



## 2008 Area Source Emissions Inventory Methodology

### 410 – RUBBER, FIBERGLASS AND PLASTICS MANUFACTURING

#### I. Purpose

This document describes the Area Source Methodology used to estimate emissions of volatile organic compounds (VOC) from rubber and rubber products manufacturing, fiberglass and fiberglass products manufacturing, and plastics and plastic products manufacturing in the San Joaquin Valley Air Basin. An area source category is a collection of similar emission units within a geographic area (i.e., a County). An area source category collectively represents individual sources that are small and numerous, and that may not have been inventoried as specific point, mobile, or biogenic sources. The California Air Resources Board (CARB) has grouped these individual sources with other like sources into area source categories. These source categories are grouped in such a way that they can be estimated collectively using one methodology.

#### II. Applicability

The emission calculations from this Area Source Methodology apply to facilities that are identified by the following Category of Emission Source (CES) codes and Reconciliation Emission Inventory Codes (REIC):

**Table 1. Emission inventory codes.**

CES	REIC	Description
46938	410-402-5062-0000	Rubber and rubber products manufacturing
74674	410-403-5018-0000	Fiberglass and fiberglass products manufacturing
46946	410-404-5000-0000	Plastics and plastic products manufacturing

#### III. Point Source Reconciliation

Emissions from the area source inventory and point source inventory are reconciled against each other to prevent double counting. This is done using relationships created by the California Air Resources Board (CARB) between the area source REIC and the point sources' Standard Industry Classification (SIC) code and emissions process Source Category Code (SCC) combinations. The area sources in this methodology reconcile against processes in our point source inventory with the SIC/SCC combinations listed in Appendix A.

## IV. Methodology Description

This area source methodology estimates emissions of volatile organic compounds (VOC) from rubber and rubber products, fiberglass and fiberglass products, and plastics and plastic products manufacturing facilities in the San Joaquin Valley Air Pollution Control District (District).

Rubber and rubber products manufacturing. This source category is used to estimate VOC emissions from both the production of synthetic rubber, and the manufacture of products from natural or synthetic rubber feedstocks. Synthetic rubbers are copolymers of styrene and butadiene (both VOCs) made by an emulsion polymerization processes. The emulsion products are sold in either a granular solid form, known as crumb, or in a liquid form, known as latex. Rubber products manufacturing is primarily the production of tires for automobiles, trucks, airplanes and farm machinery. However, many rubber manufacturing facilities produce other engineered rubber products. VOCs are generally released as unreacted feedstocks or due to use of cements, solvent tackifiers, and release agents.

Fiberglass and fiberglass products manufacturing. This source category is used to estimate VOC emissions from the manufacture of fiberglass products (primarily boats). Fiberglass products are typically manufactured in a process known as open molding. Separate molds are used for the boat hull, deck, and miscellaneous small parts such as fuel tanks, seats, storage lockers, and hatches. The parts are built on or inside the molds using glass roving, cloth, or mat that is saturated with a thermosetting liquid resin. The liquid resin is mixed with a catalyst before it is applied to the glass, which causes a crosslinking reaction between the resin molecules. The catalyzed resin hardens to form a rigid shape consisting of the plastic resin reinforced with glass fibers. VOCs are emitted from the resins and also from solvents used for cleaning equipment and molds.

Plastics and plastic products manufacturing. This source category is used to estimate VOC emissions from the manufacture of plastics such as polyester, polyethylene, polystyrene, polypropylene, polyurethane and polyvinylchloride. The manufacture of most resins or plastics begins with the polymerization or linking of the basic monomers into high molecular weight solids. The manufacture of most plastics involves an enclosed polymerization step, a drying or curing step, and a final treating and forming step. Treatment of the resin after polymerization varies with the proposed use. Resins for moldings are dried and crushed or ground into molding powder. Resins to be used for protective coatings are usually thinned with some type of solvent and then stored. Other resins are stored in latex form. The major sources of air contamination in plastics manufacturing are the raw materials (monomers), solvents, blowing agents, or other volatiles emitted during the reaction; and solvents lost during storage and handling of thinned resins.

Estimating area source emissions. The number of rubber and rubber products, fiberglass and fiberglass products, and plastics and plastic products manufacturing facilities in each county in the District was queried from the United States Census

Bureau's 2008 County Business Patterns. From this count, the number of facilities in the District's permitting database was subtracted. The number of facilities remaining were assumed to be permit exempt with VOC emissions of less than 2.0 pounds per day. The area source inventory was calculated by multiplying the number of permit exempt facilities by an emission factor.

