< 1.86E-07	4.24E-08
TOTAL HAPS (1)		< 4.59E-05	< 5.79E-05	< 8.42E-06	< 1.50E-04	< 5.65E-05	< 6.44E-06	< 1.15E-05	< 1.50E-05	< 3.36E-05	< 5.13E-05	< 4.76E-05	< 1.50E-04	3.64E-05
Individual HAPs:														
Carbon Disulfide	00075-15-0	4.26E-06	1.54E-07	4.50E-08	< 1.89E-07	3.54E-05	< 6.34E-08	2.60E-07	4.36E-08	9.56E-08	5.07E-07	< 1.01E-05	1.03E-04	2.32E-05
n-Hexane	00110-54-3	6.78E-07	7.88E-07	1.81E-06	1.13E-04	4.03E-07	2.37E-07	4.86E-07	2.53E-07	7.75E-07	6.22E-07	< 6.89E-06	1.13E-04	2.28E-05
Ethyl Acrylate (2)					4.73E-06							4.73E-06	4.73E-06	NA
Methylene Chloride	00075-09-2	1.68E-06	7.02E-07	5.00E-07	1.65E-05	8.68E-07	3.74E-07	1.03E-06	2.82E-07	1.01E-06	1.10E-06	3.58E-06	3.86E-05	8.28E-06
4-Methyl-2-Pentanone	00108-10-1	8.26E-07	4.90E-08	8.64E-08	1.65E-07	4.57E-06	< 6.34E-08	1.91E-07	2.76E-08	1.37E-05	< 4.61E-07	< 3.50E-06	3.06E-05	7.36E-06
Carbonyl sulfide	00463-58-1	1.13E-05	2.73E-06	< 1.05E-07	< 4.36E-07	< 2.29E-06	1.69E-07	1.56E-06	3.52E-07	< 1.34E-07	2.88E-06	< 2.43E-06	2.24E-05	4.94E-06
Carbon Tetrachloride	00056-23-5	< 1.03E-07	4.68E-05	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	2.36E-07	< 2.22E-06	4.68E-05	9.51E-06
Toluene	00108-88-3	1.55E-06	3.16E-07	1.75E-07	1.04E-06	6.88E-07	4.34E-07	4.75E-07	1.38E-07	2.47E-06	2.31E-05	2.14E-06	2.31E-05	4.53E-06
Hydroquinone	123-31-9	< 2.83E-08	< 6.39E-09	< 6.43E-09	< 1.48E-08	< 1.03E-08	< 6.76E-09	< 9.12E-09	< 6.03E-09	< 7.80E-09	< 7.74E-09	< 1.19E-08	2.62E-05	5.35E-06
2-Butanone	00078-93-3	3.10E-07	8.78E-08	3.95E-08	1.04E-06	1.26E-06	6.30E-08	1.30E-07	4.73E-07	4.37E-06	< 9.23E-07	1.16E-06	5.91E-06	1.40E-06
m,p-Xylenes	00108-38-3/00106-42-3	3.35E-07	3.07E-07	1.07E-07	4.76E-07	8.83E-07	1.01E-07	3.36E-07	1.42E-07	4.22E-07	1.18E-07	1.05E-06	1.44E-05	2.86E-06
Acrylonitrile	00107-13-1	1.17E-05	< 1.17E-07	< 1.68E-07	< 3.78E-07	8.00E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 9.43E-07	1.17E-05	2.32E-06
1,4-Dioxane	00123-91-1	< 4.13E-07	< 2.34E-07	< 3.35E-07	< 7.56E-07	< 7.31E-07	< 2.53E-07	< 4.37E-07	< 3.93E-07	< 4.37E-07	< 1.85E-06	< 8.05E-07	< 1.95E-06	5.95E-07
t-Butyl Methyl Ether	01634-04-4	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	7.98E-08	< 2.18E-07	< 9.23E-07	< 7.15E-07	7.98E-06	1.57E-06
Propylene Oxide	00075-56-9	6.97E-06	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 6.97E-07	6.97E-06	1.37E-06
Acetaldehyde (2)	00075-07-0		5.12E-07									< 6.04E-07	6.95E-07	9.18E-08
o-Xylene	00095-47-6	1.71E-07	8.07E-08	5.49E-08	5.09E-07	3.66E-07	4.61E-08	1.25E-07	1.59E-07	3.62E-07	< 1.59E-08	< 5.77E-07	7.73E-06	1.54E-06
Acrolein	00107-02-8	8.26E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	2.27E-07	3.00E-07	< 9.23E-07	< 4.50E-07	< 9.76E-07	3.08E-07
Tetrachloroethene	00127-18-4	1.42E-07	8.95E-07	< 8.38E-08	< 1.89E-07	7.66E-08	2.81E-08	7.59E-08	< 9.83E-08	1.91E-06	< 4.61E-07	< 4.27E-07	4.10E-06	8.75E-07
Acetonitrile	75-05-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	4.63E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.17E-07	< 9.76E-07	2.92E-07
Epichlorohydrin	00106-89-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Benzyl Chloride	00100-44-7	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Hexachlorobutadiene	00087-68-3	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Allyl Chloride	00107-05-1	< 2.06E-07	< 1.17E-07	< 1.68E-07	< 3.78E-07	< 3.66E-07	< 1.27E-07	< 2.19E-07	< 1.97E-07	< 2.18E-07	< 9.23E-07	< 4.03E-07	< 9.76E-07	2.97E-07
Styrene	00100-42-5	6.50E-08	< 7.92E-09	< 1.13E-08	< 1.28E-07	5.45E-08	< 8.58E-09	< 1.48E-08	6.32E-08	1.48E-06	< 1.56E-08	< 2.95E-07	4.25E-06	8.94E-07
Vinyl Acetate	00108-05-4	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.94E-07	2.35E-06	4.62E-07
Chloroethane	00075-00-3	< 1.03E-07	< 5.85E-08	1.70E-06	2.01E-07	< 1.83E-07	< 6.34E-08	4.24E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.86E-07	1.70E-06	3.38E-07
Ethylbenzene	00100-41-4	6.12E-08	4.84E-08	< 1.16E-08	< 1.30E-07	2.78E-07	3.24E-08	7.92E-08	< 1.36E-08	1.28E-07	< 1.59E-08	< 2.86E-07	4.32E-06	8.64E-07
Cumene	00098-82-8	< 1.43E-08	< 8.12E-09	< 1.16E-08	< 1.31E-07	1.21E-07	1.06E-08	< 1.52E-08	2.80E-08	5.61E-08	< 1.60E-08	< 2.64E-07	3.17E-06	6.74E-07
1,1-Dichloroethene	00075-35-4	2.19E-07	1.39E-08	< 8.38E-08	< 1.89E-07	8.60E-08	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.22E-07	5.47E-07	1.64E-07
Chloroform	00067-66-3	2.45E-08	6.51E-07	1.23E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	1.72E-08	< 1.09E-07	< 4.61E-07	< 2.17E-07	6.51E-07	1.81E-07
Chloromethane	00074-87-3	3.61E-08	1.02E-07	1.44E-08	8.86E-07	< 1.83E-07	1.48E-07	3.35E-07	3.93E-07	3.82E-08	< 4.61E-07	< 2.06E-07	8.86E-07	2.13E-07
Trichloroethene	00079-01-6	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.03E-07	< 4.88E-07	1.49E-07
Chlorobenzene	00108-90-7	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,1-Dichloroethane	00075-34-3	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,4-Dichlorobenzene	00106-46-7	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dichloropropane	00078-87-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dichloroethane	00107-06-2	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,2-Dibromoethane	00106-93-4	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,1,2,2-Tetrachloroethane	00079-34-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
1,1,2-Trichloroethane	00079-00-5	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
Bromomethane	00074-83-9	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	5.62E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 2.01E-07	< 4.88E-07	1.49E-07
Vinyl Chloride	00075-01-4	< 1.03E-07	1.32E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 1.99E-07	< 4.88E-07	1.51E-07
Bromoform	00075-25-2	< 1.03E-07	< 5.85E-08	< 8.38E-08	< 1.89E-07	< 1.83E-07	< 6.34E-08	< 1.09E-07	< 9.83E-08	< 1.09E-07	< 4.61E-07	< 1.93E-07	< 4.88E-07	1.39E-07
1,1,1-Trichloroethane	00071-55-6	3.61E-08	1.83E-08	1.75E-08	6.03E-08	< 1.83E-07	1.14E-07	7.31E-07	1.04E-08	6.55E-08	< 4.61E-07	< 1.80E-07	7.31E-07	1.97E-07

TABLE 3-1A. INTERNAL MIXER EMISSION FACTOR SUMMARY
(HAPs Listed In Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #14 lbs/lb rubber	Cmpd. #15 lbs/lb rubber	Cmpd. #16 lbs/lb rubber	Cmpd. #17 lbs/lb rubber	Cmpd. #18 lbs/lb rubber	Cmpd. #19 lbs/lb rubber	Cmpd. #20 lbs/lb rubber	Cmpd. #21 lbs/lb rubber	Cmpd. #22 lbs/lb rubber	Cmpd. #23 lbs/lb rubber	Mean lbs/lb rubber	Max. lbs/lb rubber	Std. Dev. lbs/lb rubber
Phenol	108-95-2	5.33E-08	2.69E-08	4.56E-08	1.27E-06	5.63E-08	< 3.79E-09	1.84E-08	9.35E-09	6.87E-07	1.25E-08	< 1.57E-07	1.27E-06	3.09E-07
Acetophenone	98-86-2	1.70E-08	1.10E-08	1.11E-08	1.45E-08	5.72E-08	2.48E-08	1.61E-07	1.76E-08	2.92E-08	9.02E-09	1.25E-07	1.47E-06	2.98E-07
1,3-Butadiene	00106-99-0	2.39E-07	6.17E-08	< 1.18E-08	< 1.33E-07	1.80E-07	5.79E-08	< 1.54E-08	< 1.38E-08	1.31E-07	1.43E-07	< 1.23E-07	4.67E-07	1.14E-07
Benzene	00071-43-2	5.24E-07	1.74E-08	2.61E-08	< 1.28E-07	3.77E-08	1.42E-07	5.92E-08	< 1.33E-08	8.87E-08	< 1.56E-08	< 1.16E-07	6.61E-07	1.60E-07
Aniline	62-53-3	< 3.06E-09	< 2.92E-09	< 2.45E-09	5.13E-07	1.66E-07	< 3.10E-09	7.20E-09	< 3.36E-09	4.68E-07	2.23E-07	< 1.08E-07	5.13E-07	1.77E-07
bis(2-Ethylhexyl)phthalate	117-81-7	0.00E+00	4.60E-08	3.54E-08	2.40E-09	2.20E-08	1.31E-08	4.53E-08	1.31E-07	8.41E-09	6.74E-07	1.06E-07	7.40E-07	1.97E-07
Hexachloroethane	67-72-1	< 8.59E-09	1.23E-06	< 6.43E-09	< 1.87E-08	< 1.11E-08	< 7.46E-09	< 1.05E-08	< 8.13E-09	< 7.42E-09	6.08E-09	< 6.39E-08	1.23E-06	2.49E-07
Isophorone	78-59-1	< 8.24E-09	< 1.64E-09	< 2.04E-09	< 7.03E-09	< 3.29E-09	< 2.70E-09	< 3.50E-09	3.93E-09	3.37E-07	< 2.26E-09	< 4.95E-08	6.63E-07	1.48E-07
Naphthalene	91-20-3	< 5.18E-09	2.78E-08	1.13E-08	4.01E-08	3.30E-08	1.23E-08	1.71E-08	1.25E-08	5.52E-08	3.18E-08	< 4.74E-08	3.08E-07	7.35E-08
Di-n-butylphthalate (3)	84-74-2	8.95E-09	0.00E+00	3.68E-09	0.00E+00	8.27E-08	2.91E-08	2.17E-08	2.86E-07	3.57E-08	8.78E-08	< 4.72E-08	3.34E-07	8.58E-08
2,4-Dinitrophenol	51-28-5	< 2.50E-08	< 2.07E-08	< 1.86E-08	< 1.01E-07	< 3.17E-08	1.62E-08	< 3.12E-08	< 1.95E-08	< 2.51E-08	< 2.37E-08	< 3.30E-08	< 1.01E-07	1.88E-08
4-Nitrophenol	100-02-7	< 1.90E-08	< 1.05E-08	< 1.18E-08	< 3.91E-08	< 2.01E-08	9.90E-09	< 2.44E-08	< 1.31E-08	< 1.90E-08	< 1.80E-08	< 2.19E-08	< 5.85E-08	1.08E-08
Pentachloronitrobenzene	82-68-8	< 1.53E-08	< 1.18E-08	< 1.35E-08	< 3.63E-08	< 2.23E-08	< 1.96E-08	< 2.01E-08	< 1.18E-08	< 1.80E-08	< 1.68E-08	< 2.17E-08	< 4.50E-08	8.65E-09
3/4-Methylphenol	108-39-4/106-44-5	< 5.12E-09	< 3.00E-09	< 4.05E-09	< 1.23E-08	< 6.97E-09	< 4.84E-09	< 6.69E-09	< 5.24E-09	< 4.42E-09	< 4.51E-09	< 2.08E-08	2.37E-07	5.09E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 9.77E-09	< 1.51E-08	< 1.01E-08	< 7.21E-08	< 1.66E-08	< 1.53E-08	< 2.10E-08	< 9.17E-09	< 1.15E-08	< 1.07E-08	< 2.00E-08	< 7.21E-08	1.41E-08
Methylene bis-chloroaniline	101-14-4	< 5.89E-09	< 1.55E-08	< 4.87E-09	< 5.41E-08	< 6.58E-09	< 6.98E-09	< 4.70E-08	< 5.68E-09	< 6.44E-09	< 6.15E-09	< 1.98E-08	< 9.88E-08	2.35E-08
o-Toluidine	95-53-4	< 3.65E-09	< 2.34E-09	< 2.82E-09	< 6.09E-09	< 4.90E-09	< 3.58E-09	< 4.92E-09	< 3.89E-09	< 3.11E-09	< 3.18E-09	< 1.74E-08	2.23E-07	4.87E-08
3,3'-Dimethoxybenzidine	119-90-4	< 4.89E-09	< 1.21E-08	< 3.46E-09	< 3.84E-08	< 4.71E-09	< 5.06E-09	< 4.29E-08	< 4.11E-09	< 5.29E-09	< 5.09E-09	< 1.56E-08	< 9.02E-08	2.02E-08
Pentachlorophenol	87-86-5	< 6.77E-09	< 1.02E-08	< 7.43E-09	< 4.36E-08	< 1.22E-08	1.25E-08	< 1.63E-08	< 6.51E-09	< 7.91E-09	< 7.43E-09	< 1.43E-08	< 4.36E-08	9.58E-09
1,4-Phenylenediamine	106-50-3	< 2.88E-08	< 8.85E-09	< 8.81E-09	< 2.19E-08	< 1.42E-08	< 8.50E-09	< 1.58E-08	< 7.56E-09	< 7.97E-09	< 7.92E-09	< 1.41E-08	< 3.67E-08	7.37E-09
Trifluralin	1582-09-8	< 1.08E-08	< 6.98E-09	< 8.10E-09	< 1.73E-08	< 1.38E-08	< 1.07E-08	< 1.31E-08	< 8.21E-09	< 1.08E-08	< 1.02E-08	< 1.29E-08	< 3.16E-08	5.08E-09
3,3'-Dichlorobenzidine	91-94-1	< 2.88E-09	< 7.72E-09	< 2.38E-09	< 2.55E-08	< 3.23E-09	< 3.58E-09	< 3.39E-08	< 2.93E-09	< 3.17E-09	< 3.05E-09	< 1.21E-08	< 7.11E-08	1.65E-08
Hexachlorocyclopentadiene	77-47-4	< 8.48E-09	< 4.05E-09	< 8.81E-09	< 1.64E-08	< 1.50E-08	< 1.11E-08	< 9.93E-09	< 8.52E-09	< 8.51E-09	< 8.00E-09	< 1.16E-08	2.39E-08	4.49E-09
4,4'-Methylenedianiline	101-77-9	< 3.59E-09	< 8.58E-09	< 2.82E-09	< 2.85E-08	< 3.81E-09	< 4.27E-09	< 2.28E-08	< 3.45E-09	< 3.93E-09	< 3.76E-09	< 1.05E-08	< 4.79E-08	1.15E-08
n-Nitrosomorpholine	59-89-2	< 7.59E-09	< 5.42E-09	< 5.87E-09	< 1.46E-08	< 1.01E-08	< 7.28E-09	< 9.07E-09	< 7.91E-09	< 6.55E-09	< 6.72E-09	< 9.78E-09	< 2.10E-08	4.03E-09
2-Methylphenol	95-48-7	< 5.47E-09	< 3.20E-09	< 4.31E-09	< 1.30E-08	< 7.42E-09	< 5.06E-09	1.01E-09	< 5.50E-09	< 4.69E-09	< 4.82E-09	< 9.71E-09	8.64E-08	1.66E-08
n-Nitrosodimethylamine (3)	62-75-9	< 7.89E-09	0.00E+00	< 6.43E-09	0.00E+00	< 1.11E-08	< 8.33E-09	< 1.94E-08	< 9.04E-09	< 6.82E-09	< 6.94E-09	< 8.90E-09	< 4.50E-08	9.40E-09
2,4,6-Trichlorophenol	88-06-2	< 6.42E-09	< 4.13E-09	< 4.94E-09	< 1.76E-08	< 8.45E-09	< 7.37E-09	< 7.91E-09	< 5.64E-09	< 6.44E-09	< 6.10E-09	< 8.74E-09	< 1.90E-08	3.90E-09
Dimethylaminoazobenzene	60-11-7	< 2.71E-09	1.64E-08	< 2.42E-09	< 2.52E-08	< 3.29E-09	< 3.58E-09	< 1.37E-08	< 2.88E-09	< 2.95E-09	< 2.83E-09	< 8.62E-09	< 2.87E-08	8.45E-09
2,4,5-Trichlorophenol	95-95-4	< 6.12E-09	< 4.17E-09	< 4.72E-09	< 1.72E-08	< 8.07E-09	< 7.28E-09	< 8.01E-09	< 5.59E-09	< 6.11E-09	< 5.75E-09	< 8.57E-09	< 1.92E-08	3.91E-09
o-Anisidine	90-04-0	< 1.86E-08	< 4.33E-09	< 4.76E-09	< 1.27E-08	< 7.61E-09	< 6.19E-09	< 7.35E-09	< 5.50E-09	< 5.13E-09	< 5.09E-09	< 8.28E-09	< 1.86E-08	3.92E-09
2,4-Dinitrotoluene	121-14-2	< 6.00E-09	< 4.05E-09	< 3.79E-09	< 1.68E-08	< 6.45E-09	< 6.45E-09	< 8.01E-09	< 4.94E-09	< 6.00E-09	< 5.68E-09	< 7.91E-09	< 1.92E-08	3.93E-09
bis(2-Chloroethyl)ether	111-44-4	< 5.24E-09	< 3.74E-09	< 4.12E-09	< 1.50E-08	< 7.10E-09	< 5.14E-09	< 8.11E-09	< 5.55E-09	< 4.53E-09	< 4.64E-09	< 7.48E-09	< 1.87E-08	3.88E-09
Hexachlorobenzene	118-74-1	< 4.83E-09	< 3.63E-09	< 4.61E-09	< 1.56E-08	< 7.61E-09	< 6.71E-09	< 7.40E-09	< 4.02E-09	< 5.68E-09	< 5.35E-09	< 7.47E-09	< 1.62E-08	3.29E-09
Benzidine	92-87-5	< 2.35E-09	1.80E-08	< 2.01E-09	< 1.95E-08	< 2.71E-09	< 3.10E-09	< 1.31E-08	< 2.53E-09	< 2.57E-09	< 2.48E-09	< 7.43E-09	< 2.75E-08	7.37E-09
Nitrobenzene	98-95-3	< 1.48E-08	< 2.92E-09	< 3.75E-09	< 1.29E-08	< 6.07E-09	< 4.80E-09	< 6.03E-09	< 4.28E-09	< 4.09E-09	< 4.07E-09	< 7.39E-09	2.02E-08	4.38E-09
1,2,4-Trichlorobenzene	120-82-1	< 1.41E-08	< 2.57E-09	< 3.64E-09	< 1.20E-08	< 5.87E-09	< 4.75E-09	< 5.32E-09	< 4.19E-09	< 3.88E-09	< 3.85E-09	< 6.37E-09	< 1.41E-08	3.20E-09
4-Nitrobiphenyl	92-93-3	< 3.47E-09	< 4.68E-09	< 2.90E-09	< 1.27E-08	< 4.78E-09	< 4.23E-09	< 7.30E-09	< 2.53E-09	< 4.04E-09	< 3.80E-09	< 6.07E-09	< 1.64E-08	3.63E-09
Biphenyl	92-52-4	1.24E-09	< 1.48E-09	< 1.56E-09	< 3.75E-09	< 2.65E-09	< 2.40E-09	< 2.64E-09	< 1.83E-09	9.77E-09	< 1.90E-09	< 5.59E-09	5.63E-08	1.11E-08
3,3'-Dimethylbenzidine	119-93-7	< 1.65E-09	< 4.29E-09	< 1.34E-09	< 1.51E-08	< 1.81E-09	< 2.09E-09	< 1.29E-08	< 1.66E-09	< 1.80E-09	< 1.72E-09	< 5.50E-09	< 2.70E-08	6.44E-09
a,a,a-Trichlorotoluene	98-07-7	< 1.17E-08	< 2.18E-09	< 2.94E-09	< 6.97E-09	< 4.71E-09	< 3.84E-09	< 4.10E-09	< 3.41E-09	< 3.22E-09	< 3.18E-09	< 4.90E-09	< 1.17E-08	2.30E-09
N,N-Dimethylaniline	121-69-7	< 1.04E-08	< 2.07E-09	< 2.60E-09	< 6.27E-09	< 4.19E-09	< 3.40E-09	< 3.80E-09	< 3.06E-09	< 2.89E-09	< 2.83E-09	< 4.40E-09	< 1.04E-08	2.06E-09
Dibenzofuran	132-64-9	2.41E-09	7.41E-10	< 1.19E-09	< 3.81E-09	< 2.06E-09	< 1.83E-09	9.63E-10	3.06E-10	< 1.64E-09	5.31E-10	< 3.27E-09	3.42E-08	6.64E-09
Dimethylphthalate	131-11-3	3.00E-09	2.18E-09	3.12E-09	< 4.75E-09	< 2.58E-09	< 2.22E-09	< 2.64E-09	< 1.70E-09	< 1.96E-09	< 1.86E-09	< 3.19E-09	1.57E-08	2.79E-09
4-Aminobiphenyl	92-67-1	< 1.71E-09	< 2.07E-09	< 1.45E-09	< 5.86E-09	< 2.39E-09	< 2.27E-09	< 3.24E-09	< 1.35E-09	< 2.02E-09	< 1.90E-09	< 2.91E-09	< 7.29E-09	1.58E-09
Chromium		4.05E-09	1.96E-09	8.29E-10	4.20E-08	< 1.62E-08	< 1.06E-08	9.37E-09	1.08E-09	3.81E-09	2.11E-08	< 1.83E-08	1.23E-07	2.68E-08
Nickel		< 2.70E-08	2.16E-08	< 1.66E-08	3.21E-08	3.89E-08	2.65E-08	< 2.34E-08	< 2.15E-08	< 2.54E-08	2.91E-08	< 3.30E-08	9.53E-08	1.59E-08
Cadmium		3.38E-09	1.66E-09	6.09E-10	2.65E-09	1.47E-09	6.06E-10	1.35E-09	6.27E-10	2.79E-09	1.04E-09	< 2.49E-09	9.35E-09	2.16E-09
Lead		5.39E-09	2.27E-10	ND	ND	ND	1.86E-09	ND	ND	4.97E-09	2.73E-10	< 3.55E-09	2.03E-08	5.15E-09

(1) - Total HAPs include listed individual HAP compounds.
(2) - Compounds detected only as tentatively identified compounds (TICs) in emissions from indicated rubber compounds. No applicable data for non-detects.
(3) - Blank correction caused a negative value. A "0" is reported for these cases, but is not included in the statistics summary.

Table 3-2. WARMUP MILL EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb-rubber	Cmpd. 3 lb/lb-rubber	Cmpd. 4 lb/lb-rubber	Cmpd. 12 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		1.10E-04	1.12E-04	8.40E-05	1.71E-06	7.69E-05	1.12E-04	4.48E-05
TOTAL SPECIATED ORGANICS		< 3.47E-05	< 4.39E-05	< 5.08E-05	< 9.61E-07	< 3.26E-05	< 5.08E-05	1.91E-05
TOTAL ORGANIC HAPs		**< 9.04E-06**	**< 2.31E-05**	**< 1.75E-05**	**< 1.49E-07**	**< 1.24E-05**	**< 2.31E-05**	**8.68E-06**
Individual HAPs:								
1,1,1-Trichloroethane	00071-55-6	3.32E-08	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 4.33E-08	< 7.04E-08	2.72E-08
1,2-Dibromo-3-chloropropane	96-12-8	< 9.32E-09	< 2.89E-08	< 8.82E-09	< 7.68E-11	< 1.18E-08	< 2.89E-08	1.05E-08
1,2,4-Trichlorobenzene	120-82-1	< 5.25E-09	< 1.39E-08	< 4.33E-09	< 4.19E-11	< 5.89E-09	< 1.39E-08	5.04E-09
1,3-Butadiene	106-99-0	< 2.08E-08	< 9.90E-09	< 9.33E-09	< 9.74E-11	< 1.00E-08	< 2.08E-08	7.32E-09
1,4-Dichlorobenzene	106-46-7	< 4.07E-09	< 1.26E-08	< 3.84E-09	< 3.40E-11	< 5.13E-09	< 1.26E-08	4.59E-09
2-Butanone	00078-93-3	8.12E-07	7.61E-08	4.06E-07	< 6.93E-09	< 3.25E-07	8.12E-07	3.19E-07
2-Methylphenol	95-48-7	1.99E-08	< 1.87E-08	< 5.73E-09	2.31E-11	< 1.11E-08	1.99E-08	8.48E-09
2,4-Dinitrophenol	105-67-9	< 3.06E-08	< 5.81E-08	< 2.01E-08	< 2.64E-10	< 2.73E-08	< 5.81E-08	2.09E-08
2,4-Dinitrotoluene	121-14-2	< 7.74E-09	< 1.47E-08	< 5.08E-09	< 6.55E-11	< 6.89E-09	< 1.47E-08	5.27E-09
2,4,5-Trichlorophenol	95-95-4	< 8.76E-09	< 1.66E-08	< 5.73E-09	< 6.26E-11	< 7.79E-09	< 1.66E-08	5.97E-09
2,4,6-Trichlorophenol	88-06-2	< 8.87E-09	< 1.68E-08	< 5.83E-09	< 6.58E-11	< 7.88E-09	< 1.68E-08	6.02E-09
3,3'-Dimethoxybenzidine	119-90-4	< 3.79E-09	< 1.08E-08	< 3.29E-09	< 7.37E-11	< 4.48E-09	< 1.08E-08	3.90E-09
3,3'-Dimethylbenzidine	119-93-7	< 1.58E-09	< 4.49E-09	< 1.35E-09	< 2.43E-11	< 1.86E-09	< 4.49E-09	1.63E-09
3/4-Methylphenol	108-39-4/106-44-5	5.58E-08	< 1.80E-08	1.13E-08	< 3.40E-11	< 2.13E-08	< 5.58E-08	2.09E-08
4-Aminobiphenyl	92-67-1	< 2.49E-09	< 4.34E-09	< 1.54E-09	< 7.77E-11	< 2.11E-09	< 4.34E-09	1.55E-09
4-Methyl-2-Pentanone	00108-10-1	1.57E-07	1.14E-06	9.12E-06	< 3.46E-09	< 2.61E-06	9.12E-06	3.79E-06
4-Nitrobiphenyl	92-93-3	< 4.69E-09	< 8.08E-09	< 2.84E-09	< 4.32E-11	< 3.91E-09	< 8.08E-09	2.92E-09
4-Nitrophenol	100-02-7	< 2.05E-08	< 3.89E-08	< 1.35E-08	< 2.00E-10	< 1.83E-08	< 3.89E-08	1.40E-08
4,4'-Methylenedianiline	101-77-9	< 3.22E-09	< 9.13E-09	< 2.74E-09	< 5.31E-11	< 3.79E-09	< 9.13E-09	3.31E-09
Acetonitrile	01722-09-4	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Acetophenone	98-86-2	< 5.08E-09	2.80E-07	2.84E-08	3.06E-10	< 7.83E-08	2.80E-07	1.17E-07
Acrolein	107-02-8	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Acrylonitrile	00107-13-1	1.29E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.02E-07	< 1.41E-07	5.53E-08
Allyl Chloride	00107-05-1	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Aniline	62-53-3	7.50E-08	5.32E-06	3.48E-06	< 2.37E-10	< 2.22E-06	5.32E-06	2.28E-06
Benzene	71-43-2	5.99E-08	1.76E-08	5.39E-08	3.47E-10	3.29E-08	5.99E-08	2.48E-08
Benzidine	92-87-5	< 2.32E-09	< 6.58E-09	< 1.99E-09	< 3.19E-11	< 2.73E-09	< 6.58E-09	2.39E-09
Benzyl Chloride	100-44-7	< 3.22E-09	< 9.88E-09	< 3.04E-09	< 6.93E-09	< 5.77E-09	< 9.88E-09	2.84E-09
Biphenyl	92-52-4	3.55E-08	3.65E-08	4.16E-08	9.50E-11	2.84E-08	4.16E-08	1.65E-08
bis(2-Ethylhexyl)phthalate	117-81-7	3.25E-08	8.63E-07	1.09E-07	1.41E-09	2.51E-07	8.63E-07	3.55E-07
Bromoform	00075-25-2	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Carbon Disulfide	00075-15-0	5.90E-07	9.67E-08	2.49E-07	1.76E-07	2.78E-07	5.90E-07	1.88E-07
Carbon Tetrachloride	00056-23-5	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Carbonyl Sulfide	463-58-1	8.38E-07	< 4.31E-07	< 2.40E-07	< 8.49E-10	< 3.77E-07	8.38E-07	3.06E-07
Chlorobenzene	00108-90-7	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Chloroform	00067-66-3	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Cumene	98-82-8	< 2.37E-09	1.47E-08	1.44E-09	2.48E-11	< 4.63E-09	1.47E-08	5.85E-09
Dibenzofuran	132-64-9	1.73E-08	< 4.19E-09	1.06E-08	< 3.53E-11	< 8.02E-09	1.73E-08	6.53E-09
Dimethylphthalate	131-11-3	< 2.66E-09	7.21E-08	< 1.74E-09	< 2.08E-11	< 1.91E-08	7.21E-08	3.06E-08
Di-n-butylphthalate	84-74-2	2.49E-09	1.37E-07	1.70E-07	2.22E-10	7.74E-08	1.70E-07	7.70E-08
Epichlorohydrin	00106-89-8	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Ethylbenzene	100-41-4	1.12E-07	< 9.71E-09	7.78E-08	2.61E-10	< 5.00E-08	1.12E-07	4.67E-08
Hexachlorobenzene	118-74-1	< 7.46E-09	< 1.29E-08	< 4.58E-09	< 5.71E-11	< 6.24E-09	< 1.29E-08	4.65E-09
Hexachlorobutadiene	87-68-3	< 8.36E-09	< 2.20E-08	< 6.88E-09	< 7.14E-11	< 9.33E-09	< 2.20E-08	7.95E-09
Hexachlorocyclopentadiene	77-47-4	< 1.34E-08	< 2.54E-08	< 8.82E-09	< 8.55E-11	< 1.19E-08	< 2.54E-08	9.15E-09
Hexachloroethane	67-72-1	< 8.93E-09	< 2.77E-08	< 8.42E-09	< 8.03E-11	< 1.13E-08	< 2.77E-08	1.01E-08
Hydroquinone	123-31-9	< 7.51E-09	< 1.98E-08	< 6.18E-09	< 8.20E-11	< 8.38E-09	< 1.98E-08	7.14E-09
Isophorone	78-59-1	6.50E-09	1.12E-05	3.07E-07	< 2.43E-11	< 2.88E-06	1.12E-05	4.81E-06
Methylene Chloride	00075-09-2	1.01E-06	4.13E-07	6.80E-07	< 6.03E-08	< 5.42E-07	1.01E-06	3.50E-07
m-Xylene + p-Xylene	108-38-3/106-42-3	6.11E-07	3.50E-08	2.56E-07	1.14E-09	2.26E-07	6.11E-07	2.43E-07
Naphthalene	91-20-3	1.30E-07	3.73E-07	1.66E-07	2.87E-10	1.67E-07	3.73E-07	1.34E-07

Table 3-2. WARMUP MILL EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb-rubber	Cmpd. 3 lb/lb-rubber	Cmpd. 4 lb/lb-rubber	Cmpd. 12 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
n-Hexane	110-54-3	7.16E-07	1.21E-07	2.48E-07	2.94E-08	2.79E-07	7.16E-07	2.64E-07
Nitrobenzene	98-95-3	< 5.37E-09	< 1.41E-08	< 4.38E-09	< 4.35E-11	< 5.97E-09	< 1.41E-08	5.09E-09
n-Nitrosodimethylamine	62-75-9	< 9.94E-09	< 3.08E-08	< 9.42E-09	< 7.20E-11	< 1.26E-08	< 3.08E-08	1.12E-08
n-Nitrosomorpholine	59-89-2	< 8.70E-09	< 2.69E-08	< 8.22E-09	< 7.18E-11	< 1.10E-08	< 2.69E-08	9.83E-09
o-Anisidine	90-04-0	< 6.89E-09	< 1.81E-08	< 5.68E-09	< 5.59E-11	< 7.68E-09	< 1.81E-08	6.55E-09
o-Toluidine	95-53-4	< 4.29E-09	< 1.32E-08	< 4.04E-09	< 3.41E-11	< 5.38E-09	< 1.32E-08	4.80E-09
o-Xylene	95-47-6	3.46E-07	< 9.71E-09	1.37E-07	< 1.89E-10	< 1.23E-07	3.46E-07	1.40E-07
Pentachloronitrobenzene	82-68-8	< 2.17E-08	< 3.74E-08	< 1.33E-08	< 1.88E-10	< 1.81E-08	< 3.74E-08	1.35E-08
Pentachlorophenol	87-86-5	< 1.21E-08	< 2.08E-08	< 7.37E-09	< 7.82E-11	< 1.01E-08	< 2.08E-08	7.52E-09
Phenol	108-95-2	4.65E-08	< 1.41E-08	< 4.28E-09	6.99E-10	< 1.64E-08	4.65E-08	1.81E-08
Propylene Oxide	00075-56-9	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Styrene	100-42-5	1.55E-07	< 9.53E-09	< 8.98E-09	< 9.38E-11	< 4.34E-08	1.55E-07	6.45E-08
Tetrachloroethene	00127-18-4	8.39E-08	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 5.60E-08	8.39E-08	3.10E-08
Toluene	108-88-3	3.28E-07	3.71E-07	1.95E-07	3.86E-08	2.33E-07	3.71E-07	1.30E-07
Trifluralin	1582-09-8	< 1.28E-08	< 2.44E-08	< 8.47E-09	< 1.18E-10	< 1.15E-08	< 2.44E-08	8.76E-09
Vinyl Acetate	00108-05-4	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Vinyl Chloride	00075-01-4	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08

Compounds 2, 3, and 4 were conducted on Warmup Mill No. 2. A single test run was conducted on each compound.
Compound 12 was conducted on Warmup Mill No. 1. Data are averages of three test runs.

Table 3-2A. WARMUP MILL EMISSION FACTOR SUMMARY
(HAPs Listed In Descending Order by Means)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb-rubber	Cmpd. 3 lb/lb-rubber	Cmpd. 4 lb/lb-rubber	Cmpd. 12 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		1.10E-04	1.12E-04	8.40E-05	1.71E-06	7.69E-05	1.12E-04	4.48E-05
TOTAL SPECIATED ORGANICS		< 3.47E-05	< 4.39E-05	< 5.08E-05	< 9.61E-07	< 3.26E-05	< 5.08E-05	1.91E-05
TOTAL ORGANIC HAPs		**< 9.04E-06**	**< 2.31E-05**	**< 1.75E-05**	**< 8.37E-09**	**< 1.24E-05**	**< 2.31E-05**	**8.73E-06**
Individual HAPs:								
Isophorone	78-59-1	6.50E-09	1.12E-05	3.07E-07	< 2.43E-11	< 2.88E-06	1.12E-05	4.81E-06
4-Methyl-2-Pentanone	00108-10-1	1.57E-07	1.14E-06	9.12E-06	< 3.46E-09	< 2.61E-06	9.12E-06	3.79E-06
Aniline	62-53-3	7.50E-08	5.32E-06	3.48E-06	< 2.37E-10	< 2.22E-06	5.32E-06	2.28E-06
Methylene Chloride	00075-09-2	1.01E-06	4.13E-07	6.80E-07	< 6.03E-08	< 5.42E-07	1.01E-06	3.50E-07
Carbonyl Sulfide	463-58-1	8.38E-07	< 4.31E-07	< 2.40E-07	< 8.49E-10	< 3.77E-07	8.38E-07	3.06E-07
2-Butanone	00078-93-3	8.12E-07	7.61E-08	4.06E-07	< 6.93E-09	< 3.25E-07	8.12E-07	3.19E-07
n-Hexane	110-54-3	7.16E-07	1.21E-07	2.48E-07	2.94E-08	2.79E-07	7.16E-07	2.64E-07
Carbon Disulfide	00075-15-0	5.90E-07	9.67E-08	2.49E-07	1.76E-07	2.78E-07	5.90E-07	1.88E-07
bis(2-Ethylhexyl)phthalate	117-81-7	3.25E-08	8.63E-07	1.09E-07	1.41E-09	2.51E-07	8.63E-07	3.55E-07
Toluene	108-88-3	3.28E-07	3.71E-07	1.95E-07	3.86E-08	2.33E-07	3.71E-07	1.30E-07
m-Xylene + p-Xylene	108-38-3/106-42-3	6.11E-07	3.50E-08	2.56E-07	1.14E-09	2.26E-07	6.11E-07	2.43E-07
Naphthalene	91-20-3	1.30E-07	3.73E-07	1.66E-07	2.87E-10	1.67E-07	3.73E-07	1.34E-07
Acrolein	107-02-8	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Allyl Chloride	00107-05-1	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Acetonitrile	01722-09-4	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Epichlorohydrin	00106-89-8	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
Propylene Oxide	00075-56-9	< 2.95E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.44E-07	< 2.95E-07	1.02E-07
o-Xylene	95-47-6	3.46E-07	< 9.71E-09	1.37E-07	< 1.89E-10	< 1.23E-07	3.46E-07	1.40E-07
Acrylonitrile	00107-13-1	1.29E-07	< 1.41E-07	< 1.33E-07	< 6.93E-09	< 1.02E-07	< 1.41E-07	5.53E-08
Acetophenone	98-86-2	< 5.08E-09	2.80E-07	2.84E-08	3.06E-10	< 7.83E-08	2.80E-07	1.17E-07
Di-n-butylphthalate	84-74-2	2.49E-09	1.37E-07	1.70E-07	2.22E-10	7.74E-08	1.70E-07	7.70E-08
Vinyl Acetate	00108-05-4	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Chlorobenzene	00108-90-7	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Carbon Tetrachloride	00056-23-5	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Chloroform	00067-66-3	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Bromoform	00075-25-2	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Vinyl Chloride	00075-01-4	< 1.48E-07	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 7.19E-08	< 1.48E-07	5.11E-08
Tetrachloroethene	00127-18-4	8.39E-08	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 5.60E-08	8.39E-08	3.10E-08
Ethylbenzene	100-41-4	1.12E-07	< 9.71E-09	7.78E-08	2.61E-10	< 5.00E-08	1.12E-07	4.67E-08
Styrene	100-42-5	1.55E-07	< 9.53E-09	< 8.98E-09	< 9.38E-11	< 4.34E-08	1.55E-07	6.45E-08
1,1,1-Trichloroethane	00071-55-6	3.32E-08	< 7.04E-08	< 6.63E-08	< 3.46E-09	< 4.33E-08	< 7.04E-08	2.72E-08
Benzene	71-43-2	5.99E-08	1.76E-08	5.39E-08	3.47E-10	3.29E-08	5.99E-08	2.48E-08
Biphenyl	92-52-4	3.55E-08	3.65E-08	4.16E-08	9.50E-11	2.84E-08	4.16E-08	1.65E-08
2,4-Dinitrophenol	105-67-9	< 3.06E-08	< 5.81E-08	< 2.01E-08	< 2.64E-10	< 2.73E-08	< 5.81E-08	2.09E-08
3/4-Methylphenol	108-39-4/106-44-5	5.58E-08	< 1.80E-08	1.13E-08	< 3.40E-11	< 2.13E-08	< 5.58E-08	2.09E-08
Dimethylphthalate	131-11-3	< 2.66E-09	7.21E-08	< 1.74E-09	< 2.08E-11	< 1.91E-08	7.21E-08	3.06E-08
4-Nitrophenol	100-02-7	< 2.05E-08	< 3.89E-08	< 1.35E-08	< 2.00E-10	< 1.83E-08	< 3.89E-08	1.40E-08
Pentachloronitrobenzene	82-68-8	< 2.17E-08	< 3.74E-08	< 1.33E-08	< 1.88E-10	< 1.81E-08	< 3.74E-08	1.35E-08
Phenol	108-95-2	4.65E-08	< 1.41E-08	< 4.28E-09	6.99E-10	< 1.64E-08	4.65E-08	1.81E-08
n-Nitrosodimethylamine	62-75-9	< 9.94E-09	< 3.08E-08	< 9.42E-09	< 7.20E-11	< 1.26E-08	< 3.08E-08	1.12E-08
Hexachlorocyclopentadiene	77-47-4	< 1.34E-08	< 2.54E-08	< 8.82E-09	< 8.55E-11	< 1.19E-08	< 2.54E-08	9.15E-09
1,2-Dibromo-3-chloropropane	96-12-8	< 9.32E-09	< 2.89E-08	< 8.82E-09	< 7.68E-11	< 1.18E-08	< 2.89E-08	1.05E-08
Trifluralin	1582-09-8	< 1.28E-08	< 2.44E-08	< 8.47E-09	< 1.18E-10	< 1.15E-08	< 2.44E-08	8.76E-09
Hexachloroethane	67-72-1	< 8.93E-09	< 2.77E-08	< 8.42E-09	< 8.03E-11	< 1.13E-08	< 2.77E-08	1.01E-08
2-Methylphenol	95-48-7	1.99E-08	< 1.87E-08	< 5.73E-09	2.31E-11	< 1.11E-08	1.99E-08	8.48E-09
n-Nitrosomorpholine	59-89-2	< 8.70E-09	< 2.69E-08	< 8.22E-09	< 7.18E-11	< 1.10E-08	< 2.69E-08	9.83E-09
Pentachlorophenol	87-86-5	< 1.21E-08	< 2.08E-08	< 7.37E-09	< 7.82E-11	< 1.01E-08	< 2.08E-08	7.52E-09
1,3-Butadiene	106-99-0	< 2.08E-08	< 9.90E-09	< 9.33E-09	< 9.74E-11	< 1.00E-08	< 2.08E-08	7.32E-09
Hexachlorobutadiene	87-68-3	< 8.36E-09	< 2.20E-08	< 6.88E-09	< 7.14E-11	< 9.33E-09	< 2.20E-08	7.95E-09
Hydroquinone	123-31-9	< 7.51E-09	< 1.98E-08	< 6.18E-09	< 8.20E-11	< 8.38E-09	< 1.98E-08	7.14E-09

Table 3-2A. WARMUP MILL EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb-rubber	Cmpd. 3 lb/lb-rubber	Cmpd. 4 lb/lb-rubber	Cmpd. 12 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Dibenzofuran	132-64-9	1.73E-08	< 4.19E-09	1.06E-08	< 3.53E-11	< 8.02E-09	1.73E-08	6.53E-09
2,4,6-Trichlorophenol	88-06-2	< 8.87E-09	< 1.68E-08	< 5.83E-09	< 6.58E-11	< 7.88E-09	< 1.68E-08	6.02E-09
2,4,5-Trichlorophenol	95-95-4	< 8.76E-09	< 1.66E-08	< 5.73E-09	< 6.26E-11	< 7.79E-09	< 1.66E-08	5.97E-09
o-Anisidine	90-04-0	< 6.89E-09	< 1.81E-08	< 5.68E-09	< 5.59E-11	< 7.68E-09	< 1.81E-08	6.55E-09
2,4-Dinitrotoluene	121-14-2	< 7.74E-09	< 1.47E-08	< 5.08E-09	< 6.55E-11	< 6.89E-09	< 1.47E-08	5.27E-09
Hexachlorobenzene	118-74-1	< 7.46E-09	< 1.29E-08	< 4.58E-09	< 5.71E-11	< 6.24E-09	< 1.29E-08	4.65E-09
Nitrobenzene	98-95-3	< 5.37E-09	< 1.41E-08	< 4.38E-09	< 4.35E-11	< 5.97E-09	< 1.41E-08	5.09E-09
1,2,4-Trichlorobenzene	120-82-1	< 5.25E-09	< 1.39E-08	< 4.33E-09	< 4.19E-11	< 5.89E-09	< 1.39E-08	5.04E-09
Benzyl Chloride	100-44-7	< 3.22E-09	< 9.88E-09	< 3.04E-09	< 6.93E-09	< 5.77E-09	< 9.88E-09	2.84E-09
o-Toluidine	95-53-4	< 4.29E-09	< 1.32E-08	< 4.04E-09	< 3.41E-11	< 5.38E-09	< 1.32E-08	4.80E-09
1,4-Dichlorobenzene	106-46-7	< 4.07E-09	< 1.26E-08	< 3.84E-09	< 3.40E-11	< 5.13E-09	< 1.26E-08	4.59E-09
Cumene	98-82-8	< 2.37E-09	1.47E-08	1.44E-09	2.48E-11	< 4.63E-09	1.47E-08	5.85E-09
3,3'-Dimethoxybenzidine	119-90-4	< 3.79E-09	< 1.08E-08	< 3.29E-09	< 7.37E-11	< 4.48E-09	< 1.08E-08	3.90E-09
4-Nitrobiphenyl	92-93-3	< 4.69E-09	< 8.08E-09	< 2.84E-09	< 4.32E-11	< 3.91E-09	< 8.08E-09	2.92E-09
4,4'-Methylenedianiline	101-77-9	< 3.22E-09	< 9.13E-09	< 2.74E-09	< 5.31E-11	< 3.79E-09	< 9.13E-09	3.31E-09
Benzidine	92-87-5	< 2.32E-09	< 6.58E-09	< 1.99E-09	< 3.19E-11	< 2.73E-09	< 6.58E-09	2.39E-09
4-Aminobiphenyl	92-67-1	< 2.49E-09	< 4.34E-09	< 1.54E-09	< 7.77E-11	< 2.11E-09	< 4.34E-09	1.55E-09
3,3'-Dimethylbenzidine	119-93-7	< 1.58E-09	< 4.49E-09	< 1.35E-09	< 2.43E-11	< 1.86E-09	< 4.49E-09	1.63E-09

Compounds 2, 3, and 4 were conducted on Warmup Mill No. 2. A single test run was conducted on each compound.
Compound 12 was conducted on Warmup Mill No. 1. Data are averages of three test runs.

TABLE 3-3. EXTRUSION EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd.#4 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd #9 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOC		8.35E-06	1.76E-05	1.73E-05	1.24E-05	1.39E-05	1.76E-05	3.82E-06
TOTAL SPECIATED ORGANICS		< 1.50E-05	< 5.87E-05	< 2.77E-05	< 1.25E-05	< 2.85E-05	< 5.87E-05	1.84E-05
TOTAL METAL HAPs		4.63E-07	1.05E-07	1.95E-07	7.57E-07	3.80E-07	7.57E-07	2.55E-07
TOTAL ORGANIC HAPs		< 1.32E-05	< 3.70E-05	< 1.89E-05	< 9.14E-06	< 1.96E-05	< 3.70E-05	1.07E-05
TOTAL PARTICULATE MATTER (PM)		2.38E-05	1.28E-06	5.75E-06	2.66E-05	1.44E-05	2.66E-05	1.10E-05
TOTAL HAPs (1)		**< 1.37E-05**	**< 3.71E-05**	**< 1.91E-05**	**< 9.90E-06**	**< 2.00E-05**	**< 3.71E-05**	**1.04E-05**
Individual HAPs:								
1,1,1-Trichloroethane	71-55-6	< 8.47E-08	< 9.31E-08	< 1.08E-07	< 6.56E-08	< 8.77E-08	< 1.08E-07	1.52E-08
1,2-Dibromo-3-Chloropropane	96-12-8	< 2.38E-07	< 2.00E-07	< 1.66E-07	< 1.32E-07	< 1.84E-07	< 2.38E-07	3.95E-08
1,2,4-Trichlorobenzene	120-82-1	< 2.51E-08	< 6.79E-09	< 1.66E-08	< 8.57E-09	< 1.43E-08	< 2.51E-08	7.25E-09
1,3-Butadiene	00106-99-0	< 8.92E-08	5.06E-07	< 6.01E-08	< 7.83E-08	< 1.83E-07	5.06E-07	1.87E-07
1,4-Dichlorobenzene	106-46-7	< 1.20E-08	< 5.96E-09	< 1.36E-08	1.97E-09	< 8.36E-09	< 1.36E-08	4.65E-09
2-Butanone	78-93-3	1.34E-07	1.17E-07	1.18E-07	9.29E-08	1.15E-07	1.34E-07	1.48E-08
2-Chloroacetophenone	532-27-4	< 1.24E-08	< 3.54E-09	< 5.55E-09	3.70E-09	< 6.29E-09	< 1.24E-08	3.60E-09
2-Chloronaphthalene	1335-88-2	< 1.29E-08	< 3.28E-09	< 6.43E-09	1.07E-09	< 5.93E-09	< 1.29E-08	4.47E-09
2,4-Dinitrophenol	5-12-85	< 1.48E-07	< 3.30E-08	< 9.51E-08	< 6.64E-08	< 8.57E-08	< 1.48E-07	4.23E-08
2,4-Dinitrotoluene	121-14-2	< 3.65E-08	< 8.85E-09	< 2.42E-08	< 1.26E-08	< 2.05E-08	< 3.65E-08	1.08E-08
2,4,5-Trichlorophenol	95-95-4	< 4.37E-08	< 9.62E-09	< 2.82E-08	< 1.59E-08	< 2.44E-08	< 4.37E-08	1.30E-08
2,4,6-Trichlorophenol	88-06-2	< 4.15E-08	< 9.79E-09	< 2.72E-08	< 1.57E-08	< 2.36E-08	< 4.15E-08	1.21E-08
3,3'-Dimethoxybenzidine	119-90-4	< 5.49E-08	< 3.00E-08	< 4.69E-08	< 4.19E-08	< 4.34E-08	< 5.49E-08	9.04E-09
3,3'-Dimethylbenzidine	119-93-7	< 2.34E-08	< 8.25E-09	< 1.74E-08	< 1.45E-08	< 1.59E-08	< 2.34E-08	5.45E-09
3/4-Methylphenol	108-39-4/106-44-5	< 2.24E-08	< 8.85E-09	< 1.87E-08	2.87E-09	< 1.32E-08	< 2.24E-08	7.74E-09
4-Aminobiphenyl	92-67-1	< 1.76E-08	< 4.22E-09	< 1.18E-08	< 6.53E-09	< 1.01E-08	< 1.76E-08	5.17E-09
4-Methyl-2-Pentanone	108-10-1	5.54E-06	2.66E-06	2.85E-07	1.61E-06	2.52E-06	5.54E-06	1.93E-06
4-Nitrobiphenyl	92-93-3	< 3.61E-08	< 9.26E-09	< 2.61E-08	< 1.35E-08	< 2.12E-08	< 3.61E-08	1.06E-08
4-Nitrophenol	100-02-7	< 1.11E-07	< 2.80E-08	< 7.22E-08	< 6.39E-08	< 6.87E-08	< 1.11E-07	2.94E-08
4,4'-Methylenedianiline	107-77-9	< 4.81E-08	< 1.63E-08	< 3.55E-08	< 3.08E-08	< 3.27E-08	< 4.81E-08	1.14E-08
Acetonitrile	75-05-8	< 2.38E-07	< 3.19E-07	< 1.66E-07	< 1.32E-07	< 2.14E-07	< 3.19E-07	7.17E-08
Acetophenone	98-86-2	2.09E-08	3.04E-06	8.18E-06	1.61E-06	2.81E-06	8.18E-06	3.33E-06
Acrolein	107-02-8	< 3.33E-07	< 3.10E-07	< 1.75E-07	< 1.66E-07	< 2.46E-07	< 3.33E-07	7.61E-08
Acrylonitrile	107-13-1	< 2.38E-07	< 2.00E-07	< 1.66E-07	< 1.32E-07	< 1.84E-07	< 2.38E-07	3.95E-08
Allyl Chloride	107-05-1	< 2.38E-07	< 2.00E-07	< 4.20E-07	< 1.32E-07	< 2.48E-07	< 4.20E-07	1.07E-07
Aniline	62-53-3	4.66E-07	1.87E-07	< 8.72E-09	2.21E-07	< 2.21E-07	4.66E-07	1.63E-07
Benzene	00071-43-2	< 4.46E-08	2.69E-07	7.51E-08	1.22E-07	< 1.28E-07	2.69E-07	8.61E-08
Benzidine	92-87-5	< 2.73E-08	< 9.87E-09	< 2.08E-08	< 1.71E-08	< 1.88E-08	< 2.73E-08	6.30E-09
Benzyl Chloride	100-44-7	< 2.38E-07	< 1.83E-07	< 1.66E-07	< 1.32E-07	< 1.80E-07	< 2.38E-07	3.84E-08
Biphenyl	92-52-4	4.61E-09	1.42E-08	3.27E-09	4.42E-09	< 6.62E-09	1.42E-08	4.40E-09
bis(2-Ethylhexyl)phthalate	117-81-7	9.28E-08	1.00E-07	6.70E-08	1.48E-07	1.02E-07	1.48E-07	2.93E-08
Bromoform	75-25-2	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Carbon Disulfide	75-15-0	1.09E-07	< 2.66E-07	9.60E-08	1.16E-07	< 1.47E-07	< 2.66E-07	6.92E-08
Carbon Tetrachloride	56-23-5	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Carbonyl Sulfide	463-58-1	< 1.33E-07	< 2.46E-07	< 1.11E-07	< 8.77E-08	< 1.44E-07	< 2.46E-07	6.08E-08
Chlorobenzene	108-90-7	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Chloroform	67-66-3	< 1.19E-07	< 1.00E-07	< 8.77E-08	< 6.89E-08	< 9.39E-08	< 1.19E-07	1.83E-08
Chloromethane	74-87-3	< 7.06E-08	6.64E-08	< 6.11E-08	1.83E-07	< 9.52E-08	1.83E-07	5.06E-08
Cumene	98-82-8	6.35E-09	1.11E-07	1.48E-06	3.59E-08	4.09E-07	1.48E-06	6.21E-07
Dibenzofuran	132-64-9	< 5.50E-09	2.81E-09	< 5.22E-09	2.58E-09	< 4.03E-09	< 5.50E-09	1.34E-09
Dimethylphthalate	131-11-13	< 1.16E-08	3.83E-09	< 6.58E-09	< 4.15E-09	< 6.55E-09	< 1.16E-08	3.12E-09
Di-n-butylphthalate	84-74-2	8.19E-08	1.96E-07	3.65E-07	< 7.49E-08	< 1.79E-07	3.65E-07	1.17E-07
Epichlorohydrin	106-89-8	< 2.38E-07	< 1.83E-07	< 1.66E-07	< 1.32E-07	< 1.80E-07	< 2.38E-07	3.84E-08
Ethylbenzene	00100-41-4	< 3.30E-08	8.10E-08	3.03E-08	< 3.57E-07	< 1.25E-07	< 3.57E-07	1.35E-07
Hexachlorobenzene	118-74-1	< 3.43E-08	< 9.35E-09	< 2.37E-08	< 1.23E-08	< 1.99E-08	< 3.43E-08	9.90E-09
Hexachlorobutadiene	87-68-3	< 4.22E-08	< 1.04E-08	7.17E-08	< 1.46E-08	< 3.47E-08	7.17E-08	2.46E-08
Hexachlorocyclopentadiene	77-47-4	< 4.71E-08	< 1.08E-08	< 3.08E-08	< 1.50E-08	< 2.59E-08	< 4.71E-08	1.43E-08
Hexachloroethane	67-72-1	< 4.14E-08	< 1.22E-08	< 2.87E-08	< 1.56E-08	< 2.45E-08	< 4.14E-08	1.16E-08
Hydroquinone	123-31-9	< 4.06E-08	< 9.51E-09	< 2.58E-08	< 1.69E-08	< 2.32E-08	< 4.06E-08	1.16E-08

TABLE 3-3. EXTRUSION EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd.#4 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd #9 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Isophorone	78-59-1	2.85E-08	< 3.78E-09	< 7.99E-09	6.35E-08	< 2.59E-08	6.35E-08	2.36E-08
Methylene Chloride	79-09-2	1.60E-06	1.32E-05	2.44E-06	< 8.18E-08	< 4.32E-06	1.32E-05	5.18E-06
m-Xylene + p-Xylene	00108-38-3/00106-42-3	< 7.65E-08	3.32E-07	1.53E-07	6.00E-08	< 1.55E-07	3.32E-07	1.08E-07
Naphthalene	91-20-3	6.66E-08	1.77E-07	7.81E-07	6.04E-08	2.71E-07	7.81E-07	2.98E-07
n-Hexane	110-54-3	1.02E-07	3.94E-07	8.38E-07	2.45E-06	9.46E-07	2.45E-06	9.07E-07
Nitrobenzene	98-95-3	< 2.20E-08	< 6.81E-09	< 1.52E-08	< 8.14E-09	< 1.30E-08	< 2.20E-08	6.09E-09
n-Nitrosodimethylamine	62-75-9	< 8.72E-08	< 1.79E-08	< 5.65E-08	< 2.06E-08	< 4.56E-08	< 8.72E-08	2.84E-08
n-Nitrosomorpholine	59-89-2	< 3.77E-08	< 9.86E-09	< 2.54E-08	< 1.43E-08	< 2.18E-08	< 3.77E-08	1.08E-08
o-Anisidine	90-04-0	< 3.34E-08	< 1.04E-08	< 2.30E-08	< 1.17E-08	< 1.96E-08	< 3.34E-08	9.34E-09
o-Toluidine	95-53-4	< 1.84E-08	< 1.18E-07	< 1.26E-08	< 6.63E-09	< 3.89E-08	< 1.18E-07	4.58E-08
o-Xylene	00095-47-6	4.14E-08	2.58E-07	7.55E-08	4.77E-07	2.13E-07	4.77E-07	1.73E-07
Pentachloronitrobenzene	82-68-8	< 1.05E-07	< 2.72E-08	< 7.17E-08	< 4.10E-08	< 6.13E-08	< 1.05E-07	3.01E-08
Pentachlorophenol	87-86-5	< 8.37E-08	< 1.89E-08	< 5.47E-08	< 3.85E-08	< 4.89E-08	< 8.37E-08	2.37E-08
Phenol	108-95-2	1.20E-07	1.42E-07	1.73E-07	1.17E-08	1.12E-07	1.73E-07	6.07E-08
Propylene Oxide	75-56-9	< 2.38E-07	< 1.85E-06	< 2.36E-07	< 5.04E-07	< 7.08E-07	< 1.85E-06	6.70E-07
Styrene	00100-42-5	< 1.07E-08	7.25E-07	< 2.38E-08	< 3.93E-08	< 2.00E-07	7.25E-07	3.03E-07
Tetrachloroethene	127-18-4	< 1.07E-07	< 9.47E-08	< 7.39E-08	< 2.02E-07	< 1.20E-07	< 2.02E-07	4.91E-08
Toluene	00108-88-3	< 1.16E-07	9.26E-06	< 9.02E-08	< 7.09E-08	< 2.38E-06	9.26E-06	3.97E-06
Trifluralin	1582-09-8	< 6.39E-08	< 1.45E-08	< 4.18E-08	< 1.95E-08	< 3.49E-08	< 6.39E-08	1.97E-08
Vinyl Acetate	108-05-4	< 1.19E-07	< 1.00E-07	< 1.05E-07	< 6.60E-08	< 9.74E-08	< 1.19E-07	1.95E-08
Vinyl Chloride	75-01-4	< 1.19E-07	< 1.00E-07	< 8.07E-08	< 6.34E-08	< 9.08E-08	< 1.19E-07	2.09E-08
Chromium		2.45E-07	2.25E-08	7.81E-08	2.54E-07	1.50E-07	2.54E-07	1.02E-07
Cobalt		1.90E-08	9.92E-09	1.51E-08	1.04E-08	1.36E-08	1.90E-08	3.71E-09
Nickel		1.99E-07	7.24E-08	1.02E-07	4.93E-07	2.16E-07	4.93E-07	1.66E-07

(1) - Total HAPs include listed individual organic and metal HAP compounds.

TABLE 3-3A. EXTRUSION EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd.#4 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd #9 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOC		8.35E-06	1.76E-05	1.73E-05	1.24E-05	1.39E-05	1.76E-05	3.82E-06
TOTAL SPECIATED ORGANICS		< 1.50E-05	< 5.87E-05	< 2.77E-05	< 1.25E-05	< 2.85E-05	< 5.87E-05	1.84E-05
TOTAL METAL HAPs		4.63E-07	1.05E-07	1.95E-07	7.57E-07	3.80E-07	7.57E-07	2.55E-07
TOTAL ORGANIC HAPs		< 1.32E-05	< 3.70E-05	< 1.89E-05	< 9.14E-06	< 1.96E-05	< 3.70E-05	1.07E-05
TOTAL PARTICULATE MATTER (PM)		2.38E-05	1.28E-06	5.75E-06	2.66E-05	1.44E-05	2.66E-05	1.10E-05
TOTAL HAPs (1)		**< 1.37E-05**	**< 3.71E-05**	**< 1.91E-05**	**< 9.90E-06**	**< 2.00E-05**	**< 3.71E-05**	**1.04E-05**
Individual HAPs:								
Methylene Chloride	79-09-2	1.60E-06	1.32E-05	2.44E-06	< 8.18E-08	< 4.32E-06	1.32E-05	5.18E-06
Acetophenone	98-86-2	2.09E-08	3.04E-06	8.18E-06	1.61E-08	2.81E-06	8.18E-06	3.33E-06
4-Methyl-2-Pentanone	108-10-1	5.54E-06	2.66E-06	2.85E-07	1.61E-06	2.52E-06	5.54E-06	1.93E-06
Toluene	00108-88-3	< 1.16E-07	9.26E-06	< 9.02E-08	< 7.09E-08	< 2.38E-06	9.26E-06	3.97E-06
n-Hexane	110-54-3	1.02E-07	3.94E-07	8.38E-07	2.45E-06	9.46E-07	2.45E-06	9.07E-07
Propylene Oxide	75-56-9	< 2.38E-07	< 1.85E-06	< 2.36E-07	< 5.04E-07	< 7.08E-07	< 1.85E-06	6.70E-07
Cumene	98-82-8	6.35E-09	1.11E-07	1.48E-06	3.59E-08	4.09E-07	1.48E-06	6.21E-07
Naphthalene	91-20-3	6.66E-08	1.77E-07	7.81E-07	6.04E-08	2.71E-07	7.81E-07	2.98E-07
Allyl Chloride	107-05-1	< 2.38E-07	< 2.00E-07	< 4.20E-07	< 1.32E-07	< 2.48E-07	< 4.20E-07	1.07E-07
Acrolein	107-02-8	< 3.33E-07	< 3.10E-07	< 1.75E-07	< 1.66E-07	< 2.46E-07	< 3.33E-07	7.61E-08
Aniline	62-53-3	4.66E-07	1.87E-07	< 8.72E-09	2.21E-07	< 2.21E-07	4.66E-07	1.63E-07
Acetonitrile	75-05-8	< 2.38E-07	< 3.19E-07	< 1.66E-07	< 1.32E-07	< 2.14E-07	< 3.19E-07	7.17E-08
o-Xylene	00095-47-6	4.14E-08	2.58E-07	7.55E-08	4.77E-07	2.13E-07	4.77E-07	1.73E-07
Styrene	00100-42-5	< 1.07E-08	7.25E-07	< 2.38E-08	< 3.93E-08	< 2.00E-07	7.25E-07	3.03E-07
Acrylonitrile	107-13-1	< 2.38E-07	< 2.00E-07	< 1.66E-07	< 1.32E-07	< 1.84E-07	< 2.38E-07	3.95E-08
1,2-Dibromo-3-Chloropropane	96-12-8	< 2.38E-07	< 2.00E-07	< 1.66E-07	< 1.32E-07	< 1.84E-07	< 2.38E-07	3.95E-08
1,3-Butadiene	00106-99-0	< 8.92E-08	5.06E-07	< 6.01E-08	< 7.83E-08	< 1.83E-07	5.06E-07	1.87E-07
Benzyl Chloride	100-44-7	< 2.38E-07	< 1.83E-07	< 1.66E-07	< 1.32E-07	< 1.80E-07	< 2.38E-07	3.84E-08
Epichlorohydrin	106-89-8	< 2.38E-07	< 1.83E-07	< 1.66E-07	< 1.32E-07	< 1.80E-07	< 2.38E-07	3.84E-08
Di-n-butylphthalate	84-74-2	8.19E-08	1.96E-07	3.65E-07	< 7.49E-08	< 1.79E-07	3.65E-07	1.17E-07
m-Xylene + p-Xylene	00108-38-3/00106-42-3	< 7.65E-08	3.32E-07	1.53E-07	6.00E-08	< 1.55E-07	3.32E-07	1.08E-07
Carbon Disulfide	75-15-0	1.09E-07	< 2.66E-07	9.60E-08	1.16E-07	< 1.47E-07	< 2.66E-07	6.92E-08
Carbonyl Sulfide	463-58-1	< 1.33E-07	< 2.46E-07	< 1.11E-07	< 8.77E-08	< 1.44E-07	< 2.46E-07	6.08E-08
Benzene	00071-43-2	< 4.46E-08	2.69E-07	7.51E-08	1.22E-07	< 1.28E-07	2.69E-07	8.61E-08
Ethylbenzene	00100-41-4	< 3.30E-08	8.10E-08	3.03E-08	< 3.57E-07	< 1.25E-07	< 3.57E-07	1.35E-07
Tetrachloroethene	127-18-4	< 1.07E-07	< 9.47E-08	< 7.39E-08	< 2.02E-07	< 1.20E-07	< 2.02E-07	4.91E-08
2-Butanone	78-93-3	1.34E-07	1.17E-07	1.18E-07	9.29E-08	1.15E-07	1.34E-07	1.48E-08
Phenol	108-95-2	1.20E-07	1.42E-07	1.73E-07	1.17E-08	1.12E-07	1.73E-07	6.07E-08
bis(2-Ethylhexyl)phthalate	117-81-7	9.28E-08	1.00E-07	6.70E-08	1.48E-07	1.02E-07	1.48E-07	2.93E-08
Vinyl Acetate	108-05-4	< 1.19E-07	< 1.00E-07	< 1.05E-07	< 6.60E-08	< 9.74E-08	< 1.19E-07	1.95E-08
Chloromethane	74-87-3	< 7.06E-08	6.64E-08	< 6.11E-08	1.83E-07	< 9.52E-08	1.83E-07	5.06E-08
Chloroform	67-66-3	< 1.19E-07	< 1.00E-07	< 8.77E-08	< 6.89E-08	< 9.39E-08	< 1.19E-07	1.83E-08
Bromoform	75-25-2	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Chlorobenzene	108-90-7	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Carbon Tetrachloride	56-23-5	< 1.19E-07	< 1.00E-07	< 9.02E-08	< 6.60E-08	< 9.38E-08	< 1.19E-07	1.92E-08
Vinyl Chloride	75-01-4	< 1.19E-07	< 1.00E-07	< 8.07E-08	< 6.34E-08	< 9.08E-08	< 1.19E-07	2.09E-08
1,1,1-Trichloroethane	71-55-6	< 8.47E-08	< 9.31E-08	< 1.08E-07	< 6.56E-08	< 8.77E-08	< 1.08E-07	1.52E-08
2,4-Dinitrophenol	5-12-85	< 1.48E-07	< 3.30E-08	< 9.51E-08	< 6.64E-08	< 8.57E-08	< 1.48E-07	4.23E-08
4-Nitrophenol	100-02-7	< 1.11E-07	< 2.80E-08	< 7.22E-08	< 6.39E-08	< 6.87E-08	< 1.11E-07	2.94E-08
Pentachloronitrobenzene	82-68-8	< 1.05E-07	< 2.72E-08	< 7.17E-08	< 4.10E-08	< 6.13E-08	< 1.05E-07	3.01E-08
Pentachlorophenol	87-86-5	< 8.37E-08	< 1.89E-08	< 5.47E-08	< 3.85E-08	< 4.89E-08	< 8.37E-08	2.37E-08
n-Nitrosodimethylamine	62-75-9	< 8.72E-08	< 1.79E-08	< 5.65E-08	< 2.06E-08	< 4.56E-08	< 8.72E-08	2.84E-08
3,3'-Dimethoxybenzidine	119-90-4	< 5.49E-08	< 3.00E-08	< 4.69E-08	< 4.19E-08	< 4.34E-08	< 5.49E-08	9.04E-09
o-Toluidine	95-53-4	< 1.84E-08	< 1.18E-07	< 1.26E-08	< 6.63E-09	< 3.89E-08	< 1.18E-07	4.58E-08
Trifluralin	1582-09-8	< 6.39E-08	< 1.45E-08	< 4.18E-08	< 1.95E-08	< 3.49E-08	< 6.39E-08	1.97E-08
Hexachlorobutadiene	87-68-3	< 4.22E-08	< 1.04E-08	7.17E-08	< 1.46E-08	< 3.47E-08	7.17E-08	2.46E-08
4,4'-Methylenedianiline	107-77-9	< 4.81E-08	< 1.63E-08	< 3.55E-08	< 3.08E-08	< 3.27E-08	< 4.81E-08	1.14E-08

TABLE 3-3A. EXTRUSION EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd.#4 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd #9 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Isophorone	78-59-1	2.85E-08	< 3.78E-09	< 7.99E-09	6.35E-08	< 2.59E-08	6.35E-08	2.36E-08
Hexachlorocyclopentadiene	77-47-4	< 4.71E-08	< 1.08E-08	< 3.08E-08	< 1.50E-08	< 2.59E-08	< 4.71E-08	1.43E-08
Hexachloroethane	67-72-1	< 4.14E-08	< 1.22E-08	< 2.87E-08	< 1.56E-08	< 2.45E-08	< 4.14E-08	1.16E-08
2,4,5-Trichlorophenol	95-95-4	< 4.37E-08	< 9.62E-09	< 2.82E-08	< 1.59E-08	< 2.44E-08	< 4.37E-08	1.30E-08
2,4,6-Trichlorophenol	88-06-2	< 4.15E-08	< 9.79E-09	< 2.72E-08	< 1.57E-08	< 2.36E-08	< 4.15E-08	1.21E-08
Hydroquinone	123-31-9	< 4.06E-08	< 9.51E-09	< 2.58E-08	< 1.69E-08	< 2.32E-08	< 4.06E-08	1.16E-08
n-Nitrosomorpholine	59-89-2	< 3.77E-08	< 9.86E-09	< 2.54E-08	< 1.43E-08	< 2.18E-08	< 3.77E-08	1.08E-08
4-Nitrobiphenyl	92-93-3	< 3.61E-08	< 9.26E-09	< 2.61E-08	< 1.35E-08	< 2.12E-08	< 3.61E-08	1.06E-08
2,4-Dinitrotoluene	121-14-2	< 3.65E-08	< 8.85E-09	< 2.42E-08	< 1.26E-08	< 2.05E-08	< 3.65E-08	1.08E-08
Hexachlorobenzene	118-74-1	< 3.43E-08	< 9.35E-09	< 2.37E-08	< 1.23E-08	< 1.99E-08	< 3.43E-08	9.90E-09
o-Anisidine	90-04-0	< 3.34E-08	< 1.04E-08	< 2.30E-08	< 1.17E-08	< 1.96E-08	< 3.34E-08	9.34E-09
Benzidine	92-87-5	< 2.73E-08	< 9.87E-09	< 2.08E-08	< 1.71E-08	< 1.88E-08	< 2.73E-08	6.30E-09
3,3'-Dimethylbenzidine	119-93-7	< 2.34E-08	< 8.25E-09	< 1.74E-08	< 1.45E-08	< 1.59E-08	< 2.34E-08	5.45E-09
1,2,4-Trichlorobenzene	120-82-1	< 2.51E-08	< 6.79E-09	< 1.66E-08	< 8.57E-09	< 1.43E-08	< 2.51E-08	7.25E-09
3/4-Methylphenol	108-39-4/106-44-5	< 2.24E-08	< 8.85E-09	< 1.87E-08	2.87E-09	< 1.32E-08	< 2.24E-08	7.74E-09
Nitrobenzene	98-95-3	< 2.20E-08	< 6.81E-09	< 1.52E-08	< 8.14E-09	< 1.30E-08	< 2.20E-08	6.09E-09
4-Aminobiphenyl	92-67-1	< 1.76E-08	< 4.22E-09	< 1.18E-08	< 6.53E-09	< 1.01E-08	< 1.76E-08	5.17E-09
1,4-Dichlorobenzene	106-46-7	< 1.20E-08	< 5.96E-09	< 1.36E-08	1.97E-09	< 8.36E-09	< 1.36E-08	4.65E-09
Biphenyl	92-52-4	4.61E-09	1.42E-08	3.27E-09	4.42E-09	< 6.62E-09	1.42E-08	4.40E-09
Dimethylphthalate	131-11-13	< 1.16E-08	3.83E-09	< 6.58E-09	< 4.15E-09	< 6.55E-09	< 1.16E-08	3.12E-09
2-Chloroacetophenone	532-27-4	< 1.24E-08	< 3.54E-09	< 5.55E-09	3.70E-09	< 6.29E-09	< 1.24E-08	3.60E-09
2-Chloronaphthalene	1335-88-2	< 1.29E-08	< 3.28E-09	< 6.43E-09	1.07E-09	< 5.93E-09	< 1.29E-08	4.47E-09
Dibenzofuran	132-64-9	< 5.50E-09	2.81E-09	< 5.22E-09	2.58E-09	< 4.03E-09	< 5.50E-09	1.34E-09
Chromium		2.45E-07	2.25E-08	7.81E-08	2.54E-07	1.50E-07	2.54E-07	1.02E-07
Cobalt		1.90E-08	9.92E-09	1.51E-08	1.04E-08	1.36E-08	1.90E-08	3.71E-09
Nickel		1.99E-07	7.24E-08	1.02E-07	4.93E-07	2.16E-07	4.93E-07	1.66E-07

(1) - Total HAPs include listed individual organic and metal HAP compounds.