## V. Activity Data

The total number of rubber, fiberglass, and plastics facilities in each county in the District was queried from the United States Census Bureau's 2008 County Business Patterns. From this total facility count, the number of permitted facilities was subtracted. The difference were assumed to be permit exempt and part of the area source inventory.

**Table 2. The total, permitted and permit exempt rubber, fiberglass, and plastic manufacturing facilities within the district in 2009.**

County	Number of Facilities		
	Business Census	Permitted	Permit Exempt
<b>RUBBER AND RUBBER PRODUCTS MANUFACTURING</b>			
Fresno	23	3	20
Kern <sup>1</sup>	10	4	6
Kings	2	0	2
Madera	1	0	1
Merced	1	0	1
San Joaquin	20	12	8
Stanislaus	8	5	3
Tulare	2	0	2
<b>TOTAL</b>	<b>67</b>	<b>24</b>	<b>43</b>
<b>FIBERGLASS AND FIBERGLASS PRODUCTS MANUFACTURING</b>			
Fresno	4	5	0
Kern <sup>1</sup>	0	2	0
Kings	0	0	0
Madera	2	2	0
Merced	3	7	0
San Joaquin	3	2	1
Stanislaus	0	1	0
Tulare	0	2	0
<b>TOTAL</b>	<b>12</b>	<b>21</b>	<b>1</b>
<b>PLASTICS AND PLASTIC PRODUCTS MANUFACTURING</b>			
Fresno	29	10	19
Kern <sup>1</sup>	13	10	3
Kings	4	2	2
Madera	4	7	0
Merced	5	2	3
San Joaquin	46	13	33
Stanislaus	15	8	7
Tulare	16	9	7
<b>TOTAL</b>	<b>132</b>	<b>61</b>	<b>74</b>

<sup>1</sup>Includes only the valley portion of Kern County based on a CARB estimate that 83.05% of Kern County's population lived within the SJVAPCD in 2008.

## VI. Emission Factors

Non-permitted facilities are assumed to be permit exempt pursuant to District Rule 2020 Section 3.7.1. This provides an exemption for low emitting units with uncontrolled emissions rate of each air contaminant of less than or equal to two pounds per day. Therefore, it was assumed that each non-permitted facility emits 2.0 pounds of VOC per day, 365 days per year.

## VII. Emissions Calculations

### A. Assumptions

Each permit exempt facility emits 2 pounds of VOC per day, 365 days per year.

### B. Sample Calculations

$$VOC\ Emissions = No.\ facilities \times \left( \frac{2\ lbs\ VOC}{day} \right) \times \left( \frac{365\ days}{year} \right) \times \left( \frac{1\ ton}{2,000\ lbs} \right) = \frac{tons\ of\ VOC}{year}$$

Given:

1. There were 19 permit exempt plastics and plastic products manufacturing facilities operating in Fresno County in 2008.

Calculate Emissions:

Emissions of VOC from permit exempt facilities are calculated as follows:

$$VOC\ Emissions = 19\ facilities \times \left( \frac{2\ lbs\ VOC}{day} \right) \times \left( \frac{365\ days}{year} \right) \times \left( \frac{1\ ton}{2,000\ lbs} \right) = \frac{6.935\ tons\ of\ VOC}{year}$$

## VIII. Temporal Variation

### A. Daily

CARB Code 24. 24 hours per day - uniform activity during the day.

### B. Weekly

CARB Code 7. 7 days per week - uniform activity every day of the week

### C. Monthly

Uniform monthly activity – 8.33% per month

## IX. Spatial Variation

Activity for these source categories within each county can be spatially distributed using industrial employment as a surrogate.

## X. Growth Factor

Growth factors are developed by either the District's Strategies and Incentives Department or CARB for each EIC. These factors are used to estimate emissions in future years. The growth factors associated with this emissions category may be obtained from the District's Strategies and Incentives Department.

## XI. Control Level

Control levels are developed by either the District's Strategies and Incentives Department or CARB for each EIC. Control levels are used to estimate emissions reductions in future years due to implementation of District rules. These control levels take into account the effect of control technology, compliance and exemptions at full implementation of the rules.

Emission units within this area source category may be subject to the following District Rules:

**Table 3. District rules applicable to REIC 410-402-5062-0000, 410-403-5018-0000 and 410-404-5000-0000.**

Rule No.	Rule Description
4653	Adhesives
4681	Rubber Tire Manufacturing
4682	Polystyrene, Polyethylene and Polypropylene Products Manufacturing
4684	Polyester Resin Operations

Control levels associated with these emissions categories may be obtained from the District's Planning Department.

## XII. CARB Chemical Speciation

CARB has developed organic gas profiles in order to calculate reactive organic gases (ROG), volatile organic compounds (VOC) or total organic gas (TOG) given any one of the three values. For each speciation profile, the fraction of TOG that is ROG and VOC is given. The organic gas profile codes can also be used to lookup associated toxics. CARB speciation profile 274 is applied to rubber and rubber products manufacturing. CARB speciation profile 600 is applied to fiberglass and fiberglass products manufacturing, and plastics and plastic products manufacturing.

**Table 4. CARB organic gas speciation profile 274 is used for rubber products manufacturing (REIC 410-402-5062-0000); and speciation profile 600 is used for fiberglass (REIC 410-403-5018-0000) and plastic (REIC 410-404-5000-0000) products manufacturing.**

Profile Description	CARB Organic Gas Profile#	Fractions	
		ROG	VOC
Synthetic rubber auto tire production	274	0.875	0.875
All categories combined	600	0.699	0.688

### **XIII. Assessment Of Methodology**

This is a top down estimate of area source emissions from rubber and rubber products, fiberglass and fiberglass products and plastics and plastic products manufacturing. The accuracy of this estimate is dependent upon the following assumptions:

1. The NAICS codes used to query facility counts from the 2008 County Business Patterns census accurately describe the source categories.
2. The 2008 County Business Patterns census accurately accounts for all facilities within the District.
3. All permit exempt facilities emit 2 pounds of VOC per day, and operate 365 days per year.

## XIV. Emissions

Following is the 2008 area source emissions inventory for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (REIC 410-404-5000-0000) estimated by this methodology. Emissions are reported for each county in the District.

**Table 5. Area source emissions for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (REIC 410-404-5000-0000) estimated by this methodology (2008).**

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>RUBBER AND RUBBER PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	7.30	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	2.19	0.00	N/A
Kings	0.00	0.00	0.00	0.73	0.00	N/A
Madera	0.00	0.00	0.00	0.37	0.00	N/A
Merced	0.00	0.00	0.00	0.37	0.00	N/A
San Joaquin	0.00	0.00	0.00	2.92	0.00	N/A
Stanislaus	0.00	0.00	0.00	1.10	0.00	N/A
Tulare	0.00	0.00	0.00	0.73	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>15.71</b>	<b>0.00</b>	<b>N/A</b>
<b>FIBERGLASS AND FIBERGLASS PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	0.00	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	N/A
Kings	0.00	0.00	0.00	0.00	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	0.00	0.00	N/A
San Joaquin	0.00	0.00	0.00	0.37	0.00	N/A
Stanislaus	0.00	0.00	0.00	0.00	0.00	N/A
Tulare	0.00	0.00	0.00	0.00	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.37</b>	<b>0.00</b>	<b>N/A</b>
<b>PLASTICS AND PLASTIC PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	6.94	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	1.10	0.00	N/A
Kings	0.00	0.00	0.00	0.73	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	1.10	0.00	N/A
San Joaquin	0.00	0.00	0.00	12.05	0.00	N/A
Stanislaus	0.00	0.00	0.00	2.56	0.00	N/A
Tulare	0.00	0.00	0.00	2.56	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>27.04</b>	<b>0.00</b>	<b>N/A</b>

<sup>1</sup>The District only reports ROG to CARB. As noted in Section XII, ROG is the same as VOC.

<sup>2</sup>Includes only the valley portion of Kern County

**410 – Rubber, Fiberglass and Plastics Manufacturing**

Following is the 2008 point source emissions inventory for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (410-404-5000-0000) as reported to the District by permit holders. Emissions are reported for each county in the District.

**Table 6. Point source emissions for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (REIC 410-404-5000-0000) estimated by this methodology (2008).**

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>RUBBER AND RUBBER PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	0.00	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	N/A
Kings	0.00	0.00	0.00	0.00	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	0.00	0.00	N/A
San Joaquin	0.00	0.00	0.00	0.94	0.00	N/A
Stanislaus	0.00	0.00	0.00	0.00	0.00	N/A
Tulare	0.00	0.00	0.00	0.00	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.94</b>	<b>0.00</b>	<b>N/A</b>
<b>FIBERGLASS AND FIBERGLASS PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	17.55	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	7.99	0.00	N/A
Kings	0.00	0.00	0.00	0.00	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	34.90	0.00	N/A
San Joaquin	0.00	0.00	0.00	4.13	0.00	N/A
Stanislaus	0.00	0.00	0.00	0.25	0.00	N/A
Tulare	0.00	0.00	0.00	0.47	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>65.29</b>	<b>0.00</b>	<b>N/A</b>
<b>PLASTICS AND PLASTIC PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	99.13	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	118.31	0.00	N/A
Kings	0.00	0.00	0.00	17.24	0.00	N/A
Madera	0.00	0.00	0.00	17.97	0.00	N/A
Merced	0.00	0.00	0.00	17.13	0.00	N/A
San Joaquin	0.00	0.00	0.00	42.59	0.00	N/A
Stanislaus	0.00	0.00	0.00	8.03	0.00	N/A
Tulare	0.00	0.00	0.00	128.63	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>449.03</b>	<b>0.00</b>	<b>N/A</b>

<sup>1</sup>The District only reports ROG to CARB. As noted in Section XII, ROG is the same as VOC.