TABLE 3-4. CALENDERING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb rubber	Cmpd. 12 lb/lb rubber	Mean lb/lb rubber	Max. lb/lb rubber	Std. Dev. lb/lb rubber
TOTAL VOCs		5.31E-05	4.67E-06	2.89E-05	5.31E-05	2.42E-05
TOTAL SPECIATED ORGANICS		< 7.34E-05	< 4.49E-06	< 3.89E-05	< 7.34E-05	3.45E-05
TOTAL HAPs		**< 1.34E-05**	**< 3.49E-06**	**< 8.43E-06**	**< 1.34E-05**	**4.94E-06**
Individual HAPs:						
1,1,1-Trichloroethane	71-55-6	< 5.27E-08	< 2.12E-08	< 3.70E-08	< 5.27E-08	1.58E-08
1,2-Dibromo-3-Chloropropane	00096-12-8	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
1,2-Dichloroethane	107-06-2	1.22E-07	< 2.12E-08	< 7.18E-08	1.22E-07	5.06E-08
1,2,4-Trichlorobenzene	120-82-1	< 2.62E-09	< 3.47E-11	< 1.33E-09	< 2.62E-09	1.30E-09
1,3-Butadiene	106-99-0	< 1.10E-08	< 1.19E-10	< 5.56E-09	< 1.10E-08	5.44E-09
1,4-Dichlorobenzene	106-46-7	< 5.54E-08	< 2.12E-08	< 3.83E-08	< 5.54E-08	1.71E-08
2-Butanone	78-93-3	< 2.61E-07	< 4.24E-08	< 1.52E-07	< 2.61E-07	1.09E-07
2-Methylphenol	95-48-7	< 1.91E-09	1.86E-10	< 1.05E-09	< 1.91E-09	8.61E-10
2,4-Dinitrophenol	51-28-5	< 1.01E-08	< 1.87E-10	< 5.16E-09	< 1.01E-08	4.97E-09
2,4-Dinitrotoluene	121-14-2	< 3.19E-09	< 4.96E-11	< 1.62E-09	< 3.19E-09	1.57E-09
2,4,5-Trichlorophenol	95-95-4	< 3.41E-09	< 4.19E-11	< 1.73E-09	< 3.41E-09	1.68E-09
2,4,6-Trichlorophenol	88-06-2	< 3.60E-09	< 4.32E-11	< 1.82E-09	< 3.60E-09	1.78E-09
3,3'-Dimethoxybenzidine	119-90-4	< 6.00E-09	< 3.54E-11	< 3.02E-09	< 6.00E-09	2.98E-09
3,3'-Dimethylbenzidine	119-93-7	< 2.18E-09	< 1.15E-11	< 1.09E-09	< 2.18E-09	1.08E-09
3/4-Methylphenol	108-39-4/106-44-5	< 1.76E-09	1.26E-10	< 9.41E-10	< 1.76E-09	8.15E-10
4-Aminobiphenyl	92-67-1	< 1.94E-09	1.27E-09	< 1.61E-09	< 1.94E-09	3.39E-10
4-Methyl-2-pentanone	108-10-1	< 6.42E-07	< 2.12E-08	< 3.31E-07	< 6.42E-07	3.10E-07
4-Nitrobiphenyl	92-93-3	< 3.19E-09	< 2.86E-11	< 1.61E-09	< 3.19E-09	1.58E-09
4-Nitrophenol	100-02-7	< 5.10E-09	< 1.40E-10	< 2.62E-09	< 5.10E-09	2.48E-09
4,4'-Methylenedianiline	101-77-9	< 3.77E-09	< 2.44E-11	< 1.90E-09	< 3.77E-09	1.87E-09
Acetonitrile	01722-09-4	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Acetophenone	98-86-2	4.94E-07	1.17E-09	2.48E-07	4.94E-07	2.46E-07
Acrolein	107-02-8	< 1.29E-07	< 4.24E-08	< 8.56E-08	< 1.29E-07	4.32E-08
Acrylonitrile	00107-13-1	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Allyl Chloride	00107-05-1	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Aniline	62-53-3	< 9.44E-08	9.64E-09	< 5.20E-08	< 9.44E-08	4.24E-08
Benzene	71-43-2	4.54E-08	1.33E-09	2.34E-08	4.54E-08	2.20E-08
Benzidine	92-87-5	< 1.96E-09	< 1.27E-11	< 9.85E-10	< 1.96E-09	9.72E-10
Benzyl Chloride	00100-44-7	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Biphenyl	92-52-4	1.78E-08	8.88E-10	9.33E-09	1.78E-08	8.45E-09
bis(2-Ethylhexyl)phthalate	117-81-7	7.34E-07	9.35E-10	3.68E-07	7.34E-07	3.67E-07
Bromoform	00075-25-2	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Carbon Disulfide	75-15-0	2.41E-06	2.61E-06	2.51E-06	2.61E-06	1.02E-07
Carbon Tetrachloride	00056-23-5	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Carbonyl Sulfide	463-58-1	< 9.58E-08	4.19E-08	< 6.88E-08	< 9.58E-08	2.69E-08
Chlorobenzene	00108-90-7	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Chloroform	00067-66-3	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Chloromethane	74-87-3	2.18E-08	< 2.12E-08	< 2.15E-08	2.18E-08	3.13E-10

TABLE 3-4. CALENDERING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb rubber	Cmpd. 12 lb/lb rubber	Mean lb/lb rubber	Max. lb/lb rubber	Std. Dev. lb/lb rubber
Cumene	98-82-8	6.31E-08	7.05E-10	3.19E-08	6.31E-08	3.12E-08
Dibenzofuran	132-64-9	< 9.38E-10	< 1.97E-10	< 5.67E-10	< 9.38E-10	3.70E-10
Di-n-butylphthalate	84-74-2	0.00E+00	2.62E-10	2.62E-10	2.62E-10	NA
Epichlorohydrin	00106-89-8	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Ethylbenzene	100-41-4	1.57E-07	2.06E-09	7.94E-08	1.57E-07	7.73E-08
Hexachlorobenzene	118-74-1	< 2.78E-09	< 3.45E-11	< 1.41E-09	< 2.78E-09	1.37E-09
Hexachlorobutadiene	00087-68-3	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Hexachlorocyclopentadiene	77-47-4	< 5.80E-09	< 5.55E-11	< 2.93E-09	< 5.80E-09	2.87E-09
Hexachloroethane	67-72-1	< 3.48E-09	< 6.47E-11	< 1.77E-09	< 3.48E-09	1.71E-09
Hydroquinone	123-31-9	< 3.95E-08	< 6.47E-11	< 1.98E-08	< 3.95E-08	1.97E-08
Isophorone	78-59-1	1.30E-07	< 1.98E-11	< 6.51E-08	1.30E-07	6.51E-08
Methylene Chloride	75-09-2	< 7.96E-08	< 3.55E-08	< 5.75E-08	< 7.96E-08	2.20E-08
m-Xylene + p-Xylene	108-38-3/106-42-3	2.86E-07	6.09E-09	1.46E-07	2.86E-07	1.40E-07
Naphthalene	91-20-3	1.21E-07	2.21E-09	6.15E-08	1.21E-07	5.93E-08
n-Hexane	110-54-3	5.59E-07	3.83E-08	2.99E-07	5.59E-07	2.61E-07
Nitrobenzene	98-95-3	< 2.38E-09	< 3.55E-11	< 1.21E-09	< 2.38E-09	1.17E-09
n-Nitrosodimethylamine	62-75-9	< 7.41E-09	< 5.57E-11	< 3.74E-09	< 7.41E-09	3.68E-09
n-Nitrosomorpholine	59-89-2	< 6.51E-09	< 5.94E-11	< 3.28E-09	< 6.51E-09	3.23E-09
o-Anisidine	90-04-0	< 5.78E-09	< 4.74E-11	< 2.91E-09	< 5.78E-09	2.86E-09
o-Toluidine	95-53-4	< 3.22E-09	< 2.84E-11	< 1.63E-09	< 3.22E-09	1.60E-09
o-Xylene	95-47-6	2.84E-07	2.45E-09	1.43E-07	2.84E-07	1.41E-07
Pentachloronitrobenzene	82-68-8	< 2.03E-08	< 1.22E-10	< 1.02E-08	< 2.03E-08	1.01E-08
Pentachlorophenol	87-86-5	< 3.51E-09	< 4.63E-11	< 1.78E-09	< 3.51E-09	1.73E-09
Phenol	108-95-2	1.49E-07	< 2.72E-11	< 7.44E-08	1.49E-07	7.44E-08
Propylene Oxide	00075-56-9	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Styrene	100-42-5	4.86E-07	7.73E-10	2.43E-07	4.86E-07	2.43E-07
Tetrachloroethene	00127-18-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Toluene	108-88-3	3.92E-06	5.73E-08	1.99E-06	3.92E-06	1.93E-06
Trifluralin	1582-09-8	< 1.01E-08	< 8.80E-11	< 5.11E-09	< 1.01E-08	5.03E-09
Vinyl Acetate	00108-05-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Vinyl Chloride	00075-01-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08

Compound 2 data are averages of three test runs.
Compound 12 data are averages of three test runs.

TABLE 3-4A. CALENDERING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb rubber	Cmpd. 12 lb/lb rubber	Mean lb/lb rubber	Max. lb/lb rubber	Std. Dev. lb/lb rubber
TOTAL VOCs		5.31E-05	4.67E-06	2.89E-05	5.31E-05	2.42E-05
TOTAL SPECIATED ORGANICS		< 7.34E-05	< 4.49E-06	< 3.89E-05	< 7.34E-05	3.45E-05
TOTAL HAPs		**< 1.34E-05**	**< 3.49E-06**	**< 8.43E-06**	**< 1.34E-05**	**4.94E-06**
Individual HAPs:						
Carbon Disulfide	75-15-0	2.41E-06	2.61E-06	2.51E-06	2.61E-06	1.02E-07
Toluene	108-88-3	3.92E-06	5.73E-08	1.99E-06	3.92E-06	1.93E-06
bis(2-Ethylhexyl)phthalate	117-81-7	7.34E-07	9.35E-10	3.68E-07	7.34E-07	3.67E-07
4-Methyl-2-pentanone	108-10-1	< 6.42E-07	< 2.12E-08	< 3.31E-07	< 6.42E-07	3.10E-07
n-Hexane	110-54-3	5.59E-07	3.83E-08	2.99E-07	5.59E-07	2.61E-07
Acetophenone	98-86-2	4.94E-07	1.17E-09	2.48E-07	4.94E-07	2.46E-07
Styrene	100-42-5	4.86E-07	7.73E-10	2.43E-07	4.86E-07	2.43E-07
2-Butanone	78-93-3	< 2.61E-07	< 4.24E-08	< 1.52E-07	< 2.61E-07	1.09E-07
m-Xylene + p-Xylene	108-38-3/106-42-3	2.86E-07	6.09E-09	1.46E-07	2.86E-07	1.40E-07
o-Xylene	95-47-6	2.84E-07	2.45E-09	1.43E-07	2.84E-07	1.41E-07
Allyl Chloride	00107-05-1	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Propylene Oxide	00075-56-9	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Benzyl Chloride	00100-44-7	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Acrylonitrile	00107-13-1	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Epichlorohydrin	00106-89-8	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Hexachlorobutadiene	00087-68-3	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Acetonitrile	01722-09-4	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
1,2-Dibromo-3-Chloropropane	00096-12-8	< 1.56E-07	< 4.24E-08	< 9.94E-08	< 1.56E-07	5.70E-08
Acrolein	107-02-8	< 1.29E-07	< 4.24E-08	< 8.56E-08	< 1.29E-07	4.32E-08
Ethylbenzene	100-41-4	1.57E-07	2.06E-09	7.94E-08	1.57E-07	7.73E-08
Phenol	108-95-2	1.49E-07	< 2.72E-11	< 7.44E-08	1.49E-07	7.44E-08
1,2-Dichloroethane	107-06-2	1.22E-07	< 2.12E-08	< 7.18E-08	1.22E-07	5.06E-08
Carbonyl Sulfide	463-58-1	< 9.58E-08	4.19E-08	< 6.88E-08	< 9.58E-08	2.69E-08
Isophorone	78-59-1	1.30E-07	< 1.98E-11	< 6.51E-08	1.30E-07	6.51E-08
Naphthalene	91-20-3	1.21E-07	2.21E-09	6.15E-08	1.21E-07	5.93E-08
Methylene Chloride	*75-09-2*	*< 7.96E-08*	*< 3.55E-08*	*< 5.75E-08*	*< 7.96E-08*	*2.20E-08*
Aniline	62-53-3	< 9.44E-08	9.64E-09	< 5.20E-08	< 9.44E-08	4.24E-08
Chloroform	00067-66-3	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Chlorobenzene	00108-90-7	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Tetrachloroethene	00127-18-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Vinyl Acetate	00108-05-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Carbon Tetrachloride	00056-23-5	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Vinyl Chloride	00075-01-4	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
Bromoform	00075-25-2	< 7.82E-08	< 2.12E-08	< 4.97E-08	< 7.82E-08	2.85E-08
1,4-Dichlorobenzene	106-46-7	< 5.54E-08	< 2.12E-08	< 3.83E-08	< 5.54E-08	1.71E-08
1,1,1-Trichloroethane	71-55-6	< 5.27E-08	< 2.12E-08	< 3.70E-08	< 5.27E-08	1.58E-08

TABLE 3-4A. CALENDERING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS Number	Cmpd. 2 lb/lb rubber	Cmpd. 12 lb/lb rubber	Mean lb/lb rubber	Max. lb/lb rubber	Std. Dev. lb/lb rubber
Cumene	98-82-8	6.31E-08	7.05E-10	3.19E-08	6.31E-08	3.12E-08
Benzene	71-43-2	4.54E-08	1.33E-09	2.34E-08	4.54E-08	2.20E-08
Chloromethane	74-87-3	2.18E-08	< 2.12E-08	< 2.15E-08	2.18E-08	3.13E-10
Hydroquinone	123-31-9	< 3.95E-08	< 6.47E-11	< 1.98E-08	< 3.95E-08	1.97E-08
Pentachloronitrobenzene	82-68-8	< 2.03E-08	< 1.22E-10	< 1.02E-08	< 2.03E-08	1.01E-08
Biphenyl	92-52-4	1.78E-08	8.88E-10	9.33E-09	1.78E-08	8.45E-09
1,3-Butadiene	106-99-0	< 1.10E-08	< 1.19E-10	< 5.56E-09	< 1.10E-08	5.44E-09
2,4-Dinitrophenol	51-28-5	< 1.01E-08	< 1.87E-10	< 5.16E-09	< 1.01E-08	4.97E-09
Trifluralin	1582-09-8	< 1.01E-08	< 8.80E-11	< 5.11E-09	< 1.01E-08	5.03E-09
n-Nitrosodimethylamine	62-75-9	< 7.41E-09	< 5.57E-11	< 3.74E-09	< 7.41E-09	3.68E-09
n-Nitrosomorpholine	59-89-2	< 6.51E-09	< 5.94E-11	< 3.28E-09	< 6.51E-09	3.23E-09
3,3'-Dimethoxybenzidine	119-90-4	< 6.00E-09	< 3.54E-11	< 3.02E-09	< 6.00E-09	2.98E-09
Hexachlorocyclopentadiene	77-47-4	< 5.80E-09	< 5.55E-11	< 2.93E-09	< 5.80E-09	2.87E-09
o-Anisidine	90-04-0	< 5.78E-09	< 4.74E-11	< 2.91E-09	< 5.78E-09	2.86E-09
4-Nitrophenol	100-02-7	< 5.10E-09	< 1.40E-10	< 2.62E-09	< 5.10E-09	2.48E-09
4,4'-Methylenedianiline	101-77-9	< 3.77E-09	< 2.44E-11	< 1.90E-09	< 3.77E-09	1.87E-09
2,4,6-Trichlorophenol	88-06-2	< 3.60E-09	< 4.32E-11	< 1.82E-09	< 3.60E-09	1.78E-09
Pentachlorophenol	87-86-5	< 3.51E-09	< 4.63E-11	< 1.78E-09	< 3.51E-09	1.73E-09
Hexachloroethane	67-72-1	< 3.48E-09	< 6.47E-11	< 1.77E-09	< 3.48E-09	1.71E-09
2,4,5-Trichlorophenol	95-95-4	< 3.41E-09	< 4.19E-11	< 1.73E-09	< 3.41E-09	1.68E-09
o-Toluidine	95-53-4	< 3.22E-09	< 2.84E-11	< 1.63E-09	< 3.22E-09	1.60E-09
2 4-Dinitrotoluene	121-14-2	< 3.19E-09	< 4.96E-11	< 1.62E-09	< 3.19E-09	1.57E-09
4-Nitrobiphenyl	92-93-3	< 3.19E-09	< 2.86E-11	< 1.61E-09	< 3.19E-09	1.58E-09
4-Aminobiphenyl	92-67-1	< 1.94E-09	1.27E-09	< 1.61E-09	< 1.94E-09	3.39E-10
Hexachlorobenzene	118-74-1	< 2.78E-09	< 3.45E-11	< 1.41E-09	< 2.78E-09	1.37E-09
1,2,4-Trichlorobenzene	120-82-1	< 2.62E-09	< 3.47E-11	< 1.33E-09	< 2.62E-09	1.30E-09
Nitrobenzene	98-95-3	< 2.38E-09	< 3.55E-11	< 1.21E-09	< 2.38E-09	1.17E-09
3,3'-Dimethylbenzidine	119-93-7	< 2.18E-09	< 1.15E-11	< 1.09E-09	< 2.18E-09	1.08E-09
2-Methylphenol	95-48-7	< 1.91E-09	1.86E-10	< 1.05E-09	< 1.91E-09	8.61E-10
Benzidine	92-87-5	< 1.96E-09	< 1.27E-11	< 9.85E-10	< 1.96E-09	9.72E-10
3/4-Methylphenol	108-39-4/106-44-5	< 1.76E-09	1.26E-10	< 9.41E-10	< 1.76E-09	8.15E-10
Dibenzofuran	132-64-9	< 9.38E-10	< 1.97E-10	< 5.67E-10	< 9.38E-10	3.70E-10
Di-n-butylphthalate	84-74-2	0.00E+00	2.62E-10	2.62E-10	2.62E-10	NA

Compound 2 data are averages of three test runs.
Compound 12 data are averages of three test runs.

TABLE 3-5. TIRE PRESS CURING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Numbers	Type A lb/lb-rubber	Type B lb/lb-rubber	Type C lb/lb-rubber	Type D lb/lb-rubber	Type E lb/lb-rubber	Type F (1) lb/lb-rubber	Type G lb/lb-rubber	Type H lb/lb-rubber	Type I lb/lb-rubber	ALL TIRES Mean lb/lb-rubber	ALL TIRES Max. lb/lb-rubber	ALL TIRES Std. Dev. lb/lb-rubber
TOTAL VOCs		3.37E-04	2.51E-04	1.68E-04	2.88E-04	1.64E-04	1.73E-04	2.07E-04	2.61E-04	1.87E-04	2.26E-04	3.37E-04	5.77E-05
TOTAL SPECIATED ORGANICS		< 1.48E-04	< 1.57E-04	< 1.12E-04	< 1.66E-04	< 1.71E-04	< 2.76E-04	< 2.11E-04	< 3.15E-04	< 1.91E-04	< 1.94E-04	< 3.15E-04	6.07E-05
TOTAL ORGANIC HAPs		**< 8.78E-05**	**< 7.23E-05**	**< 4.40E-05**	**< 1.01E-04**	**< 1.04E-04**	**< 1.31E-04**	**< 8.18E-05**	**< 1.58E-04**	**< 8.31E-05**	**< 9.59E-05**	**< 1.58E-04**	**3.14E-05**
Individual HAPs:													
1,1-Dichloroethane	75-34-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	7.64E-08	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1-Dichloroethene	75-35-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	5.62E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1,1-Trichloroethane (1)	71-55-6	7.92E-08	< 2.54E-07	1.85E-07	< 2.10E-07	4.25E-07	4.04E-05	1.33E-07	1.66E-07	1.31E-07	< 1.98E-07	4.25E-07	9.91E-08
1,1,2-Trichloroethane	79-00-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1,2,2-Tetrachloroethane	79-34-5	< 2.11E-07	< 2.54E-07	2.50E-07	2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2-Dibromo-3-Chloropropane	96-12-8	< 4.23E-07	< 5.08E-07	5.00E-07	4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
1,2-Dibromoethane	106-93-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2-Dichloroethane	107-06-2	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2-Dichloropropane	78-87-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2,4-Trichlorobenzene	00120-82-1	< 9.29E-09	7.76E-09	< 4.77E-09	< 9.60E-09	< 9.16E-09	< 7.92E-09	< 9.38E-09	< 9.09E-09	< 1.29E-08	< 8.99E-09	< 1.29E-08	2.09E-09
1,3-Butadiene	106-99-0	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
1,4-Dichlorobenzene	00106-46-7	4.98E-09	6.15E-09	2.50E-07	< 9.12E-09	< 4.15E-09	6.51E-07	5.62E-08	6.49E-10	8.62E-09	< 4.25E-08	2.50E-07	8.02E-08
1,4-Dioxane	123-91-1	< 8.45E-07	< 1.02E-06	1.00E-06	< 8.39E-07	< 8.49E-07	< 7.19E-07	< 7.20E-07	< 7.58E-07	< 7.94E-07	< 8.53E-07	< 1.02E-06	9.92E-08
2-Butanone	78-93-3	3.96E-07	4.34E-07	4.86E-07	8.91E-07	1.03E-06	1.48E-06	6.07E-07	1.66E-06	7.69E-07	7.84E-07	1.66E-06	3.92E-07
2-Methylphenol	00095-48-7	1.08E-08	1.39E-08	5.98E-09	< 1.18E-08	< 1.15E-08	< 1.02E-08	7.52E-09	1.95E-08	< 1.59E-08	< 1.21E-08	1.95E-08	4.07E-09
3/4-Methylphenol	00108-39-4/00106-44-5	< 1.13E-08	3.97E-08	< 5.69E-09	< 1.14E-08	< 1.10E-08	< 5.69E-09	3.16E-09	1.49E-08	< 1.52E-08	< 1.40E-08	3.97E-08	1.04E-08
4-Methyl-2-Pentanone	108-10-1	1.40E-05	1.96E-05	1.04E-05	1.26E-05	9.82E-06	9.21E-06	1.28E-05	1.63E-05	8.93E-06	1.31E-05	1.96E-05	3.33E-06
Acetonitrile	75-05-8	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Acetophenone	00098-86-2	7.50E-08	1.50E-07	8.96E-08	1.33E-07	7.05E-08	1.08E-07	1.21E-07	1.31E-07	1.22E-07	1.11E-07	1.50E-07	2.73E-08
Acrolein	107-02-8	< 4.23E-07	< 4.39E-07	4.86E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.16E-07	4.86E-07	3.62E-08
Acrylonitrile	107-13-1	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Allyl Chloride	107-05-1	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Aniline	00062-53-3	1.76E-06	2.56E-06	5.74E-07	5.73E-06	7.40E-07	4.36E-06	6.99E-07	3.36E-07	7.57E-06	< 2.50E-06	7.57E-06	2.54E-06
Benzene	71-43-2	1.98E-07	< 2.33E-07	2.71E-07	2.07E-07	4.25E-07	3.37E-07	5.40E-07	4.74E-07	4.96E-07	< 3.55E-07	5.40E-07	1.33E-07
Benzyl Chloride	100-44-7	< 5.75E-09	< 2.01E-08	5.00E-07	< 5.69E-09	< 5.54E-09	4.42E-08	< 5.56E-09	< 5.41E-09	< 7.65E-09	< 6.95E-08	5.00E-07	1.63E-07
Biphenyl	00092-52-4	9.53E-08	6.98E-08	4.93E-08	4.05E-08	4.43E-08	< 2.39E-08	6.98E-08	4.81E-08	< 7.09E-09	< 5.30E-08	9.53E-08	2.43E-08
bis(2-Ethylhexyl)phthalate	00117-81-7	1.14E-07	1.60E-06	1.36E-07	2.41E-08	< 9.48E-08	< 6.05E-08	< 7.04E-08	2.10E-08	3.98E-08	< 2.63E-07	1.60E-06	5.07E-07
Bromoform	75-25-2	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Bromomethane	74-83-9	1.14E-07	< 2.54E-07	2.50E-07	7.08E-08	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 1.84E-07	< 2.54E-07	5.92E-08
Carbon Disulfide	75-15-0	2.56E-05	9.01E-06	3.49E-06	7.34E-07	7.70E-06	4.72E-07	6.07E-06	6.87E-06	2.08E-06	7.70E-06	2.56E-05	7.28E-06
Carbon Tetrachloride	56-23-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Carbonyl Sulfide	463-58-1	1.09E-06	< 4.59E-07	< 4.94E-07	< 2.57E-07	< 2.60E-07	< 4.49E-07	< 2.20E-07	< 4.74E-07	< 2.43E-07	< 4.37E-07	1.09E-06	2.69E-07
Chlorobenzene	108-90-7	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Chloroethane	75-00-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Chloroform	67-66-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	6.52E-08	< 1.89E-07	< 1.98E-07	< 1.99E-07	< 2.54E-07	5.48E-08
Chloromethane	74-87-3	9.77E-08	< 2.54E-07	8.34E-08	8.91E-08	< 2.12E-07	4.72E-08	1.03E-07	9.24E-08	6.70E-08	< 1.25E-07	< 2.54E-07	6.42E-08

TABLE 3-5. TIRE PRESS CURING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS Numbers	Type A	Type B	Type C	Type D	Type E	Type F (1)	Type G	Type H	Type I	ALL TIRES		
		lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Cumene	98-82-8	1.21E-07	3.37E-07	5.00E-07	3.41E-07	4.51E-07	4.04E-07	2.92E-07	6.87E-07	2.08E-07	3.67E-07	6.87E-07	1.66E-07
Dibenzofuran	00132-64-9	1.16E-08	1.26E-08	9.54E-09	6.64E-09	3.94E-09	< 6.30E-09	6.32E-09	7.25E-09	7.31E-09	< 8.15E-09	1.26E-08	2.70E-09
Dimethylphthalate	00131-11-3	5.64E-09	2.66E-08	2.22E-08	9.12E-09	5.28E-08	4.06E-09	2.20E-07	1.51E-08	1.39E-08	4.57E-08	2.20E-07	6.74E-08
Di-n-butylphthalate	00084-74-2	2.07E-07	6.42E-07	6.26E-07	1.87E-07	3.14E-07	9.49E-07	1.74E-07	3.76E-07	8.73E-08	3.27E-07	6.42E-07	1.96E-07
Epichlorohydrin	106-89-8	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Ethylbenzene	100-41-4	5.28E-06	2.93E-06	1.03E-06	1.21E-05	1.27E-05	9.88E-06	6.75E-06	2.13E-05	7.19E-06	8.66E-06	2.13E-05	6.09E-06
Hexachlorobutadiene	87-68-3	< 4.23E-07	< 5.08E-07	5.00E-07	4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Isophorone	00078-59-1	< 5.09E-09	< 4.36E-09	2.29E-08	9.12E-09	6.17E-08	4.37E-09	< 4.72E-08	< 7.47E-08	< 7.31E-09	< 2.91E-08	< 7.47E-08	2.64E-08
m & p-Xylenes	108-38-3/106-42-3	1.72E-05	1.06E-05	5.64E-06	2.88E-05	2.92E-05	2.25E-05	2.00E-05	5.21E-05	2.18E-05	2.32E-05	5.21E-05	1.33E-05
Methylene Chloride	75-09-2	9.77E-07	9.35E-07	2.02E-06	7.60E-06	4.78E-06	5.39E-06	1.01E-06	2.84E-06	3.72E-06	2.99E-06	7.60E-06	2.18E-06
Naphthalene	91-20-3	6.93E-08	7.82E-08	1.50E-07	2.84E-07	2.31E-07	< 3.13E-07	1.26E-07	2.47E-07	1.44E-07	< 1.66E-07	2.84E-07	7.42E-08
n-Hexane	110-54-3	4.75E-07	1.10E-06	2.72E-07	8.65E-07	3.18E-06	2.92E-06	6.75E-06	8.05E-06	3.47E-06	< 3.02E-06	8.05E-06	2.78E-06
o-Toluidine	00095-53-4	1.82E-07	2.88E-07	1.55E-08	< 8.41E-09	1.09E-08	7.21E-09	1.30E-07	2.28E-08	< 9.82E-09	< 8.35E-08	2.88E-07	9.91E-08
o-Xylene	95-47-6	4.23E-06	2.15E-06	1.21E-06	8.13E-06	9.55E-06	7.41E-06	5.40E-06	1.14E-05	5.95E-06	< 6.00E-06	1.14E-05	3.30E-06
Phenol	00108-95-2	7.79E-08	5.07E-07	2.21E-07	< 8.53E-09	2.16E-07	1.30E-07	5.89E-07	5.86E-07	4.32E-07	< 3.30E-07	5.89E-07	2.14E-07
Propylene Oxide	75-56-9	< 4.23E-07	< 5.08E-07	2.23E-06	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 6.43E-07	2.23E-06	6.03E-07
Styrene	100-42-5	3.96E-07	3.11E-07	3.74E-07	2.88E-07	9.55E-07	3.82E-06	7.87E-07	3.08E-07	8.19E-07	5.30E-07	9.55E-07	2.57E-07
t-Butyl Methyl Ether	1634-04-4	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	2.92E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Tetrachloroethene	127-18-4	7.66E-08	< 2.54E-07	2.50E-07	< 2.10E-07	7.96E-08	2.04E-07	8.99E-08	1.18E-07	< 1.98E-07	< 1.60E-07	< 2.54E-07	7.15E-08
Toluene	108-88-3	6.60E-06	7.34E-06	2.92E-06	1.26E-05	1.30E-05	1.17E-05	1.08E-05	2.61E-05	1.07E-05	1.12E-05	2.61E-05	6.43E-06
Trichloroethene	79-01-6	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	1.12E-07	< 2.02E-07	< 2.54E-07	4.19E-08
Vinyl Acetate	108-05-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Vinyl Chloride	75-01-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08

(1) - 1,1,1-Trichloroethane for Tire F is not included in the Total HAPs or in the statistical summary due to its suspected presence from mold release agent.

TABLE 3-5A. TIRE PRESS CURING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS Numbers	Type A lb/lb-rubber	Type B lb/lb-rubber	Type C lb/lb-rubber	Type D lb/lb-rubber	Type E lb/lb-rubber	Type F (1) lb/lb-rubber	Type G lb/lb-rubber	Type H lb/lb-rubber	Type I lb/lb-rubber	ALL TIRES Mean lb/lb-rubber	ALL TIRES Max. lb/lb-rubber	ALL TIRES Std. Dev. lb/lb-rubber
TOTAL VOCs		3.37E-04	2.51E-04	1.68E-04	2.88E-04	1.64E-04	1.73E-04	2.07E-04	2.61E-04	1.87E-04	2.26E-04	3.37E-04	5.77E-05
TOTAL SPECIATED ORGANICS		< 1.48E-04	< 1.57E-04	< 1.12E-04	< 1.66E-04	< 1.71E-04	< 2.76E-04	< 2.11E-04	< 3.15E-04	< 1.91E-04	< 1.94E-04	< 3.15E-04	6.07E-05
TOTAL ORGANIC HAPs		**< 8.78E-05**	**< 7.23E-05**	**< 4.40E-05**	**< 1.01E-04**	**< 1.04E-04**	**< 1.31E-04**	**< 8.18E-05**	**< 1.58E-04**	**< 8.31E-05**	**< 9.59E-05**	**< 1.58E-04**	**3.14E-05**
Individual HAPs:													
m & p-Xylenes	108-38-3/106-42-3	1.72E-05	1.06E-05	5.64E-06	2.88E-05	2.92E-05	2.25E-05	2.00E-05	5.21E-05	2.18E-05	2.32E-05	5.21E-05	1.33E-05
4-Methyl-2-Pentanone	108-10-1	1.40E-05	1.96E-05	1.04E-05	1.26E-05	9.82E-06	9.21E-06	1.28E-05	1.63E-05	8.93E-06	1.31E-05	1.96E-05	3.33E-06
Toluene	108-88-3	6.60E-06	7.34E-06	2.92E-06	1.26E-05	1.30E-05	1.17E-05	1.08E-05	2.61E-05	1.07E-05	1.12E-05	2.61E-05	6.43E-06
Ethylbenzene	100-41-4	5.28E-06	2.93E-06	1.03E-06	1.21E-05	1.27E-05	9.88E-06	6.75E-06	2.13E-05	7.19E-06	8.66E-06	2.13E-05	6.09E-06
Carbon Disulfide	75-15-0	2.56E-05	9.01E-06	3.49E-06	7.34E-07	7.70E-06	4.72E-07	6.07E-06	6.87E-06	2.08E-06	7.70E-06	2.56E-05	7.28E-06
o-Xylene	95-47-6	4.23E-06	2.15E-06	1.21E-06	8.13E-06	9.55E-06	7.41E-06	5.40E-06	1.14E-05	5.95E-06	< 6.00E-06	1.14E-05	3.30E-06
n-Hexane	110-54-3	4.75E-07	1.10E-06	2.72E-07	8.65E-07	3.18E-06	2.92E-06	6.75E-06	8.05E-06	3.47E-06	< 3.02E-06	8.05E-06	2.78E-06
Methylene Chloride	75-09-2	9.77E-07	9.35E-07	2.02E-06	7.60E-06	4.78E-06	5.39E-06	1.01E-06	2.84E-06	3.72E-06	2.99E-06	7.60E-06	2.18E-06
Aniline	00062-53-3	1.76E-06	2.56E-06	5.74E-07	5.73E-06	7.40E-07	4.36E-06	6.99E-07	3.36E-07	7.57E-06	< 2.50E-06	7.57E-06	2.54E-06
1,4-Dioxane	123-91-1	< 8.45E-07	< 1.02E-06	1.00E-06	< 8.39E-07	< 8.49E-07	< 7.19E-07	< 7.20E-07	< 7.58E-07	< 7.94E-07	< 8.53E-07	< 1.02E-06	9.92E-08
2-Butanone	78-93-3	3.96E-07	4.34E-07	4.86E-07	8.91E-07	1.03E-06	1.48E-06	6.07E-07	1.66E-06	7.69E-07	7.84E-07	1.66E-06	3.92E-07
Propylene Oxide	75-56-9	< 4.23E-07	< 5.08E-07	2.23E-06	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 6.43E-07	2.23E-06	6.03E-07
Styrene	100-42-5	3.96E-07	3.11E-07	3.74E-07	2.88E-07	9.55E-07	3.82E-06	7.87E-07	3.08E-07	8.19E-07	5.30E-07	9.55E-07	2.57E-07
Carbonyl Sulfide	463-58-1	1.09E-06	< 4.59E-07	< 4.94E-07	< 2.57E-07	< 2.60E-07	< 4.49E-07	< 2.20E-07	< 4.74E-07	< 2.43E-07	< 4.37E-07	1.09E-06	2.69E-07
Acrylonitrile	107-13-1	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Epichlorohydrin	106-89-8	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Allyl Chloride	107-05-1	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
1,2-Dibromo-3-Chloropropane	96-12-8	< 4.23E-07	< 5.08E-07	5.00E-07	4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Acetonitrile	75-05-8	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
t-Butyl Methyl Ether	1634-04-4	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	2.92E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
1,3-Butadiene	106-99-0	< 4.23E-07	< 5.08E-07	5.00E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Hexachlorobutadiene	87-68-3	< 4.23E-07	< 5.08E-07	5.00E-07	4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.26E-07	< 5.08E-07	4.96E-08
Acrolein	107-02-8	< 4.23E-07	< 4.39E-07	4.86E-07	< 4.19E-07	< 4.25E-07	< 3.59E-07	< 3.60E-07	< 3.79E-07	< 3.97E-07	< 4.16E-07	4.86E-07	3.62E-08
Cumene	98-82-8	1.21E-07	3.37E-07	5.00E-07	3.41E-07	4.51E-07	4.04E-07	2.92E-07	6.87E-07	2.08E-07	3.67E-07	6.87E-07	1.66E-07
Benzene	71-43-2	1.98E-07	< 2.33E-07	2.71E-07	2.07E-07	4.25E-07	3.37E-07	5.40E-07	4.74E-07	4.96E-07	< 3.55E-07	5.40E-07	1.33E-07
Phenol	00108-95-2	7.79E-08	5.07E-07	2.21E-07	< 8.53E-09	2.16E-07	1.30E-07	5.89E-07	5.86E-07	4.32E-07	< 3.30E-07	5.89E-07	2.14E-07
Di-n-butylphthalate	00084-74-2	2.07E-07	6.42E-07	6.26E-07	1.87E-07	3.14E-07	9.49E-07	1.74E-07	3.76E-07	8.73E-08	3.27E-07	6.42E-07	1.96E-07
bis(2-Ethylhexyl)phthalate	00117-81-7	1.14E-07	1.60E-06	1.36E-07	2.41E-08	< 9.48E-08	< 6.05E-08	< 7.04E-08	2.10E-08	3.98E-08	< 2.63E-07	1.60E-06	5.07E-07
Vinyl Acetate	108-05-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Chloroethane	75-00-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Chlorobenzene	108-90-7	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1-Dichloroethane	75-34-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	7.64E-08	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Carbon Tetrachloride	56-23-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1-Dichloroethene	75-35-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	5.62E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1,2-Trichloroethane	79-00-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,1,2,2-Tetrachloroethane	79-34-5	< 2.11E-07	< 2.54E-07	2.50E-07	2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2-Dibromoethane	106-93-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08

TABLE 3-5A. TIRE PRESS CURING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS Numbers	Type A lb/lb-rubber	Type B lb/lb-rubber	Type C lb/lb-rubber	Type D lb/lb-rubber	Type E lb/lb-rubber	Type F (1) lb/lb-rubber	Type G lb/lb-rubber	Type H lb/lb-rubber	Type I lb/lb-rubber	ALL TIRES Mean lb/lb-rubber	ALL TIRES Max. lb/lb-rubber	ALL TIRES Std. Dev. lb/lb-rubber
1,2-Dichloroethane	107-06-2	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
1,2-Dichloropropane	78-87-5	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Vinyl Chloride	75-01-4	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Bromoform	75-25-2	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 2.13E-07	< 2.54E-07	2.48E-08
Trichloroethene	79-01-6	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	1.12E-07	< 2.02E-07	< 2.54E-07	4.19E-08
Chloroform	67-66-3	< 2.11E-07	< 2.54E-07	2.50E-07	< 2.10E-07	< 2.12E-07	< 1.80E-07	6.52E-08	< 1.89E-07	< 1.98E-07	< 1.99E-07	< 2.54E-07	5.48E-08
1,1,1-Trichloroethane (1)	71-55-6	7.92E-08	< 2.54E-07	1.85E-07	< 2.10E-07	4.25E-07	4.04E-05	1.33E-07	1.66E-07	1.31E-07	< 1.98E-07	4.25E-07	9.91E-08
Bromomethane	74-83-9	1.14E-07	< 2.54E-07	2.50E-07	7.08E-08	< 2.12E-07	< 1.80E-07	< 1.80E-07	< 1.89E-07	< 1.98E-07	< 1.84E-07	< 2.54E-07	5.92E-08
Naphthalene	91-20-3	6.93E-08	7.82E-08	1.50E-07	2.84E-07	2.31E-07	< 3.13E-07	1.26E-07	2.47E-07	1.44E-07	< 1.66E-07	2.84E-07	7.42E-08
Tetrachloroethene	127-18-4	7.66E-08	< 2.54E-07	2.50E-07	< 2.10E-07	7.96E-08	2.04E-07	8.99E-08	1.18E-07	< 1.98E-07	< 1.60E-07	< 2.54E-07	7.15E-08
Chloromethane	74-87-3	9.77E-08	< 2.54E-07	6.34E-08	8.91E-08	< 2.12E-07	4.72E-08	1.03E-07	9.24E-08	6.70E-08	< 1.25E-07	< 2.54E-07	6.42E-08
Acetophenone	00098-86-2	7.50E-08	1.50E-07	8.96E-08	1.33E-07	7.05E-08	1.08E-07	1.21E-07	1.31E-07	1.22E-07	1.11E-07	1.50E-07	2.73E-08
o-Toluidine	00095-53-4	1.82E-07	2.88E-07	1.55E-08	< 8.41E-09	1.09E-08	7.21E-09	1.30E-07	2.28E-08	< 9.82E-09	< 8.35E-08	2.88E-07	9.91E-08
Benzyl Chloride	100-44-7	< 5.75E-09	< 2.01E-08	5.00E-07	< 5.69E-09	< 5.54E-09	4.42E-08	< 5.56E-09	< 5.41E-09	< 7.85E-09	< 6.95E-08	5.00E-07	1.63E-07
Biphenyl	00092-52-4	9.53E-08	6.98E-08	4.93E-08	4.05E-08	4.43E-08	< 2.39E-08	6.98E-08	4.81E-08	< 7.09E-09	< 5.30E-08	9.53E-08	2.43E-08
Dimethylphthalate	00131-11-3	5.64E-09	2.66E-08	2.22E-08	9.12E-09	5.28E-08	4.06E-09	2.20E-07	1.51E-08	1.39E-08	4.57E-08	2.20E-07	6.74E-08
1,4-Dichlorobenzene	00106-46-7	4.98E-09	6.15E-09	2.50E-07	< 9.12E-09	< 4.15E-09	6.51E-07	5.62E-08	6.49E-10	8.62E-09	< 4.25E-08	2.50E-07	8.02E-08
Isophorone	00078-59-1	< 5.09E-09	< 4.36E-09	2.29E-08	9.12E-09	6.17E-08	4.37E-09	< 4.72E-08	< 7.47E-08	< 7.31E-09	< 2.91E-08	< 7.47E-08	2.64E-08
3/4-Methylphenol	00108-39-4/00106-44-5	< 1.13E-08	3.97E-08	< 5.69E-09	< 1.14E-08	< 1.10E-08	< 5.89E-09	3.16E-09	1.49E-08	< 1.52E-08	< 1.40E-08	3.97E-08	1.04E-08
2-Methylphenol	00095-48-7	1.08E-08	1.39E-08	5.98E-09	< 1.18E-08	< 1.15E-08	< 1.02E-08	7.52E-09	1.95E-08	< 1.59E-08	< 1.21E-08	1.95E-08	4.07E-09
1,2,4-Trichlorobenzene	00120-82-1	< 9.29E-09	7.76E-09	< 4.77E-09	< 9.60E-09	< 9.16E-09	< 7.92E-09	< 9.38E-09	< 9.09E-09	< 1.29E-08	< 8.99E-09	< 1.29E-08	2.09E-09
Dibenzofuran	00132-64-9	1.16E-08	1.26E-08	9.54E-09	6.64E-09	3.94E-09	< 6.30E-09	6.32E-09	7.25E-09	7.31E-09	< 8.15E-09	1.26E-08	2.70E-09

(1) - 1,1,1-Trichloroethane for Tire F is not included in the Total HAPs or in the statistical summary due to its suspected presence from mold release agent.

TABLE 3-6. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED ALPHABETICALLY)

Pollutant Category	CAS #	Cmpd. #4 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd. #8 lb/lb-rubber	Cmpd. #9 (1) lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #11 lb/lb-rubber
TOTAL VOCs		1.61E-04	1.78E-04	1.33E-04	5.42E-05	1.63E-04	3.61E-04	9.32E-05
TOTAL SPECIATED ORGANICS		< 5.62E-04	< 5.54E-04	< 8.27E-04	< 6.68E-04	< 1.22E-03	< 8.17E-04	< 3.55E-04
TOTAL ORGANIC HAPs		**< 2.89E-04**	**< 1.98E-04**	**< 1.74E-04**	**< 5.25E-04**	**< 2.13E-04**	**< 1.35E-04**	**< 1.46E-04**
Individual HAPs:								
1,1-Dichloroethane	75-34-3	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.54E-07	< 1.06E-07	< 1.02E-07	< 1.95E-07
1,1-Dichloroethene	75-35-4	< 1.51E-07	< 2.04E-07	< 1.11E-07	< 5.59E-07	< 1.10E-07	< 1.04E-07	< 1.97E-07
1,1,1-Trichloroethane	71-55-6	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.06E-07	< 1.01E-07	< 1.95E-07
1,1,2-Trichloroethane	79-00-5	< 1.51E-07	< 2.04E-07	< 1.12E-07	< 5.57E-07	< 1.09E-07	< 1.04E-07	< 1.98E-07
1,1,2,2-Tetrachloroethane	79-34-5	< 1.51E-07	< 2.03E-07	< 1.12E-07	< 5.56E-07	< 1.09E-07	< 1.04E-07	< 1.97E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
1,2-Dibromoethane	00106-93-4	< 1.47E-07	< 1.99E-07	< 1.07E-07	< 5.50E-07	< 1.03E-07	< 9.96E-08	< 1.93E-07
1,2-Dichloroethane	107-06-2	< 1.50E-07	< 2.02E-07	< 1.10E-07	< 5.55E-07	< 1.07E-07	< 1.03E-07	< 1.95E-07
1,2-Dichloropropane	78-87-5	< 1.50E-07	< 2.02E-07	< 1.11E-07	< 5.55E-07	< 1.08E-07	< 1.03E-07	< 1.96E-07
1,2-Epoxybutane	106-88-7	< 1.17E-08	< 1.06E-08	< 1.11E-08	< 1.78E-08	< 1.80E-08	< 1.15E-08	< 1.30E-08
1,2,4-Trichlorobenzene	120-82-1	< 1.56E-08	< 1.52E-08	< 1.21E-08	< 3.61E-08	< 8.92E-08	< 7.79E-08	< 1.52E-08
1,3-Butadiene	106-99-0	1.73E-06	< 2.13E-06	7.52E-07	< 3.59E-08	< 5.17E-08	< 8.77E-07	< 1.55E-07
1,4-Dichlorobenzene	00106-46-7	< 1.47E-07	< 1.99E-07	< 1.07E-07	< 5.50E-07	< 9.99E-08	1.01E-07	< 1.93E-07
1,4-Dioxane	00123-91-1	< 5.89E-07	< 7.96E-07	< 4.28E-07	< 2.20E-06	< 4.10E-07	< 3.98E-07	< 7.72E-07
1,4-Phenylenediamine	106-50-3	< 2.27E-08	< 2.61E-08	< 2.20E-08	< 5.59E-08	< 1.43E-07	< 1.08E-07	< 1.80E-08
2-Butanone	78-93-3	1.77E-06	2.12E-06	4.55E-07	3.43E-06	2.45E-06	1.42E-06	1.38E-06
2-Chloroacetophenone	532-27-4	< 7.00E-09	2.46E-07	< 6.60E-09	< 1.98E-08	< 4.69E-08	3.45E-08	8.39E-07
2-Methylphenol	95-48-7	< 2.15E-08	< 1.09E-08	< 2.04E-08	< 2.94E-08	< 1.05E-07	< 9.18E-08	1.94E-08
2,4-Dinitrophenol	51-28-5	< 6.35E-08	< 6.25E-08	< 4.72E-08	< 1.21E-07	< 3.20E-07	< 2.86E-07	< 1.01E-07
2,4-Dinitrotoluene	121-14-2	< 2.03E-08	< 1.58E-08	< 1.38E-08	< 3.36E-08	< 9.18E-08	< 8.25E-08	< 2.15E-08
2,4,5-Trichlorophenol	95-95-4	< 2.28E-08	< 2.12E-08	< 1.56E-08	< 4.44E-08	< 1.16E-07	< 1.04E-07	< 2.42E-08
2,4,6-Trichlorophenol	88-06-2	< 2.42E-08	< 2.27E-08	< 1.64E-08	< 4.93E-08	< 1.29E-07	< 1.16E-07	< 2.49E-08
3,3'-Dichlorobenzidine	91-94-1	< 3.02E-08	< 1.37E-08	< 2.89E-08	< 2.74E-08	< 8.17E-08	< 6.99E-08	< 3.65E-08
3,3'-Dimethoxybenzidine	119-90-4	< 1.80E-08	< 2.40E-08	< 1.51E-08	< 4.90E-08	< 1.53E-07	< 1.15E-07	< 1.54E-08
3,3'-Dimethylbenzidine	119-93-7	< 5.94E-09	< 8.42E-09	< 4.98E-09	< 1.75E-08	< 5.07E-08	< 3.84E-08	< 5.21E-09
3/4-Methylphenol	108-39-4/106-44-5	1.48E-08	< 2.12E-08	< 1.88E-08	< 2.35E-08	< 9.80E-08	< 8.53E-08	3.28E-08
4-Aminobiphenyl	92-67-1	< 5.27E-09	< 6.59E-09	< 4.25E-09	< 1.42E-08	< 3.79E-08	< 2.78E-08	< 4.23E-09
4-Methyl-2-pentanone	108-10-1	1.61E-04	< 6.61E-07	7.27E-05	< 5.55E-07	1.24E-05	< 8.40E-07	< 1.96E-07
4-Nitrobiphenyl	92-93-3	< 8.85E-09	< 1.16E-08	< 7.29E-09	< 2.53E-08	< 6.59E-08	< 4.80E-08	< 7.77E-09
4-Nitrophenol	100-02-7	< 4.38E-08	< 3.11E-08	< 3.04E-08	< 6.88E-08	< 1.93E-07	< 1.74E-07	< 4.89E-08
4,4'-Methylenedianiline	101-77-9	< 1.15E-08	< 1.72E-08	< 9.68E-09	< 3.46E-08	< 9.62E-08	< 7.24E-08	< 9.73E-09
4,6-Dinitro-2-methylphenol	534-52-1	< 4.08E-08	< 3.66E-08	< 2.99E-08	< 7.35E-08	< 1.83E-07	< 1.61E-07	< 5.69E-08
Acetaldehyde (2)	00075-07-0		1.83E-06		2.74E-07			1.02E-07
Acetonitrile	75-05-8	< 2.95E-07	1.60E-06	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
Acetophenone (2)	00098-86-2	4.88E-06		9.12E-06		1.33E-04	8.80E-05	
Acrolein	00107-02-8	< 2.95E-07	< 2.82E-07	< 2.14E-07	< 1.10E-06	< 3.59E-07	< 1.99E-07	< 3.86E-07
Acrylonitrile	107-13-1	< 3.10E-07	< 4.59E-07	< 2.30E-07	< 1.17E-06	< 2.32E-07	< 2.16E-07	< 3.99E-07
Allyl chloride	107-05-1	< 3.01E-07	< 4.04E-07	< 2.21E-07	< 1.11E-06	< 2.17E-07	< 2.06E-07	< 3.92E-07
Aniline	62-53-3	1.04E-05	8.98E-06	2.58E-05	8.45E-07	2.67E-06	1.57E-07	2.21E-06
a,a,a-Trichlorotoluene	98-07-7	< 1.04E-08	< 1.27E-08	< 9.86E-09	< 3.09E-08	< 7.70E-08	< 5.85E-08	< 8.81E-09
Benzene	71-43-2	1.16E-05	5.39E-06	9.09E-06	2.23E-05	4.39E-06	1.46E-06	1.66E-06
Benzidine	92-87-5	< 5.75E-09	< 3.72E-07	< 4.93E-09	5.06E-08	< 5.07E-08	< 3.69E-08	< 6.33E-09
Benzyl Chloride	00100-44-7	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
Biphenyl	92-52-4	6.99E-08	2.70E-07	3.84E-07	4.22E-08	1.25E-07	< 4.13E-08	5.48E-09
bis(2-Chloroethyl)ether	111-44-4	< 2.32E-08	< 2.43E-08	< 2.22E-08	< 5.31E-08	< 1.11E-07	< 9.69E-08	< 2.12E-08
bis(2-Ethylhexyl)phthalate	117-81-7	4.42E-07	3.30E-07	2.37E-06	3.68E-07	1.74E-07	1.90E-07	7.48E-07
Bromoform	75-25-2	< 1.51E-07	< 2.03E-07	< 1.12E-07	< 5.57E-07	< 1.10E-07	< 1.04E-07	< 1.98E-07
Bromomethane	74-83-9	< 1.53E-07	< 2.08E-07	< 1.13E-07	< 5.65E-07	< 1.12E-07	< 1.05E-07	< 1.99E-07
Carbon disulfide	75-15-0	4.77E-07	2.17E-06	6.07E-07	3.84E-04	5.81E-06	1.39E-06	8.93E-05
Carbon tetrachloride	56-23-5	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.05E-07	< 1.01E-07	< 1.82E-07
Carbonyl Sulfide	463-58-1	4.58E-07	4.66E-07	5.48E-07	1.97E-05	8.15E-07	5.18E-07	2.02E-06
Chlorobenzene	108-90-7	1.58E-07	< 2.00E-07	< 1.08E-07	< 5.52E-07	< 1.04E-07	< 1.01E-07	< 1.94E-07
Chloroethane	75-00-3	< 1.53E-07	< 2.06E-07	< 1.13E-07	< 5.63E-07	< 1.12E-07	< 1.06E-07	< 1.98E-07
Chloroform	67-66-3	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.54E-07	< 1.06E-07	< 1.02E-07	< 1.95E-07
Chloromethane	74-87-3	< 1.52E-07	< 2.05E-07	< 1.59E-07	< 5.60E-07	< 3.14E-07	< 1.86E-07	< 1.99E-07
Chloroprene	126-99-8	< 2.16E-09	< 2.13E-09	< 2.34E-09	< 4.55E-09	< 3.81E-09	< 2.38E-09	3.28E-07
Cumene	98-82-8	6.75E-08	3.30E-08	6.42E-08	4.97E-08	1.30E-06	8.04E-07	7.00E-09
Dibenzofuran	132-64-9	1.75E-08	4.15E-08	< 1.22E-08	< 7.19E-09	< 2.92E-08	< 2.80E-08	< 6.15E-09

TABLE 3-6. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED ALPHABETICALLY)

Pollutant Category	CAS #	Cmpd. #4 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd. #8 lb/lb-rubber	Cmpd. #9 (1) lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #11 lb/lb-rubber
Dimethylaminoazobenzene	60-11-7	< 7.69E-09	< 1.13E-08	< 6.67E-09	< 2.24E-08	< 6.01E-08	< 4.38E-08	< 7.25E-09
Dimethylphthalate	131-11-3	< 7.06E-09	< 5.89E-09	< 4.64E-09	6.90E-09	< 3.47E-08	< 3.12E-08	1.05E-08
Di-n-butylphthalate	84-74-2	< 4.39E-09	4.34E-09	2.16E-08	< 2.16E-09	6.37E-08	9.69E-08	1.76E-08
Epichlorohydrin	00106-89-8	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 3.57E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
Ethyl acrylate	140-88-5	< 2.59E-09	< 2.21E-09	< 3.22E-09	< 3.73E-09	< 4.86E-09	< 2.97E-09	< 2.78E-09
Ethylbenzene	100-41-4	4.77E-06	1.75E-06	2.91E-06	3.90E-06	3.31E-06	3.02E-06	< 8.17E-08
Ethylene dibromide	106-93-4	< 2.81E-09	< 3.49E-09	< 3.19E-09	< 5.43E-09	< 4.65E-09	< 2.95E-09	< 3.92E-09
Hexachlorobenzene	118-74-1	< 1.85E-08	< 1.82E-08	< 1.26E-08	< 3.88E-08	< 1.04E-07	< 9.20E-08	< 2.16E-08
Hexachlorobutadiene	00087-68-3	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 3.96E-07	< 5.07E-07	< 1.45E-07
Hexachlorocyclopentadiene	77-47-4	< 2.32E-08	< 2.83E-08	< 1.64E-08	< 6.51E-08	< 1.60E-07	< 1.45E-07	< 2.90E-08
Hexachloroethane	67-72-1	< 2.71E-08	< 3.71E-08	< 2.48E-08	< 6.50E-08	< 1.50E-07	< 1.30E-07	< 7.50E-08
Hydroquinone	123-31-9	< 1.42E-08	< 2.09E-08	< 1.37E-08	< 4.96E-08	< 1.17E-07	< 8.63E-08	< 1.45E-08
Iodomethane	74-88-4	< 1.23E-09	< 1.79E-09	< 1.31E-09	< 3.20E-09	< 2.14E-09	< 1.34E-09	< 1.73E-09
Isooctane	540-84-1	4.78E-07	7.27E-07	2.88E-07	9.76E-07	5.54E-08	2.80E-07	7.39E-06
Isophorone	78-59-1	2.37E-07	2.00E-07	< 7.76E-09	< 2.13E-08	< 5.71E-08	< 4.30E-08	< 8.98E-09
Methyl methacrylate	80-62-6	< 7.16E-09	< 6.27E-09	< 8.64E-09	< 1.01E-08	< 1.31E-08	< 7.98E-09	< 7.59E-09
Methylene bis-chloroaniline	101-14-4	< 1.99E-08	< 2.73E-08	< 1.68E-08	< 5.75E-08	< 1.72E-07	< 1.30E-07	< 1.76E-08
Methylene chloride	75-09-2	9.72E-06	7.34E-05	2.26E-06	3.08E-06	2.15E-06	4.41E-06	5.32E-07
m-/p-Xylene	108-38-3/106-42-3	4.48E-05	6.19E-05	9.71E-06	1.95E-05	1.28E-05	9.79E-06	2.75E-07
Naphthalene	91-20-3	3.02E-07	2.89E-07	9.83E-07	2.41E-07	1.76E-07	1.69E-07	6.18E-08
n-Hexane	110-54-3	1.85E-06	3.05E-06	1.08E-06	3.94E-06	1.22E-06	1.88E-06	9.58E-07
Nitrobenzene	98-95-3	< 1.79E-08	< 1.59E-08	< 1.44E-08	< 3.67E-08	< 8.76E-08	< 7.63E-08	< 1.54E-08
n-Nitrosodimethylamine	62-75-9	< 4.79E-08	< 4.65E-08	< 5.30E-08	< 1.11E-07	< 2.23E-07	< 1.73E-07	< 2.82E-08
n-Nitrosomorpholine	59-89-2	< 2.38E-08	< 3.36E-08	< 2.50E-08	< 7.24E-08	< 1.47E-07	< 1.13E-07	< 1.93E-08
N,N-Dimethylaniline	121-69-7	< 9.98E-09	< 1.22E-08	< 9.52E-09	2.76E-08	< 6.85E-08	< 5.19E-08	< 8.02E-09
o-Anisidine	90-04-0	< 1.83E-08	< 2.29E-08	< 1.71E-08	< 5.45E-08	< 1.33E-07	< 1.01E-07	< 1.57E-08
o-Toluidine	95-53-4	2.14E-07	< 1.63E-08	1.53E-05	< 3.58E-08	< 7.53E-08	< 5.68E-08	< 9.82E-09
o-Xylene	95-47-6	4.97E-06	4.22E-06	3.31E-06	4.81E-06	1.25E-05	2.93E-06	2.01E-05
Pentachloronitrobenzene	82-68-8	< 3.49E-08	< 4.33E-08	< 2.94E-08	< 9.27E-08	< 2.65E-07	< 1.90E-07	< 3.04E-08
Pentachlorophenol	87-86-5	< 3.02E-08	4.36E-07	< 2.28E-08	< 6.27E-08	< 1.58E-07	< 1.39E-07	3.85E-07
Phenol	108-95-2	< 1.75E-08	< 1.19E-07	< 1.65E-08	< 6.45E-08	1.42E-06	8.81E-07	< 4.04E-08
Propylene Oxide	00075-56-9	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 2.14E-07
Styrene	100-42-5	1.31E-06	7.18E-07	3.28E-06	< 3.56E-07	1.27E-06	4.38E-07	2.93E-08
tert-Butyl methyl ether	1634-04-4	3.09E-07	2.84E-07	2.34E-07	1.12E-06	< 2.08E-07	< 3.02E-07	1.13E-06
Tetrachloroethene	127-18-4	< 1.53E-07	< 2.02E-07	< 1.10E-07	< 5.56E-07	< 1.10E-07	< 1.02E-07	< 1.96E-07
Toluene	108-88-3	2.08E-05	1.56E-05	7.09E-06	2.79E-05	5.01E-06	6.91E-06	7.45E-06
Trichloroethene	79-01-6	< 1.49E-07	< 2.05E-07	< 1.09E-07	< 5.55E-07	< 1.06E-07	< 1.02E-07	< 1.96E-07
Trifluralin	1582-09-8	< 2.42E-08	< 3.44E-08	< 2.28E-08	< 7.81E-08	< 2.07E-07	< 1.60E-07	< 2.03E-08
Vinyl acetate	108-05-4	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.05E-07	< 1.01E-07	< 1.95E-07
Vinyl Bromide	593-60-2	< 3.95E-09	< 6.79E-09	< 4.13E-09	< 1.17E-08	< 6.65E-09	< 4.26E-09	< 4.17E-09
Vinyl Chloride	75-01-4	< 1.52E-07	< 2.04E-07	< 1.12E-07	< 5.60E-07	< 1.11E-07	< 1.05E-07	< 1.97E-07

(1) - Extruded EPDM (Peroxide-cure).
(2) - Tentatively Identified Compound (TIC) - No data are given if not detected.

TABLE 3-6. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED ALPHABETICALLY)

Pollutant Category	CAS #	Cmpd. #15 lb/lb-rubber	Cmpd. #18 lb/lb-rubber	Cmpd. #21 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		7.34E-05	9.27E-05	2.26E-04	1.11E-04	1.50E-04	3.61E-04	8.24E-05
TOTAL SPECIATED ORGANICS		< 5.08E-04	< 2.09E-03	< 1.96E-03	< 2.37E-04	< 8.91E-04	< 2.09E-03	5.90E-04
TOTAL ORGANIC HAPs		**< 3.36E-04**	**< 1.17E-03**	**< 4.74E-04**	**< 1.26E-04**	**< 3.44E-04**	**< 1.17E-03**	**2.90E-04**
Individual HAPs:								
1,1-Dichloroethane	75-34-3	< 2.82E-07	< 5.66E-07	< 4.21E-07	< 6.28E-08	< 2.50E-07	< 5.66E-07	1.75E-07
1,1-Dichloroethene	75-35-4	< 2.83E-07	< 5.67E-07	< 4.23E-07	< 6.45E-08	< 2.52E-07	< 5.67E-07	1.75E-07
1,1,1-Trichloroethane	71-55-6	< 2.82E-07	< 5.66E-07	< 4.21E-07	< 6.25E-08	< 2.50E-07	< 5.66E-07	1.75E-07
1,1,2-Trichloroethane	79-00-5	< 2.84E-07	< 5.68E-07	< 4.24E-07	< 6.46E-08	< 2.52E-07	< 5.68E-07	1.75E-07
1,1,2,2-Tetrachloroethane	79-34-5	< 2.84E-07	< 5.67E-07	< 4.23E-07	< 6.47E-08	< 2.52E-07	< 5.67E-07	1.74E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.95E-07	< 1.13E-06	3.49E-07
1,2-Dibromoethane	00106-93-4	< 2.80E-07	< 5.64E-07	< 4.19E-07	< 6.08E-08	< 2.47E-07	< 5.64E-07	1.75E-07
1,2-Dichloroethane	107-06-2	< 2.82E-07	< 5.66E-07	< 4.22E-07	< 6.33E-08	< 2.50E-07	< 5.66E-07	1.75E-07
1,2-Dichloropropane	78-87-5	< 2.83E-07	< 5.66E-07	< 4.22E-07	< 6.40E-08	< 2.51E-07	< 5.66E-07	1.74E-07
1,2-Epoxybutane	106-88-7	< 2.49E-08	< 9.22E-09	< 1.53E-08	< 9.81E-09	< 1.39E-08	< 2.49E-08	4.52E-09
1,2,4-Trichlorobenzene	120-82-1	< 1.21E-08	< 1.15E-08	< 2.48E-08	< 1.52E-08	< 2.95E-08	< 8.92E-08	2.65E-08
1,3-Butadiene	106-99-0	< 2.01E-08	< 6.25E-08	< 1.74E-08	< 3.34E-07	< 5.61E-07	< 2.13E-06	7.10E-07
1,4-Dichlorobenzene	00106-46-7	< 2.50E-07	< 5.64E-07	< 4.19E-07	< 6.08E-08	< 2.45E-07	< 5.64E-07	1.74E-07
1,4-Dioxane	00123-91-1	< 1.12E-06	< 2.26E-06	< 1.68E-06	< 2.43E-07	< 9.90E-07	< 2.26E-06	6.98E-07
1,4-Phenylenediamine	106-50-3	< 2.29E-08	< 2.21E-08	< 2.94E-08	< 3.04E-08	< 4.55E-08	< 1.43E-07	3.97E-08
2-Butanone	78-93-3	< 1.08E-06	1.60E-06	1.93E-05	8.71E-07	< 3.26E-06	1.93E-05	5.13E-06
2-Chloroacetophenone	532-27-4	< 7.24E-09	< 6.40E-09	< 8.98E-09	< 8.99E-09	< 1.12E-07	8.39E-07	2.39E-07
2-Methylphenol	95-48-7	< 1.49E-08	1.55E-08	< 3.53E-08	< 2.10E-08	< 3.50E-08	< 1.05E-07	3.08E-08
2,4-Dinitrophenol	51-28-5	< 7.05E-08	< 4.24E-08	< 1.30E-07	< 6.49E-08	< 1.19E-07	< 3.20E-07	9.11E-08
2,4-Dinitrotoluene	121-14-2	< 1.51E-08	< 1.28E-08	< 2.87E-08	< 1.78E-08	< 3.22E-08	< 9.18E-08	2.67E-08
2,4,5-Trichlorophenol	95-95-4	< 1.79E-08	< 1.43E-08	< 3.24E-08	< 2.03E-08	< 3.94E-08	< 1.16E-07	3.44E-08
2,4,6-Trichlorophenol	88-06-2	< 1.81E-08	< 1.59E-08	< 3.42E-08	< 2.21E-08	< 4.30E-08	< 1.29E-07	3.86E-08
3,3'-Dichlorobenzidine	91-94-1	< 2.19E-08	< 9.80E-09	< 5.78E-08	< 1.38E-08	< 3.56E-08	< 8.17E-08	2.28E-08
3,3'-Dimethoxybenzidine	119-90-4	< 3.32E-08	< 1.64E-08	< 4.01E-08	< 2.36E-08	< 4.57E-08	< 1.53E-07	4.36E-08
3,3'-Dimethylbenzidine	119-93-7	< 1.09E-08	< 5.26E-09	< 1.36E-08	< 7.94E-09	< 1.54E-08	< 5.07E-08	1.45E-08
3/4-Methylphenol	108-39-4/106-44-5	< 1.45E-08	< 1.43E-08	< 3.32E-08	< 1.94E-08	< 3.42E-08	< 9.80E-08	2.79E-08
4-Aminobiphenyl	92-67-1	< 6.12E-09	< 4.78E-09	< 7.12E-09	< 1.39E-08	< 1.20E-08	< 3.79E-08	1.06E-08
4-Methyl-2-pentanone	108-10-1	< 2.83E-07	5.72E-05	< 4.22E-07	6.46E-05	< 3.37E-05	1.61E-04	4.88E-05
4-Nitrobiphenyl	92-93-3	< 1.21E-08	< 8.20E-09	< 1.40E-08	< 2.38E-08	< 2.12E-08	< 6.59E-08	1.82E-08
4-Nitrophenol	100-02-7	< 3.24E-08	< 2.45E-08	< 6.80E-08	< 3.35E-08	< 6.81E-08	< 1.93E-07	5.64E-08
4,4'-Methylenedianiline	101-77-9	< 1.99E-08	< 1.05E-08	< 2.44E-08	< 1.52E-08	< 2.92E-08	< 9.62E-08	2.74E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 4.14E-08	< 2.39E-08	< 8.52E-08	< 7.32E-08	< 7.32E-08	< 1.83E-07	5.03E-08
Acetaldehyde (2)	00075-07-0			1.18E-06		8.47E-07	1.83E-06	5.87E-07
Acetonitrile	75-05-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 6.04E-07	1.60E-06	4.68E-07
Acetophenone (2)	00098-86-2				7.36E-06	4.85E-05	1.33E-04	4.30E-05
Acrolein	00107-02-8	< 5.39E-07	< 1.13E-06	< 4.44E-06	< 1.22E-07	< 8.24E-07	< 4.44E-06	1.19E-06
Acrylonitrile	107-13-1	< 5.76E-07	< 1.14E-06	< 8.52E-07	< 1.36E-07	< 5.20E-07	< 1.17E-06	3.55E-07
Allyl chloride	107-05-1	< 5.66E-07	< 1.13E-06	< 8.44E-07	< 1.28E-07	< 5.02E-07	< 1.13E-06	3.49E-07
Aniline	62-53-3	2.69E-08	1.68E-06	1.48E-08	8.27E-06	< 5.55E-06	2.58E-05	7.39E-06
a,a,a-Trichlorotoluene	98-07-7	< 9.20E-09	< 9.27E-09	< 1.20E-08	< 1.30E-08	< 2.29E-08	< 7.70E-08	2.23E-08
Benzene	71-43-2	5.26E-06	3.54E-07	5.25E-06	1.14E-05	7.12E-06	2.23E-05	6.03E-06
Benzidine	92-87-5	< 1.19E-08	< 5.70E-09	< 1.56E-08	< 8.89E-09	< 5.17E-08	< 3.72E-07	1.03E-07
Benzyl Chloride	00100-44-7	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.95E-07	< 1.13E-06	3.49E-07
Biphenyl	92-52-4	1.19E-08	7.23E-09	7.44E-09	3.99E-07	< 1.24E-07	3.99E-07	1.46E-07
bis(2-Chloroethyl)ether	111-44-4	< 1.45E-08	< 1.63E-08	< 3.50E-08	< 2.21E-08	< 4.00E-08	< 1.11E-07	3.20E-08
bis(2-Ethylhexyl)phthalate	117-81-7	1.00E-06	4.54E-08	2.20E-06	1.75E-07	< 7.32E-07	2.37E-06	7.80E-07
Bromoform	75-25-2	< 2.85E-07	< 5.67E-07	< 4.24E-07	< 6.49E-08	< 2.52E-07	< 5.67E-07	1.75E-07
Bromomethane	74-83-9	< 2.86E-07	< 5.69E-07	< 4.26E-07	< 6.58E-08	< 2.55E-07	< 5.69E-07	1.76E-07
Carbon disulfide	75-15-0	1.47E-04	1.06E-03	1.02E-06	1.86E-06	1.54E-04	1.06E-03	3.08E-04
Carbon tetrachloride	56-23-5	5.67E-05	< 5.65E-07	6.00E-07	< 6.24E-08	< 5.39E-06	5.67E-05	1.62E-05
Carbonyl Sulfide	463-58-1	8.80E-07	9.17E-06	1.42E-07	4.36E-07	3.19E-06	1.97E-05	5.76E-06
Chlorobenzene	108-90-7	< 2.81E-07	5.74E-07	< 4.20E-07	< 6.18E-08	< 2.50E-07	5.74E-07	1.76E-07
Chloroethane	75-00-3	< 2.86E-07	< 5.68E-07	< 4.25E-07	< 6.61E-08	< 2.54E-07	< 5.68E-07	1.75E-07
Chloroform	67-66-3	1.64E-05	< 5.66E-07	5.98E-07	< 6.26E-08	< 1.73E-06	1.64E-05	4.64E-06
Chloromethane	74-87-3	< 2.85E-07	< 5.67E-07	< 4.44E-06	< 1.61E-07	< 6.57E-07	< 4.44E-06	1.21E-06
Chloroprene	126-99-8	< 2.02E-09	< 1.46E-09	< 2.04E-09	< 2.05E-09	< 3.21E-08	3.28E-07	9.37E-08
Cumene	98-82-8	3.83E-08	7.49E-08	1.26E-07	7.17E-08	< 2.40E-07	1.30E-06	3.99E-07
Dibenzofuran	132-64-9	5.64E-09	< 4.12E-09	< 8.20E-09	< 5.82E-09	< 1.50E-08	4.15E-08	1.19E-08

TABLE 3-6. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED ALPHABETICALLY)

Pollutant Category	CAS #	Cmpd. #15 lb/lb-rubber	Cmpd. #18 lb/lb-rubber	Cmpd. #21 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Dimethylaminoazobenzene	60-11-7	< 1.37E-08	< 7.12E-09	< 1.75E-08	< 1.02E-08	< 1.89E-08	< 6.01E-08	1.66E-08
Dimethylphthalate	131-11-3	8.73E-09	< 4.69E-09	2.28E-08	< 6.62E-09	< 1.31E-08	< 3.47E-08	1.05E-08
Di-n-butylphthalate	84-74-2	4.51E-07	2.91E-09	2.12E-07	3.42E-07	< 1.11E-07	4.51E-07	1.49E-07
Epichlorohydrin	00106-89-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 7.19E-07	< 3.57E-06	9.46E-07
Ethyl acrylate	140-88-5	< 3.18E-09	< 1.68E-09	< 3.02E-09	< 2.73E-09	< 3.00E-09	< 4.86E-09	7.81E-10
Ethylbenzene	100-41-4	8.91E-06	1.39E-07	3.24E-06	1.30E-06	< 3.03E-06	8.91E-06	2.34E-06
Ethylene dibromide	106-93-4	< 3.50E-09	< 2.19E-09	< 4.27E-09	< 2.71E-09	< 3.56E-09	< 5.43E-09	9.05E-10
Hexachlorobenzene	118-74-1	< 1.61E-08	< 1.26E-08	< 3.33E-08	< 3.63E-08	< 3.67E-08	< 1.04E-07	3.03E-08
Hexachlorobutadiene	00087-68-3	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 5.18E-07	< 1.13E-06	3.42E-07
Hexachlorocyclopentadiene	77-47-4	< 2.00E-08	< 1.85E-08	< 4.12E-08	< 2.74E-08	< 5.22E-08	< 1.60E-07	4.91E-08
Hexachloroethane	67-72-1	4.94E-07	< 2.04E-08	6.02E-08	< 2.81E-08	< 1.01E-07	4.94E-07	1.31E-07
Hydroquinone	123-31-9	< 1.74E-08	< 1.48E-08	< 2.31E-08	< 2.18E-08	< 3.58E-08	< 1.17E-07	3.32E-08
Iodomethane	74-88-4	< 1.47E-09	< 8.64E-10	< 2.03E-09	< 1.15E-09	< 1.66E-09	< 3.20E-09	6.11E-10
Isooctane	540-84-1	1.07E-06	< 4.06E-09	3.84E-06	1.57E-07	< 1.39E-06	7.39E-06	2.16E-06
Isophorone	78-59-1	< 6.94E-09	2.35E-08	< 1.37E-08	3.45E-07	< 8.77E-08	3.45E-07	1.12E-07
Methyl methacrylate	80-62-6	< 8.34E-09	< 4.81E-09	< 8.25E-09	< 7.35E-09	< 8.15E-09	< 1.31E-08	2.02E-09
Methylene bis-chloroaniline	101-14-4	< 3.70E-08	< 1.80E-08	< 4.62E-08	< 2.69E-08	< 5.18E-08	< 1.72E-07	4.92E-08
Methylene chloride	75-09-2	1.18E-05	4.68E-07	4.88E-05	1.21E-05	1.53E-05	7.34E-05	2.26E-05
m-/p-Xylene	108-38-3/106-42-3	3.24E-05	1.43E-06	1.24E-05	4.74E-06	1.91E-05	6.19E-05	1.86E-05
Naphthalene	91-20-3	2.99E-07	9.23E-08	9.41E-08	3.36E-07	2.77E-07	9.83E-07	2.41E-07
n-Hexane	110-54-3	< 1.83E-06	< 2.77E-08	1.96E-06	4.03E-07	< 1.65E-06	3.94E-06	1.07E-06
Nitrobenzene	98-95-3	< 1.19E-08	< 1.26E-08	< 2.34E-08	< 1.63E-08	< 2.99E-08	< 8.76E-08	2.55E-08
n-Nitrosodimethylamine	62-75-9	< 3.60E-08	< 4.21E-08	< 4.73E-08	< 5.33E-08	< 7.83E-08	< 2.23E-07	6.10E-08
n-Nitrosomorpholine	59-89-2	< 1.70E-08	< 2.04E-08	< 2.50E-08	< 2.77E-08	< 4.77E-08	< 1.47E-07	4.21E-08
N,N-Dimethylaniline	121-69-7	< 9.14E-09	< 9.06E-09	< 1.16E-08	< 1.26E-08	< 2.09E-08	< 6.85E-08	1.95E-08
o-Anisidine	90-04-0	< 1.72E-08	< 1.68E-08	< 2.23E-08	< 2.42E-08	< 4.03E-08	< 1.33E-07	3.83E-08
o-Toluidine	95-53-4	< 1.01E-08	6.19E-08	< 1.46E-08	1.66E-07	< 1.45E-06	1.53E-05	4.37E-06
o-Xylene	95-47-6	7.34E-06	4.14E-08	9.16E-05	2.93E-06	< 1.41E-05	9.16E-05	2.51E-05
Pentachloronitrobenzene	82-68-8	< 3.65E-08	< 3.13E-08	< 4.50E-08	< 9.76E-08	< 8.14E-08	< 2.65E-07	7.42E-08
Pentachlorophenol	87-86-5	< 3.59E-08	< 1.82E-08	< 7.31E-08	< 5.98E-08	< 1.29E-07	4.36E-07	1.40E-07
Phenol	108-95-2	< 8.13E-08	< 1.50E-08	7.30E-08	< 1.63E-08	< 2.50E-07	1.42E-06	4.42E-07
Propylene Oxide	00075-56-9	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.79E-07	< 1.13E-06	3.57E-07
Styrene	100-42-5	6.62E-07	3.08E-07	1.68E-08	9.78E-07	< 8.51E-07	3.28E-06	8.76E-07
tert-Butyl methyl ether	1634-04-4	5.63E-07	1.14E-06	2.30E-04	1.43E-07	< 2.14E-05	2.30E-04	6.60E-05
Tetrachloroethene	127-18-4	1.68E-06	< 5.72E-07	4.15E-07	< 6.35E-08	< 3.78E-07	1.68E-06	4.46E-07
Toluene	108-88-3	2.81E-05	3.88E-06	2.53E-05	2.84E-06	1.37E-05	2.81E-05	9.62E-06
Trichloroethene	79-01-6	< 2.82E-07	< 5.66E-07	< 4.22E-07	< 6.28E-08	< 2.50E-07	< 5.66E-07	1.75E-07
Trifluralin	1582-09-8	< 3.12E-08	< 2.26E-08	< 3.21E-08	< 3.44E-08	< 6.06E-08	< 2.07E-07	6.07E-08
Vinyl acetate	108-05-4	< 2.82E-07	< 5.65E-07	< 4.21E-07	< 6.20E-08	< 2.49E-07	< 5.65E-07	1.75E-07
Vinyl Bromide	593-60-2	< 4.50E-09	< 2.95E-09	< 4.90E-09	< 3.64E-09	< 5.24E-09	< 1.17E-08	2.32E-09
Vinyl Chloride	75-01-4	< 2.85E-07	< 5.67E-07	< 4.24E-07	< 6.53E-08	< 2.53E-07	< 5.67E-07	1.75E-07

(1) - Extruded EPDM (Peroxide-cure).
(2) - Tentatively Identified Compound (TIC) - No data are given if not detected.

TABLE 3-6A. AUTOCLAVE CURING EMISSION FACTOR SUMMARY
(HAPS LISTED IN DESCENDING ORDER BY MEANS)

Pollutant Category	CAS #	Cmpd. #4 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd. #8 lb/lb-rubber	Cmpd. #9 (1) lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #11 lb/lb-rubber
TOTAL VOCs		1.61E-04	1.78E-04	1.33E-04	5.42E-05	1.63E-04	3.61E-04	9.32E-05
TOTAL SPECIATED ORGANICS		< 5.62E-04	< 5.54E-04	< 8.27E-04	< 6.68E-04	< 1.22E-03	< 8.17E-04	< 3.55E-04
TOTAL ORGANIC HAPs		**< 2.89E-04**	**< 1.98E-04**	**< 1.74E-04**	**< 5.25E-04**	**< 2.13E-04**	**< 1.35E-04**	**< 1.46E-04**
Individual HAPs:								
Carbon disulfide	75-15-0	4.77E-07	2.17E-06	6.07E-07	3.84E-04	5.81E-06	1.39E-06	8.93E-05
Acetophenone (2)	00098-86-2	4.88E-06		9.12E-06		1.33E-04	8.80E-05	
4-Methyl-2-pentanone	108-10-1	1.61E-04	< 6.61E-07	7.27E-05	< 5.55E-07	1.24E-05	< 8.40E-07	< 1.96E-07
tert-Butyl methyl ether	1634-04-4	3.09E-07	2.84E-07	2.34E-07	1.12E-06	< 2.08E-07	< 3.02E-07	1.13E-06
m-/p-Xylene	108-38-3/106-42-3	4.48E-05	6.19E-05	9.71E-06	1.95E-05	1.28E-05	9.79E-06	2.75E-07
Methylene chloride	75-09-2	9.72E-06	7.34E-05	2.26E-06	3.08E-06	2.15E-06	4.41E-06	5.32E-07
o-Xylene	95-47-6	4.97E-06	4.22E-06	3.31E-06	4.81E-06	1.25E-05	2.93E-06	2.01E-05
Toluene	108-88-3	2.08E-05	1.56E-05	7.09E-06	2.79E-05	5.01E-06	6.91E-06	7.45E-06
Benzene	71-43-2	1.16E-05	5.39E-06	9.09E-06	2.23E-05	4.39E-06	1.46E-06	1.66E-06
Aniline	62-53-3	1.04E-05	8.98E-06	2.58E-05	8.45E-07	2.67E-06	1.57E-07	2.21E-06
Carbon tetrachloride	56-23-5	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.05E-07	< 1.01E-07	< 1.82E-07
2-Butanone	78-93-3	1.77E-06	2.12E-06	4.55E-07	3.43E-06	2.45E-06	1.42E-06	1.38E-06
Carbonyl Sulfide	463-58-1	4.58E-07	4.66E-07	5.48E-07	1.97E-05	8.15E-07	5.18E-07	2.02E-06
Ethylbenzene	100-41-4	4.77E-06	1.75E-06	2.91E-06	3.90E-06	3.31E-06	3.02E-06	< 8.17E-08
Chloroform	67-66-3	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.54E-07	< 1.06E-07	< 1.02E-07	< 1.95E-07
n-Hexane	110-54-3	1.85E-06	3.05E-06	1.08E-06	3.94E-06	1.22E-06	1.88E-06	9.58E-07
o-Toluidine	95-53-4	2.14E-07	< 1.63E-08	1.53E-05	< 3.58E-08	< 7.53E-08	< 5.68E-08	< 9.82E-09
Isooctane	540-84-1	4.78E-07	7.27E-07	2.88E-07	9.76E-07	5.54E-08	2.80E-07	7.39E-06
1,4-Dioxane	00123-91-1	< 5.89E-07	< 7.96E-07	< 4.28E-07	< 2.20E-06	< 4.10E-07	< 3.98E-07	< 7.72E-07
Styrene	100-42-5	1.31E-06	7.18E-07	3.28E-06	< 3.56E-07	1.27E-06	4.38E-07	2.93E-08
Acetaldehyde (2)	00075-07-0		1.83E-06		2.74E-07			1.02E-07
Acrolein	00107-02-8	< 2.95E-07	< 2.82E-07	< 2.14E-07	< 1.10E-06	< 3.59E-07	< 1.99E-07	< 3.86E-07
bis(2-Ethylhexyl)phthalate	117-81-7	4.42E-07	3.30E-07	2.37E-06	3.68E-07	1.74E-07	1.90E-07	7.48E-07
Epichlorohydrin	00106-89-8	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 3.57E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
Chloromethane	74-87-3	< 1.52E-07	< 2.05E-07	< 1.59E-07	< 5.60E-07	< 3.14E-07	< 1.86E-07	< 1.99E-07
Acetonitrile	75-05-8	< 2.95E-07	1.60E-06	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
1,3-Butadiene	106-99-0	1.73E-06	< 2.13E-06	7.52E-07	< 3.59E-08	< 5.17E-08	< 8.77E-07	< 1.55E-07
Acrylonitrile	107-13-1	< 3.10E-07	< 4.59E-07	< 2.30E-07	< 1.17E-06	< 2.32E-07	< 2.16E-07	< 3.99E-07
Hexachlorobutadiene	00087-68-3	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 3.96E-07	< 5.07E-07	< 1.45E-07
Allyl chloride	107-05-1	< 3.01E-07	< 4.04E-07	< 2.21E-07	< 1.11E-06	< 2.17E-07	< 2.06E-07	< 3.92E-07
Benzyl Chloride	00100-44-7	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 3.86E-07
Propylene Oxide	00075-56-9	< 2.95E-07	< 3.98E-07	< 2.14E-07	< 1.10E-06	< 2.05E-07	< 1.99E-07	< 2.14E-07
Tetrachloroethene	127-18-4	< 1.53E-07	< 2.02E-07	< 1.10E-07	< 5.56E-07	< 1.10E-07	< 1.02E-07	< 1.96E-07
Naphthalene	91-20-3	3.02E-07	2.89E-07	9.83E-07	2.41E-07	1.76E-07	1.69E-07	6.18E-08
Bromomethane	74-83-9	< 1.53E-07	< 2.08E-07	< 1.13E-07	< 5.65E-07	< 1.12E-07	< 1.05E-07	< 1.99E-07
Chloroethane	75-00-3	< 1.53E-07	< 2.06E-07	< 1.13E-07	< 5.63E-07	< 1.12E-07	< 1.06E-07	< 1.98E-07
Vinyl Chloride	75-01-4	< 1.52E-07	< 2.04E-07	< 1.12E-07	< 5.60E-07	< 1.11E-07	< 1.05E-07	< 1.97E-07
Bromoform	75-25-2	< 1.51E-07	< 2.03E-07	< 1.12E-07	< 5.57E-07	< 1.10E-07	< 1.04E-07	< 1.98E-07
1,1-Dichloroethene	75-35-4	< 1.51E-07	< 2.04E-07	< 1.11E-07	< 5.59E-07	< 1.10E-07	< 1.04E-07	< 1.97E-07
1,1,2-Trichloroethane	79-00-5	< 1.51E-07	< 2.04E-07	< 1.12E-07	< 5.57E-07	< 1.09E-07	< 1.04E-07	< 1.98E-07
1,1,2,2-Tetrachloroethane	79-34-5	< 1.51E-07	< 2.03E-07	< 1.12E-07	< 5.56E-07	< 1.09E-07	< 1.04E-07	< 1.97E-07
1,2-Dichloropropane	78-87-5	< 1.50E-07	< 2.02E-07	< 1.11E-07	< 5.55E-07	< 1.08E-07	< 1.03E-07	< 1.96E-07
1,2-Dichloroethane	107-06-2	< 1.50E-07	< 2.02E-07	< 1.10E-07	< 5.55E-07	< 1.07E-07	< 1.03E-07	< 1.95E-07
Trichloroethene	79-01-6	< 1.49E-07	< 2.05E-07	< 1.09E-07	< 5.55E-07	< 1.06E-07	< 1.02E-07	< 1.96E-07
Chlorobenzene	108-90-7	1.58E-07	< 2.00E-07	< 1.08E-07	< 5.52E-07	< 1.04E-07	< 1.01E-07	< 1.94E-07
Phenol	108-95-2	< 1.75E-08	< 1.19E-07	< 1.65E-08	< 6.45E-08	1.42E-06	8.81E-07	< 4.04E-08
1,1-Dichloroethane	75-34-3	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.54E-07	< 1.06E-07	< 1.02E-07	< 1.95E-07
1,1,1-Trichloroethane	71-55-6	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.06E-07	< 1.01E-07	< 1.95E-07
Vinyl acetate	108-05-4	< 1.49E-07	< 2.01E-07	< 1.09E-07	< 5.53E-07	< 1.05E-07	< 1.01E-07	< 1.95E-07
1,2-Dibromoethane	00106-93-4	< 1.47E-07	< 1.99E-07	< 1.07E-07	< 5.50E-07	< 1.03E-07	< 9.96E-08	< 1.93E-07
1,4-Dichlorobenzene	00106-46-7	< 1.47E-07	< 1.99E-07	< 1.07E-07	< 5.50E-07	< 9.99E-08	1.01E-07	< 1.93E-07
Cumene	98-82-8	6.75E-08	3.30E-08	6.42E-08	4.97E-08	1.30E-06	8.04E-07	7.00E-09
Pentachlorophenol	87-86-5	< 3.02E-08	4.36E-07	< 2.28E-08	< 6.27E-08	< 1.58E-07	< 1.39E-07	3.85E-07
Biphenyl	92-52-4	6.99E-08	2.70E-07	3.84E-07	4.22E-08	1.25E-07	< 4.13E-08	5.48E-09
2,4-Dinitrophenol	51-28-5	< 6.35E-08	< 6.25E-08	< 4.72E-08	< 1.21E-07	< 3.20E-07	< 2.86E-07	< 1.01E-07
2-Chloroacetophenone	532-27-4	< 7.00E-09	2.46E-07	< 6.60E-09	< 1.98E-08	< 4.69E-08	3.45E-08	8.39E-07
Di-n-butylphthalate	84-74-2	< 4.39E-09	4.34E-09	2.16E-08	< 2.16E-09	6.37E-08	9.69E-08	1.76E-08

TABLE 3-6A. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED IN DESCENDING ORDER BY MEANS)

Pollutant Category	CAS #	Cmpd. #4 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #6 lb/lb-rubber	Cmpd. #8 lb/lb-rubber	Cmpd. #9 (1) lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #11 lb/lb-rubber
Hexachloroethane	67-72-1	< 2.71E-08	< 3.71E-08	< 2.48E-08	< 6.50E-08	< 1.50E-07	< 1.30E-07	< 7.50E-08
Isophorone	78-59-1	2.37E-07	2.00E-07	< 7.76E-09	< 2.13E-08	< 5.71E-08	< 4.30E-08	< 8.98E-09
Pentachloronitrobenzene	82-68-8	< 3.49E-08	< 4.33E-08	< 2.94E-08	< 9.27E-08	< 2.65E-07	< 1.90E-07	< 3.04E-08
n-Nitrosodimethylamine	62-75-9	< 4.79E-08	< 4.65E-08	< 5.30E-08	< 1.11E-07	< 2.23E-07	< 1.73E-07	< 2.82E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 4.08E-08	< 3.66E-08	< 2.99E-08	< 7.35E-08	< 1.83E-07	< 1.61E-07	< 5.69E-08
4-Nitrophenol	100-02-7	< 4.38E-08	< 3.11E-08	< 3.04E-08	< 6.88E-08	< 1.93E-07	< 1.74E-07	< 4.89E-08
Trifluralin	1582-09-8	< 2.42E-08	< 3.44E-08	< 2.28E-08	< 7.81E-08	< 2.07E-07	< 1.60E-07	< 2.03E-08
Hexachlorocyclopentadiene	77-47-4	< 2.32E-08	< 2.83E-08	< 1.64E-08	< 6.51E-08	< 1.60E-07	< 1.45E-07	< 2.90E-08
Methylene bis-chloroaniline	101-14-4	< 1.99E-08	< 2.73E-08	< 1.68E-08	< 5.75E-08	< 1.72E-07	< 1.30E-07	< 1.76E-08
Benzidine	92-87-5	< 5.75E-09	< 3.72E-07	< 4.93E-09	5.06E-08	< 5.07E-08	< 3.69E-08	< 6.33E-09
n-Nitrosomorpholine	59-89-2	< 2.38E-08	< 3.36E-08	< 2.50E-08	< 7.24E-08	< 1.47E-07	< 1.13E-07	< 1.93E-08
3,3'-Dimethoxybenzidine	119-90-4	< 1.80E-08	< 2.40E-08	< 1.51E-08	< 4.90E-08	< 1.53E-07	< 1.15E-07	< 1.54E-08
1,4-Phenylenediamine	106-50-3	< 2.27E-08	< 2.61E-08	< 2.20E-08	< 5.59E-08	< 1.43E-07	< 1.08E-07	< 1.80E-08
2,4,6-Trichlorophenol	88-06-2	< 2.42E-08	< 2.27E-08	< 1.64E-08	< 4.93E-08	< 1.29E-07	< 1.16E-07	< 2.49E-08
o-Anisidine	90-04-0	< 1.83E-08	< 2.29E-08	< 1.71E-08	< 5.45E-08	< 1.33E-07	< 1.01E-07	< 1.57E-08
bis(2-Chloroethyl)ether	111-44-4	< 2.32E-08	< 2.43E-08	< 2.22E-08	< 5.31E-08	< 1.11E-07	< 9.69E-08	< 2.12E-08
2,4,5-Trichlorophenol	95-95-4	< 2.28E-08	< 2.12E-08	< 1.56E-08	< 4.44E-08	< 1.16E-07	< 1.04E-07	< 2.42E-08
Hexachlorobenzene	118-74-1	< 1.85E-08	< 1.82E-08	< 1.26E-08	< 3.88E-08	< 1.04E-07	< 9.20E-08	< 2.16E-08
Hydroquinone	123-31-9	< 1.42E-08	< 2.09E-08	< 1.37E-08	< 4.96E-08	< 1.17E-07	< 8.63E-08	< 1.45E-08
3,3'-Dichlorobenzidine	91-94-1	< 3.02E-08	< 1.37E-08	< 2.89E-08	< 2.74E-08	< 8.17E-08	< 6.99E-08	< 3.65E-08
2-Methylphenol	95-48-7	< 2.15E-08	< 1.09E-08	< 2.04E-08	< 2.94E-08	< 1.05E-07	< 9.18E-08	1.94E-08
3/4-Methylphenol	108-39-4/106-44-5	1.48E-08	< 2.12E-08	< 1.88E-08	< 2.35E-08	< 9.80E-08	< 8.53E-08	3.28E-08
2,4-Dinitrotoluene	121-14-2	< 2.03E-08	< 1.58E-08	< 1.38E-08	< 3.36E-08	< 9.18E-08	< 8.25E-08	< 2.15E-08
Chloroprene	126-99-8	< 2.16E-09	< 2.13E-09	< 2.34E-09	< 4.55E-09	< 3.81E-09	< 2.38E-09	3.28E-07
Nitrobenzene	98-95-3	< 1.79E-08	< 1.59E-08	< 1.44E-08	< 3.67E-08	< 8.76E-08	< 7.63E-08	< 1.54E-08
1,2,4-Trichlorobenzene	120-82-1	< 1.56E-08	< 1.52E-08	< 1.21E-08	< 3.61E-08	< 8.92E-08	< 7.79E-08	< 1.52E-08
4,4'-Methylenedianiline	101-77-9	< 1.15E-08	< 1.72E-08	< 9.68E-09	< 3.46E-08	< 9.62E-08	< 7.24E-08	< 9.73E-09
a,a,a-Trichlorotoluene	98-07-7	< 1.04E-08	< 1.27E-08	< 9.86E-09	< 3.09E-08	< 7.70E-08	< 5.85E-08	< 8.81E-09
4-Nitrobiphenyl	92-93-3	< 8.85E-09	< 1.16E-08	< 7.29E-09	< 2.53E-08	< 6.59E-08	< 4.80E-08	< 7.77E-09
N,N-Dimethylaniline	121-69-7	< 9.98E-09	< 1.22E-08	< 9.52E-09	2.76E-08	< 6.85E-08	< 5.19E-08	< 8.02E-09
Dimethylaminoazobenzene	60-11-7	< 7.69E-09	< 1.13E-08	< 6.67E-09	< 2.24E-08	< 6.01E-08	< 4.38E-08	< 7.25E-09
3,3'-Dimethylbenzidine	119-93-7	< 5.94E-09	< 8.42E-09	< 4.98E-09	< 1.75E-08	< 5.07E-08	< 3.84E-08	< 5.21E-09
Dibenzofuran	132-64-9	1.75E-08	4.15E-08	< 1.22E-08	< 7.19E-09	< 2.92E-08	< 2.80E-08	< 6.15E-09
1,2-Epoxybutane	106-88-7	< 1.17E-08	< 1.06E-08	< 1.11E-08	< 1.78E-08	< 1.80E-08	< 1.15E-08	< 1.30E-08
Dimethylphthalate	131-11-3	< 7.06E-09	< 5.89E-09	< 4.64E-09	6.90E-09	< 3.47E-08	< 3.12E-08	1.05E-08
4-Aminobiphenyl	92-67-1	< 5.27E-09	< 6.59E-09	< 4.25E-09	< 1.42E-08	< 3.79E-08	< 2.78E-08	< 4.23E-09
Methyl methacrylate	80-62-6	< 7.16E-09	< 6.27E-09	< 8.64E-09	< 1.01E-08	< 1.31E-08	< 7.98E-09	< 7.59E-09
Vinyl Bromide	593-60-2	< 3.95E-09	< 6.79E-09	< 4.13E-09	< 1.17E-08	< 6.65E-09	< 4.26E-09	< 4.17E-09
Ethylene dibromide	106-93-4	< 2.81E-09	< 3.49E-09	< 3.19E-09	< 5.43E-09	< 4.65E-09	< 2.95E-09	< 3.92E-09
Ethyl acrylate	140-88-5	< 2.59E-09	< 2.21E-09	< 3.22E-09	< 3.73E-09	< 4.86E-09	< 2.97E-09	< 2.78E-09
Iodomethane	74-88-4	< 1.23E-09	< 1.79E-09	< 1.31E-09	< 3.20E-09	< 2.14E-09	< 1.34E-09	< 1.73E-09

(1) - Extruded EPDM (Peroxide-cure).
(2) - Tentatively Identified Compound (TIC) - No data are given if not detected.

TABLE 3-6A. AUTOCLAVE CURING EMISSION FACTOR SUMMARY
(HAPS LISTED IN DESCENDING ORDER BY MEANS)

Pollutant Category	CAS #	Cmpd. #15 lb/lb-rubber	Cmpd. #18 lb/lb-rubber	Cmpd. #21 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		7.34E-05	9.27E-05	2.26E-04	1.11E-04	1.50E-04	3.61E-04	8.24E-05
TOTAL SPECIATED ORGANICS		< 5.08E-04	< 2.09E-03	< 1.96E-03	< 2.37E-04	< 8.91E-04	< 2.09E-03	5.90E-04
TOTAL ORGANIC HAPs		**< 3.36E-04**	**< 1.17E-03**	**< 4.74E-04**	**< 1.26E-04**	**< 3.44E-04**	**< 1.17E-03**	**2.90E-04**
Individual HAPs:								
Carbon disulfide	75-15-0	1.47E-04	1.06E-03	1.02E-06	1.86E-06	1.54E-04	1.06E-03	3.08E-04
Acetophenone (2)	00098-86-2				7.36E-06	4.85E-05	1.33E-04	4.30E-05
4-Methyl-2-pentanone	108-10-1	< 2.83E-07	5.72E-05	< 4.22E-07	6.46E-05	< 3.37E-05	1.61E-04	4.88E-05
tert-Butyl methyl ether	1634-04-4	5.63E-07	1.14E-06	2.30E-04	1.43E-07	< 2.14E-05	2.30E-04	6.60E-05
m-/p-Xylene	108-38-3/106-42-3	3.24E-05	1.43E-06	1.24E-05	4.74E-06	1.91E-05	6.19E-05	1.86E-05
Methylene chloride	75-09-2	1.18E-05	4.68E-07	4.88E-05	1.21E-05	1.53E-05	7.34E-05	2.26E-05
o-Xylene	95-47-6	7.34E-06	4.14E-08	9.16E-05	2.93E-06	< 1.41E-05	9.16E-05	2.51E-05
Toluene	108-88-3	2.81E-05	3.88E-06	2.53E-05	2.84E-06	1.37E-05	2.81E-05	9.62E-06
Benzene	71-43-2	5.26E-06	3.54E-07	5.25E-06	1.14E-05	7.12E-06	2.23E-05	6.03E-06
Aniline	62-53-3	2.69E-08	1.68E-06	1.48E-08	8.27E-06	< 5.55E-06	2.58E-05	7.39E-06
Carbon tetrachloride	56-23-5	5.67E-05	< 5.65E-07	6.00E-07	< 6.24E-08	< 5.39E-06	5.67E-05	1.62E-05
2-Butanone	78-93-3	< 1.08E-06	1.60E-06	1.93E-05	8.71E-07	< 3.26E-06	1.93E-05	5.13E-06
Carbonyl Sulfide	463-58-1	8.80E-07	9.17E-06	1.42E-07	4.36E-07	3.19E-06	1.97E-05	5.76E-06
Ethylbenzene	100-41-4	8.91E-06	1.39E-07	3.24E-06	1.30E-06	< 3.03E-06	8.91E-06	2.34E-06
Chloroform	67-66-3	1.64E-05	< 5.66E-07	5.98E-07	< 6.26E-08	< 1.73E-06	1.64E-05	4.64E-06
n-Hexane	110-54-3	< 1.83E-06	< 2.77E-08	1.96E-06	4.03E-07	< 1.65E-06	3.94E-06	1.07E-06
o-Toluidine	95-53-4	< 1.01E-08	6.19E-08	< 1.46E-08	1.66E-07	< 1.45E-06	1.53E-05	4.37E-06
Isooctane	540-84-1	1.07E-06	< 4.06E-09	3.84E-06	1.57E-07	< 1.39E-06	7.39E-06	2.16E-06
1,4-Dioxane	00123-91-1	< 1.12E-06	< 2.26E-06	< 1.68E-06	< 2.43E-07	< 9.90E-07	< 2.26E-06	6.98E-07
Styrene	100-42-5	6.62E-07	3.08E-07	1.68E-08	9.78E-07	< 8.51E-07	3.28E-06	8.76E-07
Acetaldehyde (2)	00075-07-0			1.18E-06		8.47E-07	1.83E-06	5.87E-07
Acrolein	00107-02-8	< 5.39E-07	< 1.13E-06	< 4.44E-06	< 1.22E-07	< 8.24E-07	< 4.44E-06	1.19E-06
bis(2-Ethylhexyl)phthalate	117-81-7	1.00E-06	4.54E-08	2.20E-06	1.75E-07	< 7.32E-07	2.37E-06	7.80E-07
Epichlorohydrin	00106-89-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 7.19E-07	< 3.57E-06	9.46E-07
Chloromethane	74-87-3	< 2.85E-07	< 5.67E-07	< 4.44E-06	< 1.61E-07	< 6.57E-07	< 4.44E-06	1.21E-06
Acetonitrile	75-05-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 6.04E-07	1.60E-06	4.68E-07
1,3-Butadiene	106-99-0	< 2.01E-08	< 6.25E-08	< 1.74E-08	< 3.34E-07	< 5.61E-07	< 2.13E-06	7.10E-07
Acrylonitrile	107-13-1	< 5.76E-07	< 1.14E-06	< 8.52E-07	< 1.36E-07	< 5.20E-07	< 1.17E-06	3.55E-07
Hexachlorobutadiene	00087-68-3	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 5.18E-07	< 1.13E-06	3.42E-07
Allyl chloride	107-05-1	< 5.66E-07	< 1.13E-06	< 8.44E-07	< 1.28E-07	< 5.02E-07	< 1.13E-06	3.49E-07
Benzyl Chloride	00100-44-7	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.95E-07	< 1.13E-06	3.49E-07
1,2-Dibromo-3-Chloropropane	00096-12-8	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.95E-07	< 1.13E-06	3.49E-07
Propylene Oxide	00075-56-9	< 5.59E-07	< 1.13E-06	< 8.38E-07	< 1.22E-07	< 4.79E-07	< 1.13E-06	3.57E-07
Tetrachloroethene	127-18-4	1.68E-06	< 5.72E-07	4.15E-07	< 6.35E-08	< 3.78E-07	1.68E-06	4.46E-07
Naphthalene	91-20-3	2.99E-07	9.23E-08	9.41E-08	3.36E-07	2.77E-07	9.83E-07	2.41E-07
Bromomethane	74-83-9	< 2.86E-07	< 5.69E-07	< 4.26E-07	< 6.58E-08	< 2.55E-07	< 5.69E-07	1.76E-07
Chloroethane	75-00-3	< 2.86E-07	< 5.68E-07	< 4.25E-07	< 6.61E-08	< 2.54E-07	< 5.68E-07	1.75E-07
Vinyl Chloride	75-01-4	< 2.85E-07	< 5.67E-07	< 4.24E-07	< 6.53E-08	< 2.53E-07	< 5.67E-07	1.75E-07
Bromoform	75-25-2	< 2.85E-07	< 5.67E-07	< 4.24E-07	< 6.49E-08	< 2.52E-07	< 5.67E-07	1.75E-07
1,1-Dichloroethene	75-35-4	< 2.83E-07	< 5.67E-07	< 4.23E-07	< 6.45E-08	< 2.52E-07	< 5.67E-07	1.75E-07
1,1,2-Trichloroethane	79-00-5	< 2.84E-07	< 5.68E-07	< 4.24E-07	< 6.46E-08	< 2.52E-07	< 5.68E-07	1.75E-07
1,1,2,2-Tetrachloroethane	79-34-5	< 2.84E-07	< 5.67E-07	< 4.23E-07	< 6.47E-08	< 2.52E-07	< 5.67E-07	1.74E-07
1,2-Dichloropropane	78-87-5	< 2.83E-07	< 5.66E-07	< 4.22E-07	< 6.40E-08	< 2.51E-07	< 5.66E-07	1.74E-07
1,2-Dichloroethane	107-06-2	< 2.82E-07	< 5.66E-07	< 4.22E-07	< 6.33E-08	< 2.50E-07	< 5.66E-07	1.75E-07
Trichloroethene	79-01-6	< 2.82E-07	< 5.66E-07	< 4.22E-07	< 6.28E-08	< 2.50E-07	< 5.66E-07	1.75E-07
Chlorobenzene	108-90-7	< 2.81E-07	5.74E-07	< 4.20E-07	< 6.18E-08	< 2.50E-07	5.74E-07	1.76E-07
Phenol	108-95-2	< 8.13E-08	< 1.50E-08	7.30E-08	< 1.63E-08	< 2.50E-07	1.42E-06	4.42E-07
1,1-Dichloroethane	75-34-3	< 2.82E-07	< 5.66E-07	< 4.21E-07	< 6.28E-08	< 2.50E-07	< 5.66E-07	1.75E-07
1,1,1-Trichloroethane	71-55-6	< 2.82E-07	< 5.66E-07	< 4.21E-07	< 6.25E-08	< 2.50E-07	< 5.66E-07	1.75E-07
Vinyl acetate	108-05-4	< 2.82E-07	< 5.65E-07	< 4.21E-07	< 6.20E-08	< 2.49E-07	< 5.65E-07	1.75E-07
1,2-Dibromoethane	00106-93-4	< 2.80E-07	< 5.64E-07	< 4.19E-07	< 6.08E-08	< 2.47E-07	< 5.64E-07	1.75E-07
1,4-Dichlorobenzene	00106-46-7	< 2.50E-07	< 5.64E-07	< 4.19E-07	< 6.08E-08	< 2.45E-07	< 5.64E-07	1.74E-07
Cumene	98-82-8	3.83E-08	7.49E-08	1.26E-07	7.17E-08	< 2.40E-07	1.30E-06	3.99E-07
Pentachlorophenol	87-86-5	< 3.59E-08	< 1.82E-08	< 7.31E-08	< 5.98E-08	< 1.29E-07	4.36E-07	1.40E-07
Biphenyl	92-52-4	1.19E-08	7.23E-09	7.44E-09	3.99E-07	< 1.24E-07	3.99E-07	1.46E-07
2,4-Dinitrophenol	51-28-5	< 7.05E-08	< 4.24E-08	< 1.30E-07	< 6.49E-08	< 1.19E-07	< 3.20E-07	9.11E-08
2-Chloroacetophenone	532-27-4	< 7.24E-09	< 6.40E-09	< 8.98E-09	< 8.99E-09	< 1.12E-07	8.39E-07	2.39E-07
Di-n-butylphthalate	84-74-2	4.51E-07	2.91E-09	2.12E-07	3.42E-07	< 1.11E-07	4.51E-07	1.49E-07

TABLE 3-6A. AUTOCLAVE CURING EMISSION FACTOR SUMMARY (HAPS LISTED IN DESCENDING ORDER BY MEANS)

Pollutant Category	CAS #	Cmpd. #15 lb/lb-rubber	Cmpd. #18 lb/lb-rubber	Cmpd. #21 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
Hexachloroethane	67-72-1	4.94E-07	< 2.04E-08	6.02E-08	< 2.81E-08	< 1.01E-07	4.94E-07	1.31E-07
Isophorone	78-59-1	< 6.94E-09	2.35E-08	< 1.37E-08	3.45E-07	< 8.77E-08	3.45E-07	1.12E-07
Pentachloronitrobenzene	82-68-8	< 3.65E-08	< 3.13E-08	< 4.50E-08	< 9.76E-08	< 8.14E-08	< 2.65E-07	7.42E-08
n-Nitrosodimethylamine	62-75-9	< 3.60E-08	< 4.21E-08	< 4.73E-08	< 5.33E-08	< 7.83E-08	< 2.23E-07	6.10E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 4.14E-08	< 2.39E-08	< 8.52E-08	< 7.32E-08	< 7.32E-08	< 1.83E-07	5.03E-08
4-Nitrophenol	100-02-7	< 3.24E-08	< 2.45E-08	< 6.80E-08	< 3.35E-08	< 6.81E-08	< 1.93E-07	5.64E-08
Trifluralin	1582-09-8	< 3.12E-08	< 2.26E-08	< 3.21E-08	< 3.44E-08	< 6.06E-08	< 2.07E-07	6.07E-08
Hexachlorocyclopentadiene	77-47-4	< 2.00E-08	< 1.85E-08	< 4.12E-08	< 2.74E-08	< 5.22E-08	< 1.60E-07	4.91E-08
Methylene bis-chloroaniline	101-14-4	< 3.70E-08	< 1.80E-08	< 4.62E-08	< 2.69E-08	< 5.18E-08	< 1.72E-07	4.92E-08
Benzidine	92-87-5	< 1.19E-08	< 5.70E-09	< 1.56E-08	< 8.89E-09	< 5.17E-08	< 3.72E-07	1.03E-07
n-Nitrosomorpholine	59-89-2	< 1.70E-08	< 2.04E-08	< 2.50E-08	< 2.77E-08	< 4.77E-08	< 1.47E-07	4.21E-08
3,3'-Dimethoxybenzidine	119-90-4	< 3.32E-08	< 1.64E-08	< 4.01E-08	< 2.36E-08	< 4.57E-08	< 1.53E-07	4.36E-08
1,4-Phenylenediamine	106-50-3	< 2.29E-08	< 2.21E-08	< 2.94E-08	< 3.04E-08	< 4.55E-08	< 1.43E-07	3.97E-08
2,4,6-Trichlorophenol	88-06-2	< 1.81E-08	< 1.59E-08	< 3.42E-08	< 2.21E-08	< 4.30E-08	< 1.29E-07	3.86E-08
o-Anisidine	90-04-0	< 1.72E-08	< 1.68E-08	< 2.23E-08	< 2.42E-08	< 4.03E-08	< 1.33E-07	3.83E-08
bis(2-Chloroethyl)ether	111-44-4	< 1.45E-08	< 1.63E-08	< 3.50E-08	< 2.21E-08	< 4.00E-08	< 1.11E-07	3.20E-08
2,4,5-Trichlorophenol	95-95-4	< 1.79E-08	< 1.43E-08	< 3.24E-08	< 2.03E-08	< 3.94E-08	< 1.16E-07	3.44E-08
Hexachlorobenzene	118-74-1	< 1.61E-08	< 1.26E-08	< 3.33E-08	< 3.63E-08	< 3.67E-08	< 1.04E-07	3.03E-08
Hydroquinone	123-31-9	< 1.74E-08	< 1.48E-08	< 2.31E-08	< 2.18E-08	< 3.58E-08	< 1.17E-07	3.32E-08
3,3'-Dichlorobenzidine	91-94-1	< 2.19E-08	< 9.80E-09	< 5.78E-08	< 1.38E-08	< 3.56E-08	< 8.17E-08	2.28E-08
2-Methylphenol	95-48-7	< 1.49E-08	1.55E-08	< 3.53E-08	< 2.10E-08	< 3.50E-08	< 1.05E-07	3.08E-08
3/4-Methylphenol	108-39-4/106-44-5	< 1.45E-08	< 1.43E-08	< 3.32E-08	< 1.94E-08	< 3.42E-08	< 9.80E-08	2.79E-08
2,4-Dinitrotoluene	121-14-2	< 1.51E-08	< 1.28E-08	< 2.87E-08	< 1.78E-08	< 3.22E-08	< 9.18E-08	2.67E-08
Chloroprene	126-99-8	< 2.02E-09	< 1.46E-09	< 2.04E-09	< 2.05E-09	< 3.21E-08	3.28E-07	9.37E-08
Nitrobenzene	98-95-3	< 1.19E-08	< 1.26E-08	< 2.34E-08	< 1.63E-08	< 2.99E-08	< 8.76E-08	2.55E-08
1,2,4-Trichlorobenzene	120-82-1	< 1.21E-08	< 1.15E-08	< 2.48E-08	< 1.52E-08	< 2.95E-08	< 8.92E-08	2.65E-08
4,4'-Methylenedianiline	101-77-9	< 1.99E-08	< 1.05E-08	< 2.44E-08	< 1.52E-08	< 2.92E-08	< 9.62E-08	2.74E-08
a,a,a-Trichlorotoluene	98-07-7	< 9.20E-09	< 9.27E-09	< 1.20E-08	< 1.30E-08	< 2.29E-08	< 7.70E-08	2.23E-08
4-Nitrobiphenyl	92-93-3	< 1.21E-08	< 8.20E-09	< 1.40E-08	< 2.38E-08	< 2.12E-08	< 6.59E-08	1.82E-08
N,N-Dimethylaniline	121-69-7	< 9.14E-09	< 9.06E-09	< 1.16E-08	< 1.26E-08	< 2.09E-08	< 6.85E-08	1.95E-08
Dimethylaminoazobenzene	60-11-7	< 1.37E-08	< 7.12E-09	< 1.75E-08	< 1.02E-08	< 1.89E-08	< 6.01E-08	1.66E-08
3,3'-Dimethylbenzidine	119-93-7	< 1.09E-08	< 5.26E-09	< 1.36E-08	< 7.94E-09	< 1.54E-08	< 5.07E-08	1.45E-08
Dibenzofuran	132-64-9	5.64E-09	< 4.12E-09	< 8.20E-09	< 5.82E-09	< 1.50E-08	4.15E-08	1.19E-08
1,2-Epoxybutane	106-88-7	< 2.49E-08	< 9.22E-09	< 1.53E-08	< 9.81E-09	< 1.39E-08	< 2.49E-08	4.52E-09
Dimethylphthalate	131-11-3	8.73E-09	< 4.69E-09	2.28E-08	< 6.62E-09	< 1.31E-08	< 3.47E-08	1.05E-08
4-Aminobiphenyl	92-67-1	< 6.12E-09	< 4.78E-09	< 7.12E-09	< 1.39E-08	< 1.20E-08	< 3.79E-08	1.06E-08
Methyl methacrylate	80-62-6	< 8.34E-09	< 4.81E-09	< 8.25E-09	< 7.35E-09	< 8.15E-09	< 1.31E-08	2.02E-09
Vinyl Bromide	593-60-2	< 4.50E-09	< 2.95E-09	< 4.90E-09	< 3.64E-09	< 5.24E-09	< 1.17E-08	2.32E-09
Ethylene dibromide	106-93-4	< 3.50E-09	< 2.19E-09	< 4.27E-09	< 2.71E-09	< 3.56E-09	< 5.43E-09	9.05E-10
Ethyl acrylate	140-88-5	< 3.18E-09	< 1.68E-09	< 3.02E-09	< 2.73E-09	< 3.00E-09	< 4.86E-09	7.81E-10
Iodomethane	74-88-4	< 1.47E-09	< 8.64E-10	< 2.03E-09	< 1.15E-09	< 1.66E-09	< 3.20E-09	6.11E-10

(1) - Extruded EPDM (Peroxide-cure).
(2) - Tentatively Identified Compound (TIC) - No data are given if not detected.

TABLE 3-7. PLATEN PRESS MOLD CURING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #1 lb/lb-rubber	Cmpd. #2 lb/lb-rubber	Cmpd. #3 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #7 lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #10 lb/lb-rubber	Cmpd. #11 lb/lb-rubber	Cmpd. #12 lb/lb-rubber	Cmpd. #13 lb/lb-rubber
TOTAL VOCs		3.10E-04	1.51E-04	3.77E-04	5.56E-04	9.34E-05	1.68E-03	3.15E-04	2.35E-04	2.53E-04	5.21E-04
TOTAL SPECIATED ORGANICS		< 1.59E-03	< 1.39E-03	< 2.85E-03	< 1.39E-03	< 9.54E-04	< 5.70E-03	< 2.87E-03	< 2.50E-03	< 2.61E-03	< 2.80E-03
TOTAL ORGANIC HAPs		< 1.32E-03	< 1.15E-03	< 2.45E-03	< 2.75E-04	< 7.44E-04	< 5.13E-03	< 2.55E-03	< 2.17E-03	< 2.30E-03	< 2.57E-03
Individual HAPs:											
1,1,1-Trichloroethane	00071-55-6	3.54E-06	2.52E-06	3.15E-06	3.80E-06	4.19E-06	4.20E-06	2.52E-06	< 2.81E-06	3.03E-05	3.56E-04
1,2,4-Trichlorobenzene	120-82-1	< 3.51E-07	< 1.37E-07	< 1.67E-07	< 1.98E-07	< 3.64E-07	< 2.02E-07	< 1.25E-07	< 1.37E-07	< 1.59E-07	< 1.63E-07
1,3-Butadiene	106-99-0	< 7.25E-07	1.20E-05	< 7.08E-07	5.84E-06	9.42E-06	7.53E-06	7.43E-06	< 9.28E-07	< 6.81E-07	< 6.68E-07
1,4-Dichlorobenzene	106-46-7	1.03E-07	7.63E-08	5.52E-08	< 1.65E-07	5.42E-08	< 1.75E-07	5.53E-08	< 1.17E-07	5.78E-08	< 1.11E-07
2-Butanone	00078-93-3	1.84E-06	2.77E-06	2.89E-06	2.04E-06	< 2.58E-05	3.02E-06	< 5.03E-06	< 1.79E-06	1.18E-06	< 1.19E-05
2-Chloro-1,3-Butadiene	00126-99-8								9.08E-06		
2-Methylphenol	95-48-7	< 3.28E-07	< 1.17E-07	2.98E-08	< 2.15E-07	< 3.33E-07	< 2.29E-07	< 1.09E-07	< 1.53E-07	< 1.31E-07	< 1.44E-07
3/4-Methylphenol	108-39-4/106-44-5	< 3.10E-07	< 1.08E-07	9.69E-08	< 2.04E-07	< 3.14E-07	< 2.18E-07	5.10E-08	< 1.45E-07	< 1.22E-07	< 1.34E-07
4-Methyl-2-pentanone	00108-10-1	< 2.58E-06	< 6.29E-06	1.16E-04	< 1.57E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Acetaldehyde	00075-07-0				6.69E-06		7.64E-06		1.65E-06		
Acetonitrile	75-05-8	< 5.15E-06	< 1.26E-05	< 5.03E-06	5.47E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	< 1.98E-06	< 4.84E-06	< 1.19E-05
Acetophenone	98-86-2	5.09E-07	1.39E-06	4.25E-07	0.00E+00	8.74E-07	4.40E-04	4.36E-07	0.00E+00	2.17E-06	5.05E-07
Acrylonitrile	00107-13-1	< 5.15E-06	< 1.26E-05	< 5.03E-06	< 2.68E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	< 1.98E-06	< 4.84E-06	< 1.19E-05
Aniline	62-53-3	< 1.56E-07	4.16E-07	7.08E-07	2.01E-06	< 1.59E-07	< 1.49E-07	< 5.24E-08	2.61E-07	< 6.38E-08	< 6.96E-08
Benzene	71-43-2	1.08E-06	1.36E-06	1.18E-06	< 1.14E-06	< 2.09E-06	< 1.24E-06	< 1.02E-06	< 8.04E-07	< 9.83E-07	< 9.65E-07
Benzidine	92-87-5	< 1.91E-07	< 8.50E-08	< 1.28E-07	4.54E-06	< 1.78E-07	< 7.62E-08	< 8.01E-08	< 2.92E-07	< 9.49E-08	< 1.07E-07
Biphenyl	92-52-4	< 1.28E-07	< 5.62E-08	1.40E-07	3.06E-07	< 1.30E-07	< 9.41E-08	< 5.24E-08	< 5.91E-08	< 6.82E-08	< 6.96E-08
bis(2-Ethylhexyl)phthalate	117-81-7	4.20E-06	2.48E-06	2.14E-06	3.83E-06	1.15E-05	2.60E-06	2.83E-06	1.69E-06	3.63E-06	1.78E-05
Carbon Disulfide	00075-15-0	2.16E-06	5.35E-04	3.15E-06	3.46E-06	< 1.29E-05	4.20E-06	1.32E-03	3.47E-04	5.75E-04	9.50E-04
Carbonyl Sulfide	463-58-1	< 3.16E-06	3.65E-06	< 3.08E-06	< 4.50E-06	< 6.44E-06	< 3.75E-06	< 3.11E-06	< 3.25E-06	4.39E-05	3.33E-05
Chloroethane	00075-00-3	< 2.58E-06	< 6.29E-06	< 2.52E-06	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Chloromethane	00074-87-3	1.06E-06	< 6.29E-06	7.87E-07	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	8.77E-07	< 5.94E-06
Cumene	98-82-8	3.64E-08	5.90E-08	5.96E-08	9.03E-08	7.43E-08	2.76E-06	3.20E-08	3.55E-08	4.00E-08	4.55E-08
Dibenzofuran	132-64-9	6.38E-08	5.04E-08	1.54E-07	< 6.45E-08	< 1.33E-07	< 6.87E-08	2.77E-08	< 4.61E-08	5.64E-08	3.27E-08
Dimethylphthalate	131-11-3	< 1.61E-07	7.78E-08	< 8.80E-08	1.80E-07	< 1.64E-07	6.72E-08	< 5.97E-08	< 6.18E-08	< 7.71E-08	< 7.82E-08
Di-n-butylphthalate	84-74-2	5.47E-08	2.11E-06	3.01E-07	1.39E-07	7.80E-07	7.16E-06	8.30E-08	0.00E+00	2.58E-07	0.00E+00
Ethylbenzene	100-41-4	< 1.42E-06	< 1.39E-06	< 1.39E-06	1.34E-06	< 2.85E-06	< 1.69E-06	< 1.39E-06	< 1.09E-06	< 1.34E-06	< 1.31E-06
Hexachlorobutadiene	87-68-3	< 6.16E-07	< 2.38E-07	< 2.92E-07	< 3.37E-07	< 6.39E-07	3.93E-07	< 2.17E-07	< 2.33E-07	< 2.77E-07	< 2.86E-07
Methylene Chloride	00075-09-2	1.26E-03	4.09E-04	2.27E-03	1.76E-04	5.15E-04	4.59E-03	1.16E-03	1.72E-03	1.60E-03	1.13E-03
m-Xylene + p-Xylene	108-38-3/106-42-3	1.01E-06	1.91E-06	9.03E-06	9.24E-06	3.20E-06	< 1.69E-06	< 1.39E-06	< 1.08E-06	< 1.34E-06	< 1.31E-06
Naphthalene	91-20-3	3.29E-07	4.59E-07	5.78E-07	1.57E-06	2.37E-06	4.04E-06	2.81E-07	1.67E-06	3.71E-07	3.31E-07
n-Hexane	110-54-3	7.49E-06	1.03E-05	6.96E-06	1.66E-05	9.22E-06	1.64E-05	4.12E-06	3.12E-05	2.69E-06	< 1.06E-06
o-Toluidine	95-53-4	< 1.82E-07	1.59E-06	< 8.05E-08	< 1.39E-07	< 1.84E-07	< 1.51E-07	< 6.26E-08	< 9.86E-08	2.21E-06	< 8.24E-08
o-Xylene	95-47-6	< 1.42E-06	< 1.39E-06	< 1.39E-06	2.01E-06	1.78E-06	< 1.69E-06	< 1.39E-06	< 1.09E-06	< 1.34E-06	< 1.31E-06
Phenol	108-95-2	6.12E-07	5.37E-07	5.19E-07	9.67E-07	4.22E-07	1.28E-06	4.18E-07	4.62E-07	5.37E-07	7.79E-07
Propylene Oxide	00075-56-9	< 5.15E-06	1.04E-04	< 5.03E-06	< 2.68E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	3.63E-05	< 4.84E-06	< 1.19E-05
Tetrachloroethene	00127-18-4	< 2.58E-06	< 6.29E-06	5.35E-07	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Toluene	108-88-3	4.23E-06	6.20E-06	6.03E-06	1.18E-05	3.00E-06	2.72E-06	2.76E-06	2.30E-06	2.98E-06	< 1.14E-06

A blank space indicates that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.
A "0" indicates a blank correction that resulted in a "0" or a negative value.

TABLE 3-7. PLATEN PRESS MOLD CURING EMISSION FACTOR SUMMARY
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Cmpd. #14 lb/lb-rubber	Cmpd. #16 lb/lb-rubber	Cmpd. #17 lb/lb-rubber	Cmpd. #19 lb/lb-rubber	Cmpd. #20 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Cmpd. #23 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		1.93E-04	2.91E-04	2.25E-03	2.43E-03	2.26E-04	4.68E-04	1.12E-04	6.15E-04	2.43E-03	7.21E-04
TOTAL SPECIATED ORGANICS		< 3.93E-03	< 1.99E-03	< 3.95E-03	< 3.60E-03	< 2.87E-03	< 2.89E-03	< 1.41E-03	< 2.66E-03	< 5.70E-03	1.16E-03
TOTAL ORGANIC HAPs		< 3.66E-03	< 1.66E-03	< 2.20E-03	< 6.13E-04	< 2.59E-03	< 2.61E-03	< 1.24E-03	< 2.07E-03	< 5.13E-03	1.15E-03
Individual HAPs:											
1,1,1-Trichloroethane	00071-55-6	2.05E-06	2.45E-06	1.51E-05	2.25E-06	3.34E-06	4.51E-06	2.04E-06	< 2.62E-05	3.56E-04	8.28E-05
1,2,4-Trichlorobenzene	120-82-1	< 5.08E-08	< 1.50E-07	1.66E-08	< 1.39E-07	< 4.84E-08	< 1.93E-07	< 1.30E-07	< 1.61E-07	< 3.64E-07	8.77E-08
1,3-Butadiene	106-99-0	2.17E-05	< 7.08E-07	< 7.08E-07	1.00E-05	2.56E-05	< 6.76E-07	6.77E-06	< 6.60E-06	2.56E-05	7.35E-06
1,4-Dichlorobenzene	106-46-7	8.94E-08	9.15E-08	5.27E-08	5.01E-08	9.11E-08	< 1.59E-07	8.08E-08	< 9.32E-08	< 1.75E-07	3.96E-08
2-Butanone	00078-93-3	< 5.14E-06	1.20E-06	< 5.03E-06	1.30E-05	1.76E-06	< 9.62E-06	1.30E-06	< 5.60E-06	< 2.58E-05	6.20E-06
2-Chloro-1,3-Butadiene	00126-99-8						4.01E-06		6.54E-06	9.08E-06	2.28E-06
2-Methylphenol	95-48-7	< 5.24E-08	< 1.28E-07	< 4.97E-08	< 2.06E-07	1.42E-08	< 2.07E-07	< 1.14E-07	< 1.50E-07	< 3.33E-07	9.05E-08
3/4-Methylphenol	108-39-4/106-44-5	< 4.93E-08	7.35E-08	< 4.67E-08	< 1.93E-07	6.69E-08	< 1.97E-07	5.68E-08	< 1.40E-07	< 3.14E-07	8.41E-08
4-Methyl-2-pentanone	00108-10-1	< 2.57E-06	< 2.52E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 2.21E-05	< 2.47E-06	< 1.15E-05	1.16E-04	2.67E-05
Acetaldehyde	00075-07-0						4.01E-06		5.00E-06	7.64E-06	2.41E-06
Acetonitrile	75-05-8	< 5.14E-06	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 9.62E-06	< 4.94E-06	< 7.65E-06	< 2.58E-05	5.38E-06
Acetophenone	98-86-2	2.16E-06	6.44E-07	6.49E-07	2.21E-07	8.33E-07	4.01E-06	3.37E-07	< 2.67E-05	4.40E-04	1.03E-04
Acrylonitrile	00107-13-1	3.02E-05	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 9.62E-06	< 4.94E-06	< 8.96E-06	3.02E-05	7.61E-06
Aniline	62-53-3	< 2.93E-08	< 6.15E-08	1.02E-03	< 1.05E-07	< 2.71E-08	4.26E-06	2.83E-06	< 6.04E-05	1.02E-03	2.39E-04
Benzene	71-43-2	1.15E-06	9.88E-07	1.06E-06	5.62E-06	1.00E-06	< 1.09E-06	< 1.00E-06	< 1.40E-06	5.62E-06	1.09E-06
Benzidine	92-87-5	< 4.62E-08	< 8.55E-08	< 5.12E-08	< 1.03E-07	< 3.84E-08	2.79E-07	< 8.97E-08	< 3.80E-07	4.54E-06	1.04E-06
Biphenyl	92-52-4	< 2.31E-08	< 6.00E-08	< 2.41E-08	< 7.77E-08	< 2.14E-08	< 7.75E-08	< 5.38E-08	< 8.47E-08	3.06E-07	6.51E-08
bis(2-Ethylhexyl)phthalate	117-81-7	2.41E-06	3.07E-06	4.14E-06	4.33E-06	2.57E-06	2.65E-06	6.50E-06	4.61E-06	1.78E-05	3.98E-06
Carbon Disulfide	00075-15-0	8.67E-04	5.66E-06	6.29E-06	< 5.76E-06	4.25E-06	1.63E-04	8.64E-06	< 2.83E-04	1.32E-03	4.06E-04
Carbonyl Sulfide	463-58-1	8.79E-05	< 3.08E-06	< 3.08E-06	< 2.88E-06	< 2.98E-06	< 4.00E-06	2.64E-05	< 1.40E-05	8.79E-05	2.21E-05
Chloroethane	00075-00-3	< 2.57E-06	1.48E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 4.81E-06	< 2.47E-06	< 3.68E-06	< 1.29E-05	2.78E-06
Chloromethane	00074-87-3	< 2.57E-06	6.61E-07	1.04E-06	< 5.76E-06	9.73E-07	< 4.81E-06	1.05E-06	< 3.09E-06	< 1.29E-05	3.12E-06
Cumene	98-82-8	5.08E-08	< 4.05E-08	4.82E-08	< 7.27E-08	4.27E-08	9.44E-08	2.24E-08	< 2.12E-07	2.76E-06	6.37E-07
Dibenzofuran	132-64-9	5.70E-08	4.05E-08	3.31E-08	< 6.52E-08	3.99E-08	< 6.21E-08	4.19E-08	< 6.10E-08	1.54E-07	3.27E-08
Dimethylphthalate	131-11-3	6.62E-08	5.55E-08	6.18E-08	< 8.14E-08	< 2.28E-08	9.90E-08	< 6.13E-08	< 8.61E-08	1.80E-07	4.14E-08
Di-n-butylphthalate	84-74-2	4.78E-07	5.40E-08	9.64E-06	2.12E-07	4.47E-07	1.42E-07	3.59E-06	< 1.50E-06	9.64E-06	2.71E-06
Ethylbenzene	100-41-4	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.33E-06	< 1.36E-06	< 1.45E-06	< 2.85E-06	3.65E-07
Hexachlorobutadiene	87-68-3	< 1.02E-07	< 2.61E-07	< 9.94E-08	< 1.88E-07	< 9.54E-08	< 3.36E-07	< 2.26E-07	< 2.84E-07	< 6.39E-07	1.49E-07
Methylene Chloride	00075-09-2	2.60E-03	1.57E-03	1.10E-03	1.96E-04	2.49E-03	2.30E-03	1.14E-03	1.54E-03	4.59E-03	1.06E-03
m-Xylene + p-Xylene	108-38-3/106-42-3	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.42E-06	< 1.36E-06	< 2.40E-06	9.24E-06	2.50E-06
Naphthalene	91-20-3	6.12E-07	3.50E-07	5.23E-07	0.00E+00	3.70E-07	3.00E-06	3.71E-07	1.01E-06	4.04E-06	1.11E-06
n-Hexane	110-54-3	6.50E-06	5.25E-06	5.26E-06	3.00E-04	2.63E-05	6.53E-06	4.96E-06	< 2.72E-05	3.00E-04	6.87E-05
o-Toluidine	95-53-4	< 3.24E-08	< 7.35E-08	< 3.01E-08	< 1.13E-07	< 2.99E-08	< 1.05E-07	< 6.58E-08	< 3.07E-07	2.21E-06	5.92E-07
o-Xylene	95-47-6	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.33E-06	< 1.36E-06	< 1.43E-06	2.01E-06	2.06E-07
Phenol	108-95-2	2.67E-06	5.19E-07	< 3.61E-08	< 1.44E-07	5.85E-07	5.53E-07	3.96E-07	< 6.72E-07	2.67E-06	5.68E-07
Propylene Oxide	00075-56-9	< 5.14E-06	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 2.66E-05	< 4.94E-06	< 1.59E-05	1.04E-04	2.39E-05
Tetrachloroethene	00127-18-4	< 2.57E-06	< 2.52E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 4.81E-06	< 2.47E-06	< 3.63E-06	< 1.29E-05	2.83E-06
Toluene	108-88-3	3.67E-06	3.96E-05	3.27E-06	9.94E-06	4.49E-06	4.22E-06	5.57E-06	< 6.71E-06	3.96E-05	8.64E-06

A blank space indicates that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.
A "0" indicates a blank correction that resulted in a "0" or a negative value.

TABLE 3-7A. PLATEN PRESS MOLD CURING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #1 lb/lb-rubber	Cmpd. #2 lb/lb-rubber	Cmpd. #3 lb/lb-rubber	Cmpd. #5 lb/lb-rubber	Cmpd. #7 lb/lb-rubber	Cmpd. #9 lb/lb-rubber	Cmpd. #10 lb/lb-rubber	Cmpd. #11 lb/lb-rubber	Cmpd. #12 lb/lb-rubber	Cmpd. #13 lb/lb-rubber
TOTAL VOCs		3.10E-04	1.51E-04	3.77E-04	5.56E-04	9.34E-05	1.68E-03	3.15E-04	2.35E-04	2.53E-04	5.21E-04
TOTAL SPECIATED ORGANICS		< 1.59E-03	< 1.39E-03	< 2.85E-03	< 1.39E-03	< 9.54E-04	< 5.70E-03	< 2.87E-03	< 2.50E-03	< 2.61E-03	< 2.80E-03
TOTAL ORGANIC HAPs		< 1.32E-03	< 1.15E-03	< 2.45E-03	< 2.75E-04	< 7.44E-04	< 5.13E-03	< 2.55E-03	< 2.17E-03	< 2.30E-03	< 2.57E-03
Individual HAPs:											
Methylene Chloride	00075-09-2	1.26E-03	4.09E-04	2.27E-03	1.76E-04	5.15E-04	4.59E-03	1.16E-03	1.72E-03	1.60E-03	1.13E-03
Carbon Disulfide	00075-15-0	2.16E-06	5.35E-04	3.15E-06	3.46E-06	< 1.29E-05	4.20E-06	1.32E-03	3.47E-04	5.75E-04	9.50E-04
Aniline	62-53-3	< 1.56E-07	4.16E-07	7.08E-07	2.01E-06	< 1.59E-07	< 1.49E-07	< 5.24E-08	2.61E-07	< 6.38E-08	< 6.96E-08
n-Hexane	110-54-3	7.49E-06	1.03E-05	6.96E-06	1.66E-05	9.22E-06	1.64E-05	4.12E-06	3.12E-05	2.69E-06	< 1.06E-06
Acetophenone	98-86-2	5.09E-07	1.39E-06	4.25E-07	0.00E+00	8.74E-07	4.40E-04	4.36E-07	0.00E+00	2.17E-06	5.05E-07
1,1,1-Trichloroethane	00071-55-6	3.54E-06	2.52E-06	3.15E-06	3.80E-06	4.19E-06	4.20E-06	2.52E-06	< 2.81E-06	3.03E-05	3.56E-04
Propylene Oxide	00075-56-9	< 5.15E-06	1.04E-04	< 5.03E-06	< 2.68E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	3.63E-05	< 4.84E-06	< 1.19E-05
Carbonyl Sulfide	463-58-1	< 3.16E-06	3.65E-06	< 3.08E-06	< 4.50E-06	< 6.44E-06	< 3.75E-06	< 3.11E-06	< 3.25E-06	4.39E-05	3.33E-05
4-Methyl-2-pentanone	00108-10-1	< 2.58E-06	< 6.29E-06	1.16E-04	< 1.57E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Acrylonitrile	00107-13-1	< 5.15E-06	< 1.26E-05	< 5.03E-06	< 2.68E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	< 1.98E-06	< 4.84E-06	< 1.19E-05
Acetonitrile	75-05-8	< 5.15E-06	< 1.26E-05	< 5.03E-06	5.47E-06	< 2.58E-05	< 6.12E-06	< 5.03E-06	< 1.98E-06	< 4.84E-06	< 1.19E-05
Toluene	108-88-3	4.23E-06	6.20E-06	6.03E-06	1.18E-05	3.00E-06	2.72E-06	2.76E-06	2.30E-06	2.98E-06	< 1.14E-06
1,3-Butadiene	106-99-0	< 7.25E-07	1.20E-05	< 7.08E-07	5.84E-06	9.42E-06	7.53E-06	7.43E-06	< 9.28E-07	< 6.81E-07	< 6.68E-07
2-Chloro-1,3-Butadiene	00126-99-8								9.06E-06		
2-Butanone	00078-93-3	1.84E-06	2.77E-06	2.89E-06	2.04E-06	< 2.58E-05	3.02E-06	< 5.03E-06	< 1.79E-06	1.18E-06	< 1.19E-05
Acetaldehyde	00075-07-0				6.69E-06		7.64E-06		1.65E-06		
bis(2-Ethylhexyl)phthalate	117-81-7	4.20E-06	2.48E-06	2.14E-06	3.83E-06	1.15E-05	2.60E-06	2.83E-06	1.69E-06	3.63E-06	1.78E-05
Chloroethane	00075-00-3	< 2.58E-06	< 6.29E-06	< 2.52E-06	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Tetrachloroethene	00127-18-4	< 2.58E-06	< 6.29E-06	5.35E-07	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	< 2.42E-06	< 5.94E-06
Chloromethane	00074-87-3	1.06E-06	< 6.29E-06	7.87E-07	< 1.34E-06	< 1.29E-05	< 3.06E-06	< 2.52E-06	< 9.90E-07	8.77E-07	< 5.94E-06
m-Xylene + p-Xylene	108-38-3/106-42-3	1.01E-06	1.91E-06	9.03E-06	9.24E-06	3.20E-06	< 1.69E-06	< 1.39E-06	< 1.08E-06	< 1.34E-06	< 1.31E-06
Di-n-butylphthalate	84-74-2	5.47E-08	2.11E-06	3.01E-07	1.39E-07	7.80E-07	7.16E-06	8.30E-08	0.00E+00	2.58E-07	0.00E+00
Ethylbenzene	100-41-4	< 1.42E-06	< 1.39E-06	< 1.39E-06	1.34E-06	< 2.85E-06	< 1.69E-06	< 1.39E-06	< 1.09E-06	< 1.34E-06	< 1.31E-06
o-Xylene	95-47-6	< 1.42E-06	< 1.39E-06	< 1.39E-06	2.01E-06	1.78E-06	< 1.69E-06	< 1.39E-06	< 1.09E-06	< 1.34E-06	< 1.31E-06
Benzene	71-43-2	1.08E-06	1.36E-06	1.18E-06	< 1.14E-06	< 2.09E-06	< 1.24E-06	< 1.02E-06	< 8.04E-07	< 9.83E-07	< 9.65E-07
Naphthalene	91-20-3	3.29E-07	4.59E-07	5.78E-07	1.57E-06	2.37E-06	4.04E-06	2.81E-07	1.67E-06	3.71E-07	3.31E-07
Phenol	108-95-2	6.12E-07	5.37E-07	5.19E-07	9.67E-07	4.22E-07	1.28E-06	4.18E-07	4.62E-07	5.37E-07	7.79E-07
Benzidine	92-87-5	< 1.91E-07	< 8.50E-08	< 1.28E-07	4.54E-06	< 1.78E-07	< 7.62E-08	< 8.01E-08	< 2.92E-07	< 9.49E-08	< 1.07E-07
o-Toluidine	95-53-4	< 1.82E-07	1.59E-06	< 8.05E-08	< 1.39E-07	< 1.84E-07	< 1.51E-07	< 6.26E-08	< 9.86E-08	2.21E-06	< 8.24E-08
Hexachlorobutadiene	87-68-3	< 6.16E-07	< 2.38E-07	< 2.92E-07	< 3.37E-07	< 6.39E-07	3.93E-07	< 2.17E-07	< 2.33E-07	< 2.77E-07	< 2.86E-07
Cumene	98-82-8	3.64E-08	5.90E-08	5.96E-08	9.03E-08	7.43E-08	2.76E-06	3.20E-08	3.55E-08	4.00E-08	4.55E-08
1,2,4-Trichlorobenzene	120-82-1	< 3.51E-07	< 1.37E-07	< 1.67E-07	< 1.98E-07	< 3.64E-07	< 2.02E-07	< 1.25E-07	< 1.37E-07	< 1.59E-07	< 1.63E-07
2-Methylphenol	95-48-7	< 3.28E-07	< 1.17E-07	2.98E-08	< 2.15E-07	< 3.33E-07	< 2.29E-07	< 1.09E-07	< 1.53E-07	< 1.31E-07	< 1.44E-07
3/4-Methylphenol	108-39-4/106-44-5	< 3.10E-07	< 1.08E-07	9.69E-08	< 2.04E-07	< 3.14E-07	< 2.18E-07	5.10E-08	< 1.45E-07	< 1.22E-07	< 1.34E-07
1,4-Dichlorobenzene	106-46-7	1.03E-07	7.63E-08	5.52E-08	< 1.65E-07	5.42E-08	< 1.75E-07	5.53E-08	< 1.17E-07	5.78E-08	< 1.11E-07
Dimethylphthalate	131-11-3	< 1.61E-07	7.78E-08	< 8.80E-08	1.80E-07	< 1.64E-07	6.72E-08	< 5.97E-08	< 6.18E-08	< 7.71E-08	< 7.82E-08
Biphenyl	92-52-4	< 1.28E-07	< 5.62E-08	1.40E-07	3.06E-07	< 1.30E-07	< 9.41E-08	< 5.24E-08	< 5.91E-08	< 6.82E-08	< 6.96E-08
Dibenzofuran	132-64-9	6.38E-08	5.04E-08	1.54E-07	< 6.45E-08	< 1.33E-07	< 6.87E-08	2.77E-08	< 4.61E-08	5.64E-08	3.27E-08

A blank space indicates that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.
A "0" indicates a blank correction that resulted in a "0" or a negative value.

TABLE 3-7A. PLATEN PRESS MOLD CURING EMISSION FACTOR SUMMARY
(HAPs Listed in Descending Order by Means)

Pollutant Category	CAS #	Cmpd. #14 lb/lb-rubber	Cmpd. #15 lb/lb-rubber	Cmpd. #17 lb/lb-rubber	Cmpd. #19 lb/lb-rubber	Cmpd. #20 lb/lb-rubber	Cmpd. #22 lb/lb-rubber	Cmpd. #23 lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber
TOTAL VOCs		1.93E-04	2.91E-04	2.25E-03	2.43E-03	2.26E-04	4.68E-04	1.12E-04	6.15E-04	2.43E-03	7.21E-04
TOTAL SPECIATED ORGANICS		< 3.93E-03	< 1.99E-03	< 3.95E-03	< 3.60E-03	< 2.87E-03	< 2.89E-03	< 1.41E-03	< 2.66E-03	< 5.70E-03	1.16E-03
TOTAL ORGANIC HAPs		< 3.66E-03	< 1.66E-03	< 2.20E-03	< 6.13E-04	< 2.59E-03	< 2.61E-03	< 1.24E-03	< 2.07E-03	< 5.13E-03	1.15E-03
Individual HAPs:											
Methylene Chloride	00075-09-2	2.60E-03	1.57E-03	1.10E-03	1.96E-04	2.49E-03	2.30E-03	1.14E-03	1.54E-03	4.59E-03	1.06E-03
Carbon Disulfide	00075-15-0	8.67E-04	5.66E-06	6.29E-06	< 5.76E-06	4.25E-06	1.63E-04	8.64E-06	< 2.83E-04	1.32E-03	4.06E-04
Aniline	62-53-3	< 2.93E-08	< 6.15E-08	1.02E-03	< 1.05E-07	< 2.71E-08	4.26E-06	2.83E-06	< 6.04E-05	1.02E-03	2.39E-04
n-Hexane	110-54-3	6.50E-06	5.25E-06	5.26E-06	3.00E-04	2.63E-05	8.53E-06	4.96E-06	< 2.72E-05	3.00E-04	6.87E-05
Acetophenone	98-86-2	2.16E-06	6.44E-07	6.49E-07	2.21E-07	8.33E-07	4.01E-06	3.37E-07	< 2.67E-05	4.40E-04	1.03E-04
1,1,1-Trichloroethane	00071-55-6	2.05E-06	2.45E-06	1.51E-05	2.25E-06	3.34E-06	4.51E-06	2.04E-06	< 2.62E-05	3.56E-04	8.28E-05
Propylene Oxide	00075-56-9	< 5.14E-06	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 2.66E-05	< 4.94E-06	< 1.59E-05	1.04E-04	2.39E-05
Carbonyl Sulfide	463-58-1	8.79E-05	< 3.08E-06	< 3.08E-06	< 2.88E-06	< 2.98E-06	< 4.00E-06	2.64E-05	< 1.40E-05	8.79E-05	2.21E-05
4-Methyl-2-pentanone	00108-10-1	< 2.57E-06	< 2.52E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 2.21E-05	< 2.47E-06	< 1.15E-05	1.16E-04	2.67E-05
Acrylonitrile	00107-13-1	3.02E-05	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 9.62E-06	< 4.94E-06	< 8.96E-06	3.02E-05	7.61E-06
Acetonitrile	75-05-8	< 5.14E-06	< 5.03E-06	< 5.03E-06	< 1.15E-05	< 4.86E-06	< 9.62E-06	< 4.94E-06	< 7.65E-06	< 2.58E-05	5.38E-06
Toluene	108-88-3	3.87E-06	3.96E-05	3.27E-06	9.94E-06	4.49E-06	4.22E-06	5.57E-06	< 6.71E-06	3.96E-05	8.64E-06
1,3-Butadiene	106-99-0	2.17E-05	< 7.08E-07	< 7.08E-07	1.00E-05	2.56E-05	< 6.76E-07	6.77E-06	< 6.60E-06	2.56E-05	7.35E-06
2-Chloro-1,3-Butadiene	00126-99-8						4.01E-06		6.54E-06	9.08E-06	2.28E-06
2-Butanone	00078-93-3	< 5.14E-06	1.20E-06	< 5.03E-06	1.30E-05	1.76E-06	< 9.62E-06	1.30E-06	< 5.60E-06	< 2.58E-05	6.20E-06
Acetaldehyde	00075-07-0						4.01E-06		5.00E-06	7.64E-06	2.41E-06
bis(2-Ethylhexyl)phthalate	117-81-7	2.41E-06	3.07E-06	4.14E-06	4.33E-06	2.57E-06	2.65E-06	6.50E-06	4.61E-06	1.78E-05	3.98E-06
Chloroethane	00075-00-3	< 2.57E-06	1.48E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 4.81E-06	< 2.47E-06	< 3.68E-06	< 1.29E-05	2.76E-06
Tetrachloroethene	00127-18-4	< 2.57E-06	< 2.52E-06	< 2.52E-06	< 5.76E-06	< 2.43E-06	< 4.81E-06	< 2.47E-06	< 3.63E-06	< 1.29E-05	2.83E-06
Chloromethane	00074-87-3	< 2.57E-06	6.61E-07	1.04E-05	< 5.76E-06	9.73E-07	< 4.81E-06	1.05E-06	< 3.09E-06	< 1.29E-05	3.12E-06
m-Xylene + p-Xylene	108-38-3/106-42-3	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.42E-06	< 1.36E-06	< 2.40E-06	9.24E-06	2.50E-06
Di-n-butylphthalate	84-74-2	4.78E-07	5.40E-08	9.64E-06	2.12E-07	4.47E-07	1.42E-07	3.59E-06	< 1.50E-06	9.64E-06	2.71E-06
Ethylbenzene	100-41-4	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.33E-06	< 1.36E-06	< 1.45E-06	< 2.85E-06	3.65E-07
o-Xylene	95-47-6	< 1.42E-06	< 1.39E-06	< 1.39E-06	< 1.27E-06	< 1.34E-06	< 1.33E-06	< 1.36E-06	< 1.43E-06	2.01E-06	2.06E-07
Benzene	71-43-2	1.15E-06	9.88E-07	1.06E-06	5.62E-06	1.00E-06	< 1.09E-06	< 1.00E-06	< 1.40E-06	5.62E-06	1.09E-06
Naphthalene	91-20-3	6.12E-07	3.50E-07	5.23E-07	0.00E+00	3.70E-07	3.00E-06	3.71E-07	1.01E-06	4.04E-06	1.11E-06
Phenol	108-95-2	2.67E-06	5.19E-07	< 3.61E-08	< 1.44E-07	5.85E-07	5.53E-07	3.96E-07	< 6.72E-07	2.67E-06	5.68E-07
Benzidine	92-87-5	< 4.62E-08	< 8.55E-08	< 5.12E-08	< 1.03E-07	< 3.84E-08	2.79E-07	< 8.97E-08	< 3.80E-07	4.54E-06	1.04E-06
o-Toluidine	95-53-4	< 3.24E-08	< 7.35E-08	< 3.01E-08	< 1.13E-07	< 2.99E-08	< 1.05E-07	< 6.58E-08	< 3.07E-07	2.21E-06	5.92E-07
Hexachlorobutadiene	87-68-3	< 1.02E-07	< 2.61E-07	< 9.94E-08	< 1.88E-07	< 9.54E-08	< 3.36E-07	< 2.26E-07	< 2.84E-07	< 6.39E-07	1.49E-07
Cumene	98-82-8	5.08E-08	< 4.05E-08	4.82E-08	< 7.27E-08	4.27E-08	9.44E-08	2.24E-08	< 2.12E-07	2.76E-06	6.37E-07
1,2,4-Trichlorobenzene	120-82-1	< 5.08E-08	< 1.50E-07	1.66E-08	< 1.39E-07	< 4.84E-08	< 1.93E-07	< 1.30E-07	< 1.61E-07	< 3.64E-07	8.77E-08
2-Methylphenol	95-48-7	< 5.24E-08	< 1.28E-07	< 4.97E-08	< 2.06E-07	1.42E-08	< 2.07E-07	< 1.14E-07	< 1.50E-07	< 3.33E-07	9.05E-08
3/4-Methylphenol	108-39-4/106-44-5	< 4.93E-08	7.35E-08	< 4.67E-08	< 1.93E-07	6.69E-08	< 1.97E-07	5.68E-08	< 1.40E-07	< 3.14E-07	8.41E-08
1,4-Dichlorobenzene	106-46-7	8.94E-08	9.15E-08	5.27E-08	5.01E-08	9.11E-08	< 1.59E-07	8.08E-08	< 9.32E-08	< 1.75E-07	3.96E-08
Dimethylphthalate	131-11-3	6.62E-08	5.55E-08	6.18E-08	< 8.14E-08	< 2.28E-08	9.90E-08	< 6.13E-08	< 8.61E-08	1.80E-07	4.14E-08
Biphenyl	92-52-4	< 2.31E-08	< 6.00E-08	< 2.41E-08	< 7.77E-08	< 2.14E-08	< 7.75E-08	< 5.38E-08	< 8.47E-08	3.06E-07	6.51E-08
Dibenzofuran	132-64-9	5.70E-08	4.05E-08	3.31E-08	< 6.52E-08	3.99E-08	< 6.21E-08	4.19E-08	< 6.10E-08	1.54E-07	3.27E-08

A blank space indicates that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.
A "0" indicates a blank correction that resulted in a "0" or a negative value.

Table 3 - 8. HOT AIR OVEN CURE EMISSION FACTOR SUMMARY
(HAPS Listed Alphabetically)

Chemical Compound	CAS Numbers	Cmpd. #5 (a) lbs\lb rubber	Cmpd. #8 (a) lbs\lb rubber	Cmpd. #22 (a) lbs\lb rubber	MEAN lbs\lb rubber	MAX lbs\lb rubber	STD. DEV. lbs\lb rubber
TOTAL VOCs		5.56E-04	1.68E-03	1.12E-04	7.83E-04	1.68E-03	6.60E-04
TOTAL SPECIATED ORGANICS		< 8.77E-04	< 2.06E-03	< 3.36E-03	< 2.10E-03	< 3.36E-03	1.01E-03
TOTAL ORGANIC HAPs		< 1.38E-04	< 1.09E-03	< 2.03E-03	< 1.08E-03	< 2.03E-03	7.73E-04
Individual HAPs:							
1,1-Dichloroethane	00075-34-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1-Dichloroethene	00075-35-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1,1-Trichloroethane	00071-55-6	1.12E-06	< 4.26E-06	< 5.84E-06	< 3.74E-06	< 5.84E-06	1.96E-06
1,1,2-Trichloroethane	00079-00-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1,2,2-Tetrachloroethane	00079-34-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
1,2-Dibromoethane	00106-93-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dichloroethane	00107-06-2	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dichloropropane	00078-87-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2,4-Trichlorobenzene	120-82-1	< 9.94E-08	< 7.23E-08	< 1.83E-07	< 1.18E-07	< 1.83E-07	4.71E-08
1,3-Butadiene	00106-99-0	< 3.58E-07	1.24E-06	< 3.23E-07	< 6.39E-07	1.24E-06	4.23E-07
1,4-Dichlorobenzene	00106-46-7	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,4-Dioxane	00123-91-1	< 5.18E-06	< 1.70E-05	< 2.33E-05	< 1.52E-05	< 2.33E-05	7.53E-06
1,4-Phenylenediamine	106-50-3	< 9.94E-08	< 7.23E-08	< 1.83E-07	< 1.18E-07	< 1.83E-07	4.71E-08
2-Butanone	00078-93-3	1.62E-06	< 8.52E-06	< 1.17E-05	< 7.27E-06	< 1.17E-05	4.20E-06
2-Methylphenol	95-48-7	< 1.25E-07	< 8.50E-08	< 2.12E-07	< 1.41E-07	< 2.12E-07	5.30E-08
2,3,4-Trimethylpentane	00565-75-3	< 3.78E-07	5.54E-07	5.79E-06	< 2.24E-06	5.79E-06	2.51E-06
2,4-Dinitrophenol	005-12-85	< 6.15E-07	< 5.19E-07	< 1.29E-06	< 8.07E-07	< 1.29E-06	3.41E-07
2,4-Dinitrotoluene	121-14-2	< 1.44E-07	< 1.22E-07	< 3.02E-07	< 1.89E-07	< 3.02E-07	8.00E-08
2,4,5-Trichlorophenol	95-95-4	< 1.30E-07	< 1.08E-07	< 2.70E-07	< 1.69E-07	< 2.70E-07	7.16E-08
2,4,6-Trichlorophenol	88-06-2	< 1.27E-07	< 1.06E-07	< 2.61E-07	< 1.65E-07	< 2.61E-07	6.88E-08
3,3'-Dichlorobenzidine	91-94-1	< 8.33E-08	< 5.95E-08	< 1.19E-07	< 8.73E-08	< 1.19E-07	2.44E-08
3,3'-Dimethoxybenzidine	119-90-4	< 1.31E-07	< 9.46E-08	< 1.89E-07	< 1.38E-07	< 1.89E-07	3.87E-08
3,3'-Dimethylbenzidine	119-93-7	< 4.81E-08	< 3.51E-08	< 6.97E-08	< 5.09E-08	< 6.97E-08	1.43E-08
3/4-Methylphenol	108-39-4/106-44-5	3.19E-07	< 8.19E-08	2.03E-07	< 2.01E-07	3.19E-07	9.68E-08
4-Aminobiphenyl	92-67-1	< 4.97E-08	< 4.15E-08	< 9.29E-08	< 6.13E-08	< 9.29E-08	2.26E-08
4-Methyl-2-pentanone	00108-10-1	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
4-Nitrobiphenyl	92-93-3	< 9.30E-08	< 7.55E-08	< 1.71E-07	< 1.13E-07	< 1.71E-07	4.16E-08
4-Nitrophenol	100-02-7	< 2.98E-07	< 2.51E-07	< 6.21E-07	< 3.90E-07	< 6.21E-07	1.65E-07
4,4'-Methylenedianiline	101-77-9	< 1.17E-07	< 8.40E-08	< 1.68E-07	< 1.23E-07	< 1.68E-07	3.47E-08
4,6-Dinitro-2-methylphenol	534-52-1	< 2.69E-07	< 2.21E-07	< 4.99E-07	< 3.30E-07	< 4.99E-07	1.21E-07
Acetonitrile	75-05-8	6.31E-07	< 8.52E-06	< 1.17E-05	< 6.94E-06	< 1.17E-05	4.64E-06
Acetophenone	00098-86-2	3.06E-07	2.13E-04	1.46E-05	7.60E-05	2.13E-04	9.71E-05
Acrolein	00107-02-8	7.92E-07	< 8.52E-06	9.34E-06	< 6.22E-06	9.34E-06	3.85E-06
Acrylonitrile	00107-13-1	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Allyl Chloride	00107-05-1	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Aniline	62-53-3	< 7.53E-08	1.48E-07	8.85E-07	< 3.69E-07	8.85E-07	3.66E-07
a,a,a-Trichlorotoluene	98-07-7	< 9.30E-08	< 6.80E-08	< 1.71E-07	< 1.11E-07	< 1.71E-07	4.40E-08
Benzene	00071-43-2	1.46E-06	4.88E-05	4.04E-06	1.81E-05	4.88E-05	2.17E-05
Benzidine	92-87-5	< 4.97E-08	< 3.51E-08	< 6.97E-08	< 5.15E-08	< 6.97E-08	1.42E-08
Benzyl Chloride	00100-44-7	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Biphenyl	92-52-4	3.77E-07	3.92E-07	< 3.96E-06	< 1.58E-06	< 3.96E-06	1.69E-06
bis(2-Chloroethyl)ether	111-44-4	< 1.14E-07	< 7.87E-08	< 1.94E-07	< 1.29E-07	< 1.94E-07	4.85E-08
bis(2-Ethylhexyl)phthalate	117-81-7	< 2.72E-08	2.74E-07	1.05E-06	< 4.52E-07	1.05E-06	4.37E-07
Bromoform	00075-25-2	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Bromomethane	00074-83-9	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Carbon Disulfide	00075-15-0	1.60E-06	4.69E-04	1.20E-03	5.56E-04	1.20E-03	4.92E-04
Carbon Tetrachloride	00056-23-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Carbonyl Sulfide	463-58-1	< 3.23E-06	< 2.13E-05	< 2.86E-05	< 1.77E-05	< 2.86E-05	1.07E-05
Chlorobenzene	00108-90-7	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chloroethane	00075-00-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chloroform	00067-66-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chloromethane	00074-87-3	4.21E-07	< 4.26E-06	< 5.84E-06	< 3.51E-06	< 5.84E-06	2.27E-06
Cumene	98-82-8	< 5.13E-08	8.08E-08	3.86E-07	< 1.73E-07	3.86E-07	1.51E-07
Dibenzofuran	132-64-9	1.95E-06	2.10E-06	3.29E-06	< 2.45E-06	3.29E-06	5.97E-07
Dimethylaminoazobenzene	60-11-7	< 7.37E-08	< 5.32E-08	< 1.04E-07	< 7.71E-08	< 1.04E-07	2.11E-08
Dimethylphthalate	131-11-3	4.65E-08	3.19E-08	< 8.71E-08	< 5.52E-08	< 8.71E-08	2.33E-08
Di-n-butylphthalate	84-74-2	7.61E-06	0.00E+00	1.00E-06	2.87E-06	7.61E-06	3.38E-06
Epichlorohydrin	00106-89-8	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Ethylbenzene	00100-41-4	< 3.51E-07	< 2.31E-07	< 3.17E-07	< 3.00E-07	< 3.51E-07	5.04E-08

Table 3 - 8. HOT AIR OVEN CURE EMISSION FACTOR SUMMARY
(HAPS Listed Alphabetically)

Chemical Compound	CAS Numbers	Cmpd. #5 (a) lbs\lb rubber	Cmpd. #8 (a) lbs\lb rubber	Cmpd. #22 (a) lbs\lb rubber	MEAN lbs\lb rubber	MAX lbs\lb rubber	STD. DEV. lbs\lb rubber
Hexachloro-1,3-butadiene	00087-68-3	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Hexachlorobenzene	118-74-1	< 1.03E-07	< 8.40E-08	< 1.89E-07	< 1.25E-07	< 1.89E-07	4.56E-08
Hexachlorobutadiene	87-68-3	< 1.59E-07	< 1.16E-07	< 2.93E-07	< 1.89E-07	< 2.93E-07	7.55E-08
Hexachlorocyclopentadiene	77-47-4	< 1.55E-07	< 1.32E-07	< 3.25E-07	< 2.04E-07	< 3.25E-07	8.61E-08
Hexachloroethane	67-72-1	< 2.05E-07	< 1.40E-07	< 3.51E-07	< 2.32E-07	< 3.51E-07	8.82E-08
Hydroquinone	123-31-9	< 8.82E-08	< 6.49E-08	< 1.63E-07	< 1.05E-07	< 1.63E-07	4.17E-08
Isooctane	00540-84-1	1.79E-06	< 2.49E-07	< 3.41E-07	< 7.95E-07	1.79E-06	7.08E-07
Isophorone	78-59-1	< 4.97E-08	< 3.61E-08	< 9.00E-08	< 5.86E-08	< 9.00E-08	2.29E-08
Methylene bis-chloroaniline	101-14-4	< 1.57E-07	< 1.14E-07	< 2.26E-07	< 1.66E-07	< 2.26E-07	4.64E-08
Methylene Chloride	00075-09-2	2.59E-05	5.86E-05	3.21E-04	1.35E-04	3.21E-04	1.32E-04
m-Xylene	00108-38-3	< 3.51E-07	1.33E-06	< 3.17E-07	< 6.66E-07	1.33E-06	4.70E-07
Naphthalene	91-20-3	1.34E-06	1.07E-06	2.32E-06	1.58E-06	2.32E-06	5.35E-07
n-Hexane	00110-54-3	3.90E-06	3.13E-06	6.86E-06	4.63E-06	6.86E-06	1.61E-06
Nitrobenzene	98-95-3	< 8.98E-08	< 6.59E-08	< 1.65E-07	< 1.07E-07	< 1.65E-07	4.24E-08
n-Nitrosodimethylamine	62-75-9	< 2.05E-07	< 1.40E-07	< 3.48E-07	< 2.31E-07	< 3.48E-07	8.69E-08
n-Nitrosomorpholine	59-89-2	< 2.45E-07	< 1.68E-07	< 4.18E-07	< 2.77E-07	< 4.18E-07	1.05E-07
N,N-Dimethylaniline	121-69-7	< 6.89E-08	< 5.00E-08	< 1.26E-06	< 4.60E-07	< 1.26E-06	5.66E-07
o-Anisidine	90-04-0	< 1.31E-07	< 9.57E-08	< 2.44E-07	< 1.57E-07	< 2.44E-07	6.31E-08
o-Toluidine	95-53-4	< 8.17E-08	< 5.63E-08	< 1.39E-07	< 9.25E-08	< 1.39E-07	3.47E-08
o-Xylene	00095-47-6	5.44E-07	4.92E-05	< 3.17E-07	< 1.67E-05	4.92E-05	2.30E-05
Pentachloronitrobenzene	82-68-8	< 3.48E-07	< 2.86E-07	< 6.47E-07	< 4.27E-07	< 6.47E-07	1.58E-07
Pentachlorophenol	87-86-5	< 1.62E-07	< 1.33E-07	< 2.99E-07	< 1.98E-07	< 2.99E-07	7.24E-08
Phenol	108-95-2	1.20E-06	3.41E-07	2.16E-06	1.23E-06	2.16E-06	7.44E-07
Propylene Oxide	00075-56-9	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
p-Xylene	00106-42-3	1.93E-06	2.95E-06	2.53E-05	1.01E-05	2.53E-05	1.08E-05
Styrene	00100-42-5	8.61E-07	4.25E-07	4.51E-07	5.79E-07	8.61E-07	2.00E-07
Substituted Benzene	71-43-2		2.13E-06		2.13E-06	2.13E-06	NA
Substituted Naphthalene	91-20-3	1.89E-05			1.89E-05	1.89E-05	NA
Substituted Quinoline	91-22-5			1.23E-04	1.23E-04	1.23E-04	NA
t-Butyl Methyl Ether	01634-04-4	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Tetrachloroethene	00127-18-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Toluene	00108-88-3	2.75E-06	4.37E-06	5.25E-06	4.12E-06	5.25E-06	1.04E-06
Trichloroethene	00079-01-6	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Trifluralin	1582-09-8	< 1.72E-07	< 1.45E-07	< 3.57E-07	< 2.24E-07	< 3.57E-07	9.44E-08
Vinyl Acetate	00108-05-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Vinyl Chloride	00075-01-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06

(a) - Compound 5 was green unextruded rubber. Compounds 8 and 22 were preextruded general products.

A "0.00" signifies a value that was blank-corrected to zero or a negative value.

A blank space means that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.

Table 3 - 8A. HOT AIR OVEN CURE EMISSION FACTOR SUMMARY
(HAPS Listed in Descending Order by Means)

Chemical Compound	CAS Numbers	Cmpd. #5 (a) lbs\lb rubber	Cmpd. #8 (a) lbs\lb rubber	Cmpd. #22 (a) lbs\lb rubber	MEAN lbs\lb rubber	MAX lbs\lb rubber	STD. DEV. lbs\lb rubber
TOTAL VOCs		5.56E-04	1.68E-03	1.12E-04	7.83E-04	1.68E-03	6.60E-04
TOTAL SPECIATED ORGANICS		< 8.77E-04	< 2.06E-03	< 3.36E-03	< 2.10E-03	< 3.36E-03	1.01E-03
TOTAL ORGANIC HAPs		< 1.38E-04	< 1.09E-03	< 2.03E-03	< 1.08E-03	< 2.03E-03	7.73E-04
Individual HAPs:							
Carbon Disulfide	00075-15-0	1.60E-06	4.69E-04	1.20E-03	5.56E-04	1.20E-03	4.92E-04
Methylene Chloride	00075-09-2	2.59E-05	5.86E-05	3.21E-04	1.35E-04	3.21E-04	1.32E-04
Substituted Quinoline	91-22-5			1.23E-04	1.23E-04	1.23E-04	NA
Acetophenone	00098-86-2	3.06E-07	2.13E-04	1.46E-05	7.60E-05	2.13E-04	9.71E-05
Substituted Naphthalene	91-20-3	1.89E-05			1.89E-05	1.89E-05	NA
Benzene	00071-43-2	1.46E-06	4.88E-05	4.04E-06	1.81E-05	4.88E-05	2.17E-05
Carbonyl Sulfide	463-58-1	< 3.23E-06	< 2.13E-05	< 2.86E-05	< 1.77E-05	< 2.86E-05	1.07E-05
o-Xylene	00095-47-6	5.44E-07	4.92E-05	< 3.17E-07	< 1.67E-05	4.92E-05	2.30E-05
1,4-Dioxane	00123-91-1	< 5.18E-06	< 1.70E-05	< 2.33E-05	< 1.52E-05	< 2.33E-05	7.53E-06
p-Xylene	00106-42-3	1.93E-06	2.95E-06	2.53E-05	1.01E-05	2.53E-05	1.08E-05
Benzyl Chloride	00100-44-7	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
1,2-Dibromo-3-Chloropropane	00096-12-8	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Hexachloro-1,3-butadiene	00087-68-3	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Allyl Chloride	00107-05-1	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
t-Butyl Methyl Ether	01634-04-4	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Propylene Oxide	00075-56-9	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Epichlorohydrin	00106-89-8	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
Acrylonitrile	00107-13-1	< 2.59E-06	< 8.52E-06	< 1.17E-05	< 7.59E-06	< 1.17E-05	3.77E-06
2-Butanone	00078-93-3	1.62E-06	< 8.52E-06	< 1.17E-05	< 7.27E-06	< 1.17E-05	4.20E-06
Acetonitrile	75-05-8	6.31E-07	< 8.52E-06	< 1.17E-05	< 6.94E-06	< 1.17E-05	4.64E-06
Acrolein	00107-02-8	7.92E-07	< 8.52E-06	9.34E-06	< 6.22E-06	9.34E-06	3.85E-06
n-Hexane	00110-54-3	3.90E-06	3.13E-06	6.86E-06	4.63E-06	6.86E-06	1.61E-06
Toluene	00108-88-3	2.75E-06	4.37E-06	5.25E-06	4.12E-06	5.25E-06	1.04E-06
1,4-Dichlorobenzene	00106-46-7	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chloroform	00067-66-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Tetrachloroethene	00127-18-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Trichloroethene	00079-01-6	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Vinyl Acetate	00108-05-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1-Dichloroethane	00075-34-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Carbon Tetrachloride	00056-23-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Vinyl Chloride	00075-01-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
4-Methyl-2-pentanone	00108-10-1	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dichloropropane	00078-87-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dichloroethane	00107-06-2	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1-Dichloroethene	00075-35-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1,2-Trichloroethane	00079-00-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chloroethane	00075-00-3	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Chlorobenzene	00108-90-7	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1,2,2-Tetrachloroethane	00079-34-5	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,2-Dibromoethane	00106-93-4	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Bromomethane	00074-83-9	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
Bromoform	00075-25-2	< 1.29E-06	< 4.26E-06	< 5.84E-06	< 3.80E-06	< 5.84E-06	1.88E-06
1,1,1-Trichloroethane	00071-55-6	1.12E-06	< 4.26E-06	< 5.84E-06	< 3.74E-06	< 5.84E-06	1.96E-06
Chloromethane	00074-87-3	4.21E-07	< 4.26E-06	< 5.84E-06	< 3.51E-06	< 5.84E-06	2.27E-06
Di-n-butylphthalate	84-74-2	7.61E-06	0.00E+00	1.00E-06	2.87E-06	7.61E-06	3.38E-06
Dibenzofuran	132-64-9	1.95E-06	2.10E-06	3.29E-06	< 2.45E-06	3.29E-06	5.97E-07
2,3,4-Trimethylpentane	00565-75-3	< 3.78E-07	5.54E-07	5.79E-06	< 2.24E-06	5.79E-06	2.51E-06
Substituted Benzene	71-43-2		2.13E-06		2.13E-06	2.13E-06	NA
Biphenyl	92-52-4	3.77E-07	3.92E-07	< 3.96E-06	< 1.58E-06	< 3.96E-06	1.69E-06
Naphthalene	91-20-3	1.34E-06	1.07E-06	2.32E-06	1.58E-06	2.32E-06	5.35E-07
Phenol	108-95-2	1.20E-06	3.41E-07	2.16E-06	1.23E-06	2.16E-06	7.44E-07
2,4-Dinitrophenol	005-12-85	< 6.15E-07	< 5.19E-07	< 1.29E-06	< 8.07E-07	< 1.29E-06	3.41E-07
Isooctane	00540-84-1	1.79E-06	< 2.49E-07	< 3.41E-07	< 7.95E-07	1.79E-06	7.08E-07
m-Xylene	00108-38-3	< 3.51E-07	1.33E-06	< 3.17E-07	< 6.66E-07	1.33E-06	4.70E-07
1,3-Butadiene	00106-99-0	< 3.58E-07	1.24E-06	< 3.23E-07	< 6.39E-07	1.24E-06	4.23E-07

Table 3 - 8A. HOT AIR OVEN CURE EMISSION FACTOR SUMMARY
(HAPS Listed in Descending Order by Means)

Chemical Compound	CAS Numbers	Cmpd. #5 (a) lbs\lb rubber	Cmpd. #8 (a) lbs\lb rubber	Cmpd. #22 (a) lbs\lb rubber	MEAN lbs\lb rubber	MAX lbs\lb rubber	STD. DEV. lbs\lb rubber
Styrene	00100-42-5	8.61E-07	4.25E-07	4.51E-07	5.79E-07	8.61E-07	2.00E-07
N,N-Dimethylaniline	121-69-7	< 6.89E-08	< 5.00E-08	< 1.26E-06	< 4.60E-07	< 1.26E-06	5.66E-07
bis(2-Ethylhexyl)phthalate	117-81-7	< 2.72E-08	2.74E-07	1.05E-06	< 4.52E-07	1.05E-06	4.37E-07
Pentachloronitrobenzene	82-68-8	< 3.48E-07	< 2.86E-07	< 6.47E-07	< 4.27E-07	< 6.47E-07	1.58E-07
4-Nitrophenol	100-02-7	< 2.98E-07	< 2.51E-07	< 6.21E-07	< 3.90E-07	< 6.21E-07	1.65E-07
Aniline	62-53-3	< 7.53E-08	1.48E-07	8.85E-07	< 3.69E-07	8.85E-07	3.66E-07
4,6-Dinitro-2-methylphenol	534-52-1	< 2.69E-07	< 2.21E-07	< 4.99E-07	< 3.30E-07	< 4.99E-07	1.21E-07
Ethylbenzene	00100-41-4	< 3.51E-07	< 2.31E-07	< 3.17E-07	< 3.00E-07	< 3.51E-07	5.04E-08
n-Nitrosomorpholine	59-89-2	< 2.45E-07	< 1.68E-07	< 4.18E-07	< 2.77E-07	< 4.18E-07	1.05E-07
Hexachloroethane	67-72-1	< 2.05E-07	< 1.40E-07	< 3.51E-07	< 2.32E-07	< 3.51E-07	8.82E-08
n-Nitrosodimethylamine	62-75-9	< 2.05E-07	< 1.40E-07	< 3.48E-07	< 2.31E-07	< 3.48E-07	8.69E-08
Trifluralin	1582-09-8	< 1.72E-07	< 1.45E-07	< 3.57E-07	< 2.24E-07	< 3.57E-07	9.44E-08
Hexachlorocyclopentadiene	77-47-4	< 1.55E-07	< 1.32E-07	< 3.25E-07	< 2.04E-07	< 3.25E-07	8.61E-08
3/4-Methylphenol	108-39-4/106-44-5	3.19E-07	< 8.19E-08	2.03E-07	< 2.01E-07	3.19E-07	9.68E-08
Pentachlorophenol	87-86-5	< 1.62E-07	< 1.33E-07	< 2.99E-07	< 1.98E-07	< 2.99E-07	7.24E-08
2,4-Dinitrotoluene	121-14-2	< 1.44E-07	< 1.22E-07	< 3.02E-07	< 1.89E-07	< 3.02E-07	8.00E-08
Hexachlorobutadiene	87-68-3	< 1.59E-07	< 1.16E-07	< 2.93E-07	< 1.89E-07	< 2.93E-07	7.55E-08
Cumene	98-82-8	< 5.13E-08	8.08E-08	3.86E-07	< 1.73E-07	3.86E-07	1.51E-07
2,4,5-Trichlorophenol	95-95-4	< 1.30E-07	< 1.08E-07	< 2.70E-07	< 1.69E-07	< 2.70E-07	7.16E-08
Methylene bis-chloroaniline	101-14-4	< 1.57E-07	< 1.14E-07	< 2.26E-07	< 1.66E-07	< 2.26E-07	4.64E-08
2,4,6-Trichlorophenol	88-06-2	< 1.27E-07	< 1.06E-07	< 2.61E-07	< 1.65E-07	< 2.61E-07	6.88E-08
o-Anisidine	90-04-0	< 1.31E-07	< 9.57E-08	< 2.44E-07	< 1.57E-07	< 2.44E-07	6.31E-08
2-Methylphenol	95-48-7	< 1.25E-07	< 8.50E-08	< 2.12E-07	< 1.41E-07	< 2.12E-07	5.30E-08
3,3'-Dimethoxybenzidine	119-90-4	< 1.31E-07	< 9.46E-08	< 1.89E-07	< 1.38E-07	< 1.89E-07	3.87E-08
bis(2-Chloroethyl)ether	111-44-4	< 1.14E-07	< 7.87E-08	< 1.94E-07	< 1.29E-07	< 1.94E-07	4.85E-08
Hexachlorobenzene	118-74-1	< 1.03E-07	< 8.40E-08	< 1.89E-07	< 1.25E-07	< 1.89E-07	4.56E-08
4,4'-Methylenedianiline	101-77-9	< 1.17E-07	< 8.40E-08	< 1.68E-07	< 1.23E-07	< 1.68E-07	3.47E-08
1,4-Phenylenediamine	106-50-3	< 9.94E-08	< 7.23E-08	< 1.83E-07	< 1.18E-07	< 1.83E-07	4.71E-08
1,2,4-Trichlorobenzene	120-82-1	< 9.94E-08	< 7.23E-08	< 1.83E-07	< 1.18E-07	< 1.83E-07	4.71E-08
4-Nitrobiphenyl	92-93-3	< 9.30E-08	< 7.55E-08	< 1.71E-07	< 1.13E-07	< 1.71E-07	4.16E-08
a,a,a-Trichlorotoluene	98-07-7	< 9.30E-08	< 6.80E-08	< 1.71E-07	< 1.11E-07	< 1.71E-07	4.40E-08
Nitrobenzene	98-95-3	< 8.98E-08	< 6.59E-08	< 1.65E-07	< 1.07E-07	< 1.65E-07	4.24E-08
Hydroquinone	123-31-9	< 8.82E-08	< 6.49E-08	< 1.63E-07	< 1.05E-07	< 1.63E-07	4.17E-08
o-Toluidine	95-53-4	< 8.17E-08	< 5.63E-08	< 1.39E-07	< 9.25E-08	< 1.39E-07	3.47E-08
3,3'-Dichlorobenzidine	91-94-1	< 8.33E-08	< 5.95E-08	< 1.19E-07	< 8.73E-08	< 1.19E-07	2.44E-08
Dimethylaminoazobenzene	60-11-7	< 7.37E-08	< 5.32E-08	< 1.04E-07	< 7.71E-08	< 1.04E-07	2.11E-08
4-Aminobiphenyl	92-67-1	< 4.97E-08	< 4.15E-08	< 9.29E-08	< 6.13E-08	< 9.29E-08	2.26E-08
Isophorone	78-59-1	< 4.97E-08	< 3.61E-08	< 9.00E-08	< 5.86E-08	< 9.00E-08	2.29E-08
Dimethylphthalate	131-11-3	4.65E-08	3.19E-08	< 8.71E-08	< 5.52E-08	< 8.71E-08	2.33E-08
Benzidine	92-87-5	< 4.97E-08	< 3.51E-08	< 6.97E-08	< 5.15E-08	< 6.97E-08	1.42E-08
3,3'-Dimethylbenzidine	119-93-7	< 4.81E-08	< 3.51E-08	< 6.97E-08	< 5.09E-08	< 6.97E-08	1.43E-08

(a) - Compound 5 was green unextruded rubber. Compounds 8 and 22 were preextruded general products.

A "0.00" signifies a value that was blank-corrected to zero or a negative value.

A blank space means that the compound was a Tentatively Identified Compound (TIC) and was not detected in that sample.

TABLE 3-9. GRINDING OPERATIONS EMISSION FACTOR SUMMARY (UNCONTROLLED)
(HAPs Listed Alphabetically)

Pollutant Category	CAS #	Sidewall Grinding (a) lb/lb-rubber	Carcass Grinding (a) lb/lb-rubber	Belt Grinding (a) lb/lb-rubber	STATISTICS Mean lb/lb-rubber	Max. lb/lb-rubber	Std. Dev. lb/lb-rubber	Retread Buffing (b) lb/lb-rubber
TOTAL VOCs		1.57E-02	5.18E-04	1.79E-03	6.00E-03	1.57E-02	6.88E-03	2.40E-04
TOTAL SPECIATED ORGANICS		< 1.02E-02	< 1.64E-02	< 2.63E-03	< 9.74E-03	< 1.64E-02	5.63E-03	< 1.13E-05
TOTAL METAL HAPs		7.01E-05	6.52E-06	2.69E-05	3.45E-05	7.01E-05	2.65E-05	5.18E-08
TOTAL ORGANIC HAPs		< 1.26E-03	< 1.39E-02	< 2.04E-03	< 5.73E-03	< 1.39E-02	5.78E-03	< 7.09E-07
TOTAL PARTICULATE MATTER (PM) (c)		1.23	0.55	1.19	0.99	1.23	0.31	9.48E-03
TOTAL HAPs (d)		**< 1.33E-03**	**< 1.39E-02**	**< 2.07E-03**	**< 5.77E-03**	**< 1.39E-02**	**5.76E-03**	< 7.60E-07
Individual HAPs:								
1,3-Butadiene	106-99-0	< 2.44E-05	2.65E-05	2.41E-05	< 2.50E-05	2.65E-05	1.05E-06	< 8.00E-10
1,4-Dichlorobenzene	00106-46-7	< 4.64E-06	< 5.70E-07	< 6.27E-07	< 1.95E-06	< 4.64E-06	1.91E-06	2.63E-09
2-Butanone	00078-93-3	< 4.63E-05	< 7.04E-07	< 1.16E-05	< 1.96E-05	< 4.63E-05	1.95E-05	2.52E-10
4-Methyl-2-pentanone	00108-10-1	< 2.85E-05	1.92E-05	< 6.50E-06	< 1.81E-05	< 2.85E-05	9.03E-06	1.41E-08
Acetaldehyde	75-07-0			1.02E-05	1.02E-05	1.02E-05	NA	
Acetophenone	98-86-2	3.37E-06	< 8.52E-07	5.90E-06	< 3.38E-06	5.90E-06	2.06E-06	1.89E-08
Acrolein	00107-02-8	< 5.71E-05	< 1.89E-06	< 1.18E-05	< 2.36E-05	< 5.71E-05	2.40E-05	7.84E-09
Aniline	62-53-3	4.05E-04	1.97E-05	< 7.17E-07	< 1.42E-04	4.05E-04	1.86E-04	6.66E-08
Benzene	71-43-2	1.33E-05	< 4.25E-06	< 8.80E-07	< 6.13E-06	1.33E-05	5.23E-06	1.66E-07
Biphenyl	92-52-4	< 2.56E-06	< 4.90E-07	< 3.81E-07	< 1.15E-06	< 2.56E-06	1.00E-06	6.63E-09
bis(2-Ethylhexyl)phthalate	117-81-7	1.84E-05	7.94E-06	5.30E-05	2.64E-05	5.30E-05	1.92E-05	1.99E-08
Carbon Disulfide	00075-15-0	< 2.73E-05	1.40E-06	3.03E-04	< 1.11E-04	3.03E-04	1.36E-04	1.13E-08
Dibenzofuran	132-64-9	< 2.00E-06	1.59E-07	< 2.84E-07	< 8.14E-07	< 2.00E-06	8.39E-07	< 3.64E-09
Di-n-butylphthalate	84-74-2	1.69E-06	< 2.28E-06	3.31E-06	< 2.43E-06	3.31E-06	6.67E-07	3.87E-08
Ethylbenzene	100-41-4	5.70E-05	< 3.94E-07	< 8.97E-07	< 1.94E-05	5.70E-05	2.66E-05	< 1.78E-10
Isooctane	540-84-1	1.15E-04	< 1.10E-05	< 9.65E-07	< 4.22E-05	1.15E-04	5.14E-05	< 1.92E-10
Isophorone	78-59-1	< 2.59E-06	< 5.47E-07	< 4.26E-07	< 1.19E-06	< 2.59E-06	9.94E-07	6.46E-09
Methylene Chloride	75-09-2	< 3.36E-05	4.19E-03	(e) 4.98E-05	< 1.42E-03	4.19E-03	1.96E-03	2.79E-09
m-Xylene + p-Xylene	108-38-3/106-42-3	< 3.21E-05	< 2.30E-06	8.51E-06	< 1.43E-05	< 3.21E-05	1.28E-05	< 9.61E-10
Naphthalene	91-20-5	3.81E-06	5.81E-07	4.02E-06	2.80E-06	4.02E-06	1.57E-06	2.11E-08
n-Hexane	110-54-3	1.24E-04	< 1.60E-05	4.18E-05	< 6.06E-05	1.24E-04	4.61E-05	< 1.93E-10
o-Toluidine	95-53-4	< 3.93E-06	2.55E-06	< 6.63E-07	< 2.38E-06	< 3.93E-06	1.34E-06	< 7.56E-09
o-Xylene	95-47-6	< 1.90E-05	< 3.94E-07	5.40E-06	< 8.27E-06	< 1.90E-05	7.88E-06	< 7.62E-10
Phenol	108-95-2	1.57E-05	< 1.79E-06	8.88E-06	< 8.80E-06	1.57E-05	5.69E-06	3.04E-07
Tetrachloroethene	127-18-4	< 2.85E-05	< 5.70E-07	1.39E-04	< 5.62E-05	1.39E-04	6.00E-05	< 2.23E-10
Toluene	108-88-3	1.86E-04	9.59E-03	(e) 1.35E-03	3.71E-03	9.59E-03	4.18E-03	< 6.43E-09
Cadmium		1.36E-06	8.62E-07	2.80E-07	8.34E-07	1.36E-06	4.41E-07	
Chromium		2.54E-05	1.59E-06	5.17E-06	1.07E-05	2.54E-05	1.05E-05	2.53E-08
Lead		2.92E-05	2.04E-06	3.18E-06	1.15E-05	2.92E-05	1.25E-05	
Nickel		1.41E-05	2.03E-06	1.83E-05	1.15E-05	1.83E-05	6.90E-06	1.78E-08
Cobalt								8.74E-09

(a) - Sidewall, Carcass, and Belt Grinding - pounds emitted per pound of rubber removed or ground off (lb/lb rubber removed).
(b) - Retread Buffing - pounds emitted per pound of rubber processed (lb/lb rubber processed).
(c) - For uncontrolled PM emissions from Sidewall, Carcass, or Belt Grinding, use a factor of 1.0 lb emitted per lb of rubber removed.
(d) - Total HAP emissions listed here do not included the uncontrolled PM or metal emission factors. User should apply own control efficiency for determining PM or metal emissions. Values shown are the means of three replicate test runs conducted on each grinding operation.
(e) - Value exceeds that of total VOC. This discrepancy is being investigated.

APPENDIX A

COMPARISON OF COMPOUND EMISSIONS BY PROCESS
(Listing Of Evaluated Compounds and Calculated Emission Factors)

TABLE A-1. TIRE MANUFACTURING – ORGANIC EMISSION FACTORS BY PROCESS AND RUBBER COMPOUND

RUBBER COMPOUND	WARMUP MILL (175–200°)	CALENDERING (200°)	EXTRUDER (255–280°)	INTERNAL INTENSIVE MIXING (340° – N.P.) (220–240° – Prod.)	AUTOCLAVE (340°)	PLATEN PRESS (340°)	STATISTICAL SUMMARY Mean	Max.	Std. Dev.
TIRE COMPOUNDS (CMPDS. 1–7)									
1) Tire Inner Liner				X		X			
Total VOC, lb/10^6 lb Rubber				61.1		310.0	61.1	61.1	NA
Total Speciated Organics, lb/10^6 lb Rubber				80.8		1590.0	80.8	80.8	NA
Total Organic HAPs, lb/10^6 lb Rubber				24.40		1310.00	24.4	24.4	NA
HAPs, % of Total Speciated Organics				30.2%		82.4%	30.2%	30.2%	NA
2) Tire Ply Coat	X	X		X		X			
Total VOC, lb/10^6 lb Rubber	110.0	53.1		38.6		151.0	67.2	110.0	30.8
Total Speciated Organics, lb/10^6 lb Rubber	34.7	73.4		66.1		1390.0	58.1	73.4	16.8
Total Organic HAPs, lb/10^6 lb Rubber	7.89	12.20		14.00		1120.00	11.4	14.0	2.6
HAPs, % of Total Speciated Organics	22.7%	16.6%		21.2%		80.6%	20.2%	22.7%	2.6%
3) Tire Belt Coat	X			X		X			
Total VOC, lb/10^6 lb Rubber	112.0			137.0		377.0	124.5	137.0	12.5
Total Speciated Organics, lb/10^6 lb Rubber	43.9			109.0		2850.0	76.5	109.0	32.6
Total Organic HAPs, lb/10^6 lb Rubber	21.60			51.70		2320.00	36.7	51.7	15.0
HAPs, % of Total Speciated Organics	49.2%			47.4%		81.4%	48.3%	49.2%	0.9%
4) Tire Base/Sidewall	X		X	X	X				
Total VOC, lb/10^6 lb Rubber	84.0		8.4	38.6	161.0		43.7	84.0	31.1
Total Speciated Organics, lb/10^6 lb Rubber	50.8		15.0	60.9	562.0		42.2	60.9	19.7
Total Organic HAPs, lb/10^6 lb Rubber	7.74		7.35	9.46	108.00		8.2	9.5	0.9
HAPs, % of Total Speciated Organics	15.2%		49.0%	15.5%	19.2%		26.6%	49.0%	15.8%
5) Tire Apex				X	X	X			
Total VOC, lb/10^6 lb Rubber				215.0	178.0	556.0	215.0	215.0	NA
Total Speciated Organics, lb/10^6 lb Rubber				73.6	554.0	1390.0	73.6	73.6	NA
Total Organic HAPs, lb/10^6 lb Rubber				44.30	183.00	259.00	44.3	44.3	NA
HAPs, % of Total Speciated Organics				60.2%	33.0%	18.6%	60.2%	60.2%	NA
6) Tire Tread			X	X	X				
Total VOC, lb/10^6 lb Rubber			17.6	39.6	133.0		28.6	39.6	11.0
Total Speciated Organics, lb/10^6 lb Rubber			58.7	125.0	827.0		91.9	125.0	33.2
Total Organic HAPs, lb/10^6 lb Rubber			33.90	27.70	86.40		30.8	33.9	3.1
HAPs, % of Total Speciated Organics			57.8%	22.2%	10.4%		40.0%	57.8%	17.8%
7) Tire Curing Bladder				X		X			
Total VOC, lb/10^6 lb Rubber				120.0		93.4	120.0	120.0	NA
Total Speciated Organics, lb/10^6 lb Rubber				116.0		954.0	116.0	116.0	NA
Total Organic HAPs, lb/10^6 lb Rubber				48.60		673.00	48.6	48.6	NA
HAPs, % of Total Speciated Organics				41.9%		70.5%	41.9%	41.9%	NA
AVERAGES BY PROCESS									
Total VOC, lb/10^6 lb Rubber	102.0	53.1	13.0	92.8	NA	NA	65.2	102.0	35.3
Total Speciated Organics, lb/10^6 lb Rubber	43.1	73.4	36.9	90.2	NA	NA	60.9	90.2	21.8
Total Organic HAPs, lb/10^6 lb Rubber	12.4	12.2	20.6	31.5	NA	NA	19.2	31.5	7.9
HAPs, % of Total Speciated Organics	29.1%	16.6%	53.4%	34.1%	NA	NA	33.3%	53.4%	13.2%

TABLE A-2. ENGINEERED PRODUCTS – ORGANIC EMISSION FACTORS BY PROCESS AND RUBBER COMPOUND

RUBBER COMPOUND	WARMUP MILL (175–200°F)	CALENDERING (200°F)	EXTRUDER (255–280°F)	INTERNAL INTENSIVE MIXING (340°F – N.P.) (220–240°F – Prod.)	AUTOCLAVE (340°F)	PLATEN PRESS (340°F)	STATISTICAL SUMMARY Mean	Max.	Std. Dev.
ENGINEERED PRODUCT COMPOUNDS (CMPDS. 1–23)									
1) Tire Inner Liner				X		X			
Total VOC, lb/10^6 lb Rubber				61.1		310.0	185.6	310.0	124.5
Total Speciated Organics, lb/10^6 lb Rubber				80.8		1590.0	835.4	1590.0	754.6
Total Organic HAPs, lb/10^6 lb Rubber				24.40		1310.00	667.2	1310.0	642.8
HAPs, % of Total Speciated Organics				30.2%		82.4%	56.3%	82.4%	26.1%
2) Tire Ply Coat	X	X		X		X			
Total VOC, lb/10^6 lb Rubber	110.0	53.1		38.6		151.0	88.2	151.0	45.0
Total Speciated Organics, lb/10^6 lb Rubber	34.7	73.4		66.1		1390.0	391.1	1390.0	576.9
Total Organic HAPs, lb/10^6 lb Rubber	7.89	12.20		14.00		1120.00	288.5	1120.0	480.1
HAPs, % of Total Speciated Organics	22.7%	16.6%		21.2%		80.6%	35.3%	80.6%	26.2%
3) Tire Belt Coat	X			X		X			
Total VOC, lb/10^6 lb Rubber	112.0			137.0		377.0	208.7	377.0	119.5
Total Speciated Organics, lb/10^6 lb Rubber	43.9			109.0		2850.0	1001.0	2850.0	1307.7
Total Organic HAPs, lb/10^6 lb Rubber	21.60			51.70		2320.00	797.8	2320.0	1076.5
HAPs, % of Total Speciated Organics	49.2%			47.4%		81.4%	59.3%	81.4%	15.6%
4) Tire Base/Sidewall	X		X	X	X				
Total VOC, lb/10^6 lb Rubber	84.0		8.4	38.6	161.0		73.0	161.0	57.5
Total Speciated Organics, lb/10^6 lb Rubber	50.8		15.0	60.9	562.0		172.2	562.0	225.7
Total Organic HAPs, lb/10^6 lb Rubber	7.74		7.35	9.46	108.00		33.1	108.0	43.2
HAPs, % of Total Speciated Organics	15.2%		49.0%	15.5%	19.2%		24.7%	49.0%	14.1%
5) Tire Apex				X	X	X			
Total VOC, lb/10^6 lb Rubber				215.0	178.0	556.0	316.3	556.0	170.1
Total Speciated Organics, lb/10^6 lb Rubber				73.6	554.0	1390.0	672.5	1390.0	543.9
Total Organic HAPs, lb/10^6 lb Rubber				44.30	183.00	259.00	162.1	259.0	88.9
HAPs, % of Total Speciated Organics				60.2%	33.0%	18.6%	37.3%	60.2%	17.2%
6) Tire Tread			X	X	X				
Total VOC, lb/10^6 lb Rubber			17.6	39.6	133.0		63.4	133.0	50.0
Total Speciated Organics, lb/10^6 lb Rubber			58.7	125.0	827.0		336.9	827.0	347.6
Total Organic HAPs, lb/10^6 lb Rubber			33.90	27.70	86.40		49.3	86.4	26.3
HAPs, % of Total Speciated Organics			57.8%	22.2%	10.4%		30.1%	57.8%	20.1%
7) Tire Curing Bladder				X		X			
Total VOC, lb/10^6 lb Rubber				120.0		93.4	106.7	120.0	13.3
Total Speciated Organics, lb/10^6 lb Rubber				116.0		954.0	535.0	954.0	419.0
Total Organic HAPs, lb/10^6 lb Rubber				48.60		673.00	360.8	673.0	312.2
HAPs, % of Total Speciated Organics				41.9%		70.5%	56.2%	70.5%	14.3%
8) EPDM 1			O	X	X				
Total VOC, lb/10^6 lb Rubber				15.5	54.2		34.9	54.2	19.4
Total Speciated Organics, lb/10^6 lb Rubber				60.4	668.0		364.2	668.0	303.8
Total Organic HAPs, lb/10^6 lb Rubber				56.90	485.00		271.0	485.0	214.1
HAPs, % of Total Speciated Organics				94.2%	72.6%		83.4%	94.2%	10.8%

TABLE A-2. ENGINEERED PRODUCTS – ORGANIC EMISSION FACTORS BY PROCESS AND RUBBER COMPOUND

RUBBER COMPOUND	WARMUP MILL (175–200°F)	CALENDERING (200°F)	EXTRUDER (255–280°F)	INTERNAL INTENSIVE MIXING (340°F – N.P.) (220–240°F – Prod.)	AUTOCLAVE (340°F)	PLATEN PRESS (340°F)	STATISTICAL SUMMARY Mean	Max.	Std. Dev.
9) EPDM 2	O	O	X	X	X (1)	X			
Total VOC, lb/10^6 lb Rubber			17.3	28.4	361.0	1680.0	521.7	1680.0	682.9
Total Speciated Organics, lb/10^6 lb Rubber			27.7	65.3	817.0	5700.0	1652.5	5700.0	2357.9
Total Organic HAPs, lb/10^6 lb Rubber			18.00	13.80	125.00	5100.00	1314.2	5100.0	2186.2
HAPs, % of Total Speciated Organics			65.0%	21.1%	15.3%	89.5%	47.7%	89.5%	30.8%
10) EPDM 3			O	X	O	X			
Total VOC, lb/10^6 lb Rubber				290.0		315.0	302.5	315.0	12.5
Total Speciated Organics, lb/10^6 lb Rubber				313.0		2870.0	1591.5	2870.0	1278.5
Total Organic HAPs, lb/10^6 lb Rubber				128.00		2530.00	1329.0	2530.0	1201.0
HAPs, % of Total Speciated Organics				40.9%		88.2%	64.5%	88.2%	23.6%
11) CRW	O	O	O	X	X	X			
Total VOC, lb/10^6 lb Rubber				32.2	93.2	235.0	120.1	235.0	85.0
Total Speciated Organics, lb/10^6 lb Rubber				42.1	355.0	2500.0	965.7	2500.0	1092.4
Total Organic HAPs, lb/10^6 lb Rubber				13.70	131.00	2150.00	764.9	2150.0	980.6
HAPs, % of Total Speciated Organics				32.5%	36.9%	86.0%	51.8%	86.0%	24.2%
12) CRG	X	X		X	O	X			
Total VOC, lb/10^6 lb Rubber	1.7	4.7		15.9		253.0	68.8	253.0	106.5
Total Speciated Organics, lb/10^6 lb Rubber	1.0	4.5		67.0		2610.0	670.6	2610.0	1120.0
Total Organic HAPs, lb/10^6 lb Rubber	0.39	3.38		56.30		2290.00	587.5	2290.0	983.2
HAPs, % of Total Speciated Organics	40.6%	75.3%		84.0%		87.7%	71.9%	87.7%	18.6%
13) Paracryl OZO	O	O	O	X	O	X			
Total VOC, lb/10^6 lb Rubber				228.00		521.00	374.5	521.0	146.5
Total Speciated Organics, lb/10^6 lb Rubber				163.00		2800.00	1481.5	2800.0	1318.5
Total Organic HAPs, lb/10^6 lb Rubber				14.60		2530.00	1272.3	2530.0	1257.7
HAPs, % of Total Speciated Organics				9.0%		90.4%	49.7%	90.4%	40.7%
14) Paracryl BLT	O	O	O	X	O	X			
Total VOC, lb/10^6 lb Rubber				230.0		193.0	211.5	230.0	18.5
Total Speciated Organics, lb/10^6 lb Rubber				147.0		3930.0	2038.5	3930.0	1891.5
Total Organic HAPs, lb/10^6 lb Rubber				42.40		3640.00	1841.2	3640.0	1798.8
HAPs, % of Total Speciated Organics				28.8%		92.6%	60.7%	92.6%	31.9%
15) Hypalon	O	O	O	X	X				
Total VOC, lb/10^6 lb Rubber				9.7	73.4		41.5	73.4	31.9
Total Speciated Organics, lb/10^6 lb Rubber				63.2	508.0		285.6	508.0	222.4
Total Organic HAPs, lb/10^6 lb Rubber				56.50	315.00		185.8	315.0	129.3
HAPs, % of Total Speciated Organics				89.4%	62.0%		75.7%	89.4%	13.7%
16) Fluoroelastomer	O	O	O	X	O	X			
Total VOC, lb/10^6 lb Rubber				81.8		291.0	186.4	291.0	104.6
Total Speciated Organics, lb/10^6 lb Rubber				34.8		1990.0	1012.4	1990.0	977.6
Total Organic HAPs, lb/10^6 lb Rubber				4.99		1660.00	832.5	1660.0	827.5
HAPs, % of Total Speciated Organics				14.3%		83.4%	48.9%	83.4%	34.5%

TABLE A-2. ENGINEERED PRODUCTS – ORGANIC EMISSION FACTORS BY PROCESS AND RUBBER COMPOUND

RUBBER COMPOUND	WARMUP MILL (175–200°F)	CALENDERING (200°F)	EXTRUDER (255–280°F)	INTERNAL INTENSIVE MIXING (340°F – N.F.) (220–240°F – Prod.)	AUTOCLAVE (340°F)	PLATEN PRESS (340°F)	STATISTICAL SUMMARY Mean	Max.	Std. Dev.
17) AEM			O	X	O	X			
Total VOC, lb/10⁶ lb Rubber				443.0		2250.0	1346.5	2250.0	903.5
Total Speciated Organics, lb/10⁶ lb Rubber				320.0		3950.0	2135.0	3950.0	1815.0
Total Organic HAPs, lb/10⁶ lb Rubber				144.00		2180.00	1162.0	2180.0	1018.0
HAPs, % of Total Speciated Organics				45.0%		55.2%	50.1%	55.2%	5.1%
18) Hydrogenated Nitrile	O	O	O	X	X				
Total VOC, lb/10⁶ lb Rubber				64.8	92.7		78.8	92.7	14.0
Total Speciated Organics, lb/10⁶ lb Rubber				135.0	2090.0		1112.5	2090.0	977.5
Total Organic HAPs, lb/10⁶ lb Rubber				46.50	1100.00		573.3	1100.0	526.8
HAPs, % of Total Speciated Organics				34.4%	52.6%		43.5%	52.6%	9.1%
19) Silicone	O	O	O	X	O	X			
Total VOC, lb/10⁶ lb Rubber				27.0		2430.0	1228.5	2430.0	1201.5
Total Speciated Organics, lb/10⁶ lb Rubber				24.0		3600.0	1812.0	3600.0	1788.0
Total Organic HAPs, lb/10⁶ lb Rubber				3.77		575.00	289.4	575.0	285.6
HAPs, % of Total Speciated Organics				15.7%		16.0%	15.8%	16.0%	0.1%
20) Acrylate Rubber	O	O	O	X	O	X			
Total VOC, lb/10⁶ lb Rubber				8.2		226.0	117.1	226.0	108.9
Total Speciated Organics, lb/10⁶ lb Rubber				19.7		2870.0	1444.9	2870.0	1425.2
Total Organic HAPs, lb/10⁶ lb Rubber				7.76		2580.00	1293.9	2580.0	1286.1
HAPs, % of Total Speciated Organics				39.4%		89.9%	64.6%	89.9%	25.3%
21) Chlorinated Polyethylene			O	X	X				
Total VOC, lb/10⁶ lb Rubber				156.0	226.0		191.0	226.0	35.0
Total Speciated Organics, lb/10⁶ lb Rubber				14.0	1960.0		987.0	1960.0	973.0
Total Organic HAPs, lb/10⁶ lb Rubber				4.03	201.00		102.5	201.0	98.5
HAPs, % of Total Speciated Organics				28.8%	10.3%		19.5%	28.8%	9.3%
22) Emulsion SBR (1502)	O	O	X	X	X	X			
Total VOC, lb/10⁶ lb Rubber			12.4	123.0	111.0	468.0	178.6	468.0	172.5
Total Speciated Organics, lb/10⁶ lb Rubber			12.5	92.7	237.0	2890.0	808.1	2890.0	1204.7
Total Organic HAPs, lb/10⁶ lb Rubber			6.83	12.90	46.30	2560.00	656.5	2560.0	1099.1
HAPs, % of Total Speciated Organics			54.6%	13.9%	19.5%	88.6%	44.2%	88.6%	30.0%
23) Epichlorohydrin			O	X		X			
Total VOC, lb/10⁶ lb Rubber				40.2		112.0	76.1	112.0	35.9
Total Speciated Organics, lb/10⁶ lb Rubber				61.9		1410.0	736.0	1410.0	674.1
Total Organic HAPs, lb/10⁶ lb Rubber				40.50		1230.00	635.3	1230.0	594.8
HAPs, % of Total Speciated Organics				65.4%		87.2%	76.3%	87.2%	10.9%

TABLE A-2. ENGINEERED PRODUCTS – ORGANIC EMISSION FACTORS BY PROCESS AND RUBBER COMPOUND

RUBBER COMPOUND	WARMUP MILL (175–200°F)	CALENDERING (200°F)	EXTRUDER (255–280°F)	INTERNAL INTENSIVE MIXING (340°F – N.F.) (220–240°F – Prod.)	AUTOCLAVE (340°F)	PLATEN PRESS (340°F)	STATISTICAL SUMMARY Mean	Max.	Std. Dev.
24) SBR 1712				X **					
Total VOC, lb/10^6 lb Rubber				41.0			41.0	41.0	NA
Total Speciated Organics, lb/10^6 lb Rubber				42.3			42.3	42.3	NA
Total Organic HAPs, lb/10^6 lb Rubber				5.67			5.7	5.7	NA
HAPs, % of Total Speciated Organics				13.4%			13.4%	13.4%	NA
25) SBR 1500				X **					
Total VOC, lb/10^6 lb Rubber				127.0			127.0	127.0	NA
Total Speciated Organics, lb/10^6 lb Rubber				90.3			90.3	90.3	NA
Total Organic HAPs, lb/10^6 lb Rubber				7.76			7.8	7.8	NA
HAPs, % of Total Speciated Organics				8.6%			8.6%	8.6%	NA
26) SBR Duradene				X **					
Total VOC, lb/10^6 lb Rubber				11.0			11.0	11.0	NA
Total Speciated Organics, lb/10^6 lb Rubber				23.4			23.4	23.4	NA
Total Organic HAPs, lb/10^6 lb Rubber				0.57			0.6	0.6	NA
HAPs, % of Total Speciated Organics				1.1%			1.1%	1.1%	NA
AVERAGES BY PROCESS									
Total VOC, lb/10^6 lb Rubber	76.9	28.9	13.9	100.9	148.4	615.4	164.1	615.4	206.7
Total Speciated Organics, lb/10^6 lb Rubber	32.6	38.9	28.5	92.7	857.8	2664.4	619.1	2664.4	961.5
Total Organic HAPs, lb/10^6 lb Rubber	9.4	7.8	16.5	37.69	278.07	2041.59	398.5	2041.6	741.0
HAPs, % of Total Speciated Organics	28.9%	20.0%	58.0%	40.7%	32.4%	76.6%	64.4%	76.6%	19.2%

All factors presented are based on the production or processing of 1 million pounds of rubber.

** – SBR copolymer data are not included in mixing averages.

"X" – denotes a rubber compound that was evaluated for the indicated process.

"O" – denotes a rubber compound that is commonly used in the indicated process, but for which no test data exists. Emission data for that compound can be derived through use of a ratioed factor.

APPENDIX B

RUBBER COMPOUND INFORMATION

INDEX OF RUBBER COMPOUNDS

Compound #1: Tire Inner Liner (BrIIR/NR)

Compound #2: Tire Ply Coat (Natural Rubber/Synthetic Rubber)

Compound #3: Tire Belt Coat (Natural Rubber)

Compound #4: Tire Base/Sidewall (Natural Rubber/Polybutadiene Rubber)

Compound #5: Tire Apex (Natural Rubber)

Compound #6: Tire Tread (Styrene Butadiene Rubber/Polybutadiene Rubber)

Compound #7: Tire Bladder (Butyl Rubber)

Compound #8: EPDM 1 (EPDM Sulfur Cure)

Compound #9: EPDM 2 (Peroxide Cure)

Compound #10: EPDM 3 (Non-black EPDM Sulfur Cure)

Compound #11: CRW (Polychloroprene W Type)

Compound #12: CRG (Polychloroprene G Type)

Compound #13: Paracryl OZO (NBR/PVC)

Compound #14: Paracryl BLT (NBR)

Compound #15: Hypalon (CSM)

Compound #16: Fluoroelastomer (FKM)

Compound #17: AEM (Vamac)

Compound #18: Hydrogenated Nitrile (HNBR)

Compound #19: Silicone (VMQ)

Compound #20: Acrylate Rubber (ACM)

Compound #21: Chlorinated Polyethylene (CPE)

Compound #22: Emulsion SBR (SBR 1502)

Compound #23: Epichlorohydrin (ECO)

Compound #24: Oil-Extended SBR (SBR 1712)

Compound #25: Emulsion SBR (SBR 1500)

Compound #26: Solution SBR (Duradene 707)

RUBBER COMPOUND RECIPES

Compound #1: Tire Inner Liner (BrIIR/NR)

Recipe:

Brominated IIR X−2	85.00
SMR 20 Natural Rubber	15.00
GPF Black	60.00
Stearic Acid	1.00
Paraffinic Medium Process Oil	15.00
Unreactive Phenol formaldehyde type resin (Arofene 8318, SP1068)	5.00
Zinc Oxide	3.00
Sulfur	.50
MBTS	1.50
	186.00

Number of Passes/Temperature:
1 (NP Temperature: 320°F; Chlorobutyl or 290°F Bromobutyl
2 (P) Temperature: 220°F

Compound #2: Tire Ply Coat (Natural Rubber/Synthetic Rubber)

Recipe:
50472 Natural Rubber

SMR−GP Natural Rubber	70.00
Duradene 707	30.00
N330	36.50
Sundex 790	20.00
Flectol H	1.50
Santoflex IP	2.30
Sunproof Super Wax	1.20
Zinc Oxide	5.00
Stearic Acid	1.00
Sulfur	2.30
CBS	.80
	170.60

Number of Passes/Temperature:
1 (NP) Temperature: 330°F
2 (P) Temperature: 220°F

Compound #3: Tire Belt Coat (Natural Rubber)

Recipe:

#1RSS Natural Rubber	100.00
HAF Black (N330)	55.00
Aromatic Oil	5.00
N−(1,3 dimethylbutyl) −N−phenyl−P−phenylene diamine (Santoflex 13)	1.00
Zinc Oxide	10.00
Stearic Acid	2.00
n−tertiary −butyl−2−benzothiazole disulfide (Vanax NS)	.80
Sulfur	4.00
Cobalt Neodecanate (20.5% cobalt)	2.50
	180.30

Number of Passes/Temperatures:
1 (NP) Temperature: 330°F; add 1/2 black, add 1/2 oil
2 (NP) Temperature: 330°F; add remainder of black and oil
3 (remill) Temperature 300°F
4 (P) Temperature: 220°F

Compound #4: Tire Base/Sidewall (Natural Rubber/Polybutadiene Rubber)

Non-Productive Recipe:

NR-SMR-5 CV	50.00
Taktene 1220	50.00
N330 Carbon Black	50.00
Zinc Oxide	1.50
Stearic Acid	2.00
Agerite Resin D	2.00
Vulkanox 4020	3.00
Vanwax H Special	3.00
Flexon 580 Oil	10.00
	171.50

Productive Recipe:

Non Productive	171.50
Zinc Oxide	1.50
Rubber Maker Sulfur	1.75
DPG	0.10
CBS	0.60
	175.45

Number of Passes/Temperatures:
1 (NP) Temperature: 330°F
2 (P) Temperature: 220°F

Compound #5: Tire Apex (Natural Rubber)

Recipe:

TSR 20 Natural Rubber	100.00
HAF Black (N330)	80.00
Aromatic Oil	8.00
Stearic Acid	1.00
Resorcinol	3.00
Hexamethylenetetramine	3.00
Zinc Oxide	3.00
N-tertiary -butyl-2-benzothiazole disulfide (Vanax NS)	1.50
n-cyclohexylthiopthalimide (Santogard PVI)	.30
Sulfur	3.00
	202.80

1 (NP) Temperature: 330°F; add 60 parts black, add 6 parts oil
2 (NP) Temperature: 330°F; add Resorcinol, add 20 parts black, add 2 parts oil
3 (P) Temperature 200°F; add Hexam.

Compound #6: Tire Tread (Styrene Butadiene Rubber/Polybutadiene Rubber)

Non-Productive Recipe #1:

SBR 1712C	110.00
N299 Carbon Black	60.00
Taktene 1220	20.00
Zinc Oxide	1.50
Stearic Acid	3.00
Vulkanox 4020	2.00
Wingstay 100	2.00
Vanox H Special	2.50
Sundex 8125 Oil	20.00
	221.00

Non-Productive Recipe #2:

Non-Productive #1:	221.00
N299 Carbon Black	20.00
Sundex 8125 Oil	5.00
	246.00

Productive Recipe:

Non Productive #2	246.00
Zinc Oxide	1.50
Rubber Maker Sulfur	1.60
TMTD	0.20
CBS	3.00
	252.30

Number of Passes/Temperatures:
1 (NP) Temperature: 330°F; add 60 parts black, add 20 parts oil
2 (NP) Temperature: 330°F; add 20 parts black; add 5 parts oil
3 (P) Temperature: 220°F

Compound #7: Tire Bladder

Recipe:

BUTYL 268	100.00
N330	55.00
Castor Oil	5.00
SP 1045 Resin	10.00
Zinc Oxide	5.00
Neoprene W	5.00
	180.00

Number of Passes/Temperatures:
NP 1 All Butyl, Castor Oil, Zinc Oxide, 45 phr N330, discharge approx 330°F/340°F
+Resin, 10 phr N330, discharge approx 270/280°F DO NOT EXCEED 290°F
PROD NP2 = neoprene, discharge approx 250F/260°F

Compound #8: EPDM 1 (EPDM Sulfur Cure)

Non-Productive Recipe:

Vistalon 7000	50.00
Vistalon 3777	87.50
N650 GPF-HS Black	115.00
N762 SRF-LM Black	115.00
Process Oil Type 104B (Sunpar 2280)	100.00
Zinc Oxide	5.00
Stearic Acid	1.00
	473.50

Productive Recipe:

Non-Productive	473.50
Sulfur	0.50
TMTDS	3.00
ZDBDC	3.00
ZDMDC	3.00
DTDM	2.00
	485.00

Number of Passes/Temperatures
1 (NP) Temperature: 340°F; upside down mix, rubber then black and oil
2 (P) Temperature: 220°F

Compound #9: EPDM 2 (Peroxide Cure)

Non-Productive Recipe:

Royalene 502	100.00
N 762 Carbon Black	200.00
Sunpar 2280 Oil	85.00
Zinc Oxide	5.00
Stearic Acid	1.00
	391.00

Productive:

Non-Productive	391.00
DICUP 40C	6.00
SARET 500 (on carrier/2 parts active)	2.56
	399.56

NP Temperature: 330°F
P Temperature: 240°F

Compound #10: EPDM 3 (Non-black EPDM Sulfur Cure)

Recipe:

Vistalon 5600	50.00
Vistalon 3777	87.50
Hard Clay (Suprex)	180.00
Mistron Vapor Talc	100.00
Atomite Whiting	40.00
Process Oil Type 104B (Sunpar 2280)	60.00
Silane (A-1100)	1.50
Paraffin Wax	5.00
Zinc Oxide	5.00
Stearic Acid	1.00
Sulfur	1.50
Cupsac	0.50
TMTD	3.00
	535.00

Number of Passes/Temperatures:
1 (NP) Temperature: 330°F
2 (P) Temperature: 220°F, add Sulfur, Cupsac, and TMTDS

Compound #11: CRW (Polychloroprene W Type)

Recipe:

Non Productive:

Neoprene WRT	100.00
N 550	13.20
N 762	15.70
Agerite Staylite S	2.00
Sunproof Super Wax	2.00
Santoflex IP	1.00
Magnesium Oxide	4.00
Stearic Acid	0.50
PlastHall Doz	15.00
	153.40

Productive Recipe:

Non-Productive	153.40
Zinc Oxide	5.00
TMTD	0.50
Dispersed Ethylene Thiourea	1.00
	159.90

Number of Passes/Temperatures:
1 pass at 240°F; add accelerator package at 200°F

Compound #12: CRG (Polychloroprene G Type)

Non Productive Recipe:

Neoprene GN	100.00
SRF	50.00
Sundex 790	10.00
Octamine	2.00
Stearic Acid	1.00
Maglite D	4.00
	167.00

Productive Recipe:

Non-Productive	167.00
TMTM	0.50
Sulfur	1.00
DOTG	0.50
Zinc Oxide	5.00
	174.00

Number of Passes/Temperatures:
1 (NP) Temperatures: 240°F; add zinc oxide and cureatives late at 200°F
2 (P) Temperature: 200°F

Compound #13: Paracryl OZO (NBR/PVC)

Recipe:

PARACRIL OZO	100.00
Zinc Oxide	5.00
OCTAMINE	2.00
Hard Clay	80.00
FEF (N−550) Black	20.00
Stearic Acid	1.00
MBTS	2.50
TUEX	1.50
ETHYL TUEX	1.50
DOP	15.00
KP−140	15.00
Spider Sulfur	0.20
	243.70

Number of Passes:
(NP) Temperature: 330°F
(P) Temperature: 220°F; add MBTS, TUEX, ETHYL TUEX, Spider Sulfur

Compound #14: Paracryl BLT (NBR)

Recipe:

PARACRIL BLT	100.00
Zinc Oxide	5.00
SRF (N−774) Black	100.00
TP−95	15.00
Paraplex G−25	5.00
AMINOX	1.50
Stearic Acid	1.00
ESEN	0.50
MONEX	1.50
Sulfur	0.75
	230.25

Number of Passes/Temperatures:
(NP) Temperature: 280°F
(P) Temperature: 220°F; add sulfur, MONEX, and possibly ESEN

Compound #15: Hypalon (CSM)

Recipe:

Hypalon 40	100.00
CLS 4 PBD	3.00
Carbo wax 4000	3.00
PE 617A	3.00
Mag Lite D	5.00
PE 200	3.00
Whiting (Atomite)	100.00
N650	100.00
TOTM Oil	70.00
MBTS	1.00
Tetrone A	1.50
NBC	0.50
HVA−2	0.50
	390.50

Uses of Formulas/Temperatures:
Number of Passes:
1 (P) Temperature: 280°F

Compound #16: Fluoroelastomer (FKM)

Recipe:

Viton E60C	100.00
N990 Black	20.00
Calcium Hydroxide	6.00
Maglite D	3.00
	129.00

Compound #17: AEM (Vamac)

Recipe:

VAMAC*B−124 Masterbatch	124.00
ARMEEN 18D	.50
Stearic Acid	.20
SRF Carbon Black (N−774)	10.00
DIAK #1	4.00
DPG	4.00
	142.70

Compound #18: Hydrogenated Nitrile (HNBR)

Non−Productive Recipe:

HNBR Zetpol 2020	100.00
N650 Black	45.00
Flexone 7P	1.00
Agerite Resin D	1.00
ZMTI	1.00
Kadox 911 C	5.00
Stearic Acid	1.00
Trioctyl trimellitate (TOTM)	7.00
	161.00

Productive Recipe:

Sulfur	0.50
MBTS	1.50
TMTD	1.50
MTD Monex	.50
	165.00

Number of Passes/Temperatures:
1 (NP) Temperature: 275°F
2 (P) Temperature: 210°F

Compound #19: Silicone (VMQ)

Recipe:

Silicone Rubber	70.00
Silastic NPC−80 silicone rubber	30.00
5 Micron Min−U−Sil	68.00
Silastic HT−1 modifier	0.80
Vulcanizing agent: Varox DBPH 50	1.00
	169.80

Compound #20: Acrylate Rubber (ACM)

Non-Productive Recipe:

Hytemp AR71	100.00
Stearic Acid	1.00
N 550	65.00
	166.00

Productive Recipe:

Non-Productive	166.00
Sodium Stearate	2.25
Potassium Stearate	0.75
Sulfur	0.30
	169.30

Number of Passes/Temperatures:
1 (NP) Temperature: 260°F
2 (P) Temperature: 220°F

Compound #21: Chlorinated Polyethylene (CPE)

Recipe:

CM 0136	100.00
Maglite D	10.00
N 774 Black	30.00
Sterling VH	35.00
DER 331 DLC	7.00
Agerite Resin D	0.20
TOTM Oil	35.00
Triallyl Isocyanurate Cure 5223 (provided by Gates)	2.90
Trigonox 17/40	10.00
	230.10

Number of Passes/Temperatures:
Single pass mixed to 240°F; add Triallyisocyanurate, Triganox 17/40 at 200°F.

Compound #22: Emulsion SBR (SBR 1502)

Non-Productive Recipe:

SBR 1502	100.00
N330 Carbon Black	58.50
Zinc Oxide	10.00
Stearic Acid	2.00
Agerite Resin D (Naugard Q)	2.00
Flexone 7P	1.00
Sunproof Super Wax	1.50
Sundex 790 Oil	7.00
	182.00

Productive Recipe:

Non-Productive	182.00
Rubber Makers Sulfur	2.00
TBBS	1.80
	185.80

Number of Passes/Temperatures:
Non-productive pass mixed to 330°F,
Second pass mixed to 220°F.

Compound #23: Epichlorohydrin (ECO)

Recipe:

Hydrin 2000	100.00
N330 Carbon Black	50.00
Stearic Acid	1.00
Vulkanox MB−2/MG/C	1.00
Calcium Carbonate	5.00
Zisnet F−PT	1.00
Diphenylguanadine	0.50
Santogard PVI	0.50
	159.00

Number of Passes/Temperatures:

1 Pass at 240°F

Compound #24: Oil−Extended SBR (SBR 1712)*

SBR 1712	137.50
	137.50

Compound #25: Emulsion SBR (SBR 1500)*

SBR 1500	100.00
	100.00

Compound #26: Solution SBR (Duradene 707)*

Duradene 707	100.00
	100.00

* − Compounds 24, 25, and 26 were mixes of polymer only, with no fillers or cure system.

APPENDIX C

INTERPOLATION FACTORS

To determine the emission factor for a compound not listed in a PROCESS EMISSION FACTOR SUMMARY TABLE, multiply the TABLE 3-1 value of that compound by the following factors:

	VOC	*Speciated Organics*	*Organic HAPs*	*Metal HAPs*	*Total HAPs*	*PM*
Mill	0.73	0.33	0.26	--	0.26	--
Extruder	0.13	0.29	0.41	6.62	0.42	0.04
Calender	0.27	0.40	0.18	--	0.18	--
Autoclave	1.42	9.09	7.21	--	7.21	--
Platen Press	5.80	27.14	43.40	--	43.40	--
Hot Air Oven	7.39	21.43	22.64	--	22.64	--

Note: When metals are insignificant, total HAPs are the same as organic HAPs.