<sup>2</sup>Includes only the valley portion of Kern County



**410 – Rubber, Fiberglass and Plastics Manufacturing**

Following is the 2008 total unreconciled (point source plus area source) emissions inventory for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (410-404-5000-0000). Emissions are reported for each county in the District.

**Table 7. Total (point source plus area source) emissions for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (REIC 410-404-5000-0000) estimated by this methodology (2008).**

County	Emissions (tons/year)					
	NO <sub>x</sub>	CO	SO <sub>x</sub>	VOC <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>RUBBER AND RUBBER PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	7.30	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	2.19	0.00	N/A
Kings	0.00	0.00	0.00	0.73	0.00	N/A
Madera	0.00	0.00	0.00	0.37	0.00	N/A
Merced	0.00	0.00	0.00	0.37	0.00	N/A
San Joaquin	0.00	0.00	0.00	3.86	0.00	N/A
Stanislaus	0.00	0.00	0.00	1.10	0.00	N/A
Tulare	0.00	0.00	0.00	0.73	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.65</b>	<b>0.00</b>	<b>N/A</b>
<b>FIBERGLASS AND FIBERGLASS PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	17.55	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	7.99	0.00	N/A
Kings	0.00	0.00	0.00	0.00	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	34.90	0.00	N/A
San Joaquin	0.00	0.00	0.00	4.50	0.00	N/A
Stanislaus	0.00	0.00	0.00	0.25	0.00	N/A
Tulare	0.00	0.00	0.00	0.47	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>65.66</b>	<b>0.00</b>	<b>N/A</b>
<b>PLASTICS AND PLASTIC PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	106.07	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	119.41	0.00	N/A
Kings	0.00	0.00	0.00	17.97	0.00	N/A
Madera	0.00	0.00	0.00	17.97	0.00	N/A
Merced	0.00	0.00	0.00	18.23	0.00	N/A
San Joaquin	0.00	0.00	0.00	54.64	0.00	N/A
Stanislaus	0.00	0.00	0.00	10.59	0.00	N/A
Tulare	0.00	0.00	0.00	131.19	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>476.07</b>	<b>0.00</b>	<b>N/A</b>

<sup>1</sup>The District only reports ROG to CARB. As noted in Section XII, ROG is the same as VOC.

<sup>2</sup>Includes only the valley portion of Kern County

#### 410 – Rubber, Fiberglass and Plastics Manufacturing

Following is the net change in total unreconciled emissions between this update (2008 inventory year) and the existing inventory (2007 inventory year) for rubber and rubber products manufacturing (REIC 410-402-5062-0000), fiberglass and fiberglass products manufacturing (REIC 410-403-5018-0000), and plastics and plastic products manufacturing (410-404-5000-0000). The changes in emissions are reported for each county in the District.

**Table 8. Net emissions change for rubber and rubber products manufacturing, fiberglass and fiberglass products manufacturing, and plastics and plastic products manufacturing) estimated by this methodology (2008-2007).**

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>RUBBER AND RUBBER PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	7.30	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	2.19	0.00	N/A
Kings	0.00	0.00	0.00	-26.12	0.00	N/A
Madera	0.00	0.00	0.00	0.37	0.00	N/A
Merced	0.00	0.00	0.00	0.37	0.00	N/A
San Joaquin	0.00	0.00	0.00	-68.02	0.00	N/A
Stanislaus	0.00	0.00	0.00	1.10	0.00	N/A
Tulare	0.00	0.00	0.00	0.73	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-82.08</b>	<b>0.00</b>	<b>N/A</b>
<b>FIBERGLASS AND FIBERGLASS PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	-20.65	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	-2.48	0.00	N/A
Kings	0.00	0.00	0.00	0.00	0.00	N/A
Madera	0.00	0.00	0.00	0.00	0.00	N/A
Merced	0.00	0.00	0.00	-33.55	0.00	N/A
San Joaquin	0.00	0.00	0.00	-6.68	0.00	N/A
Stanislaus	0.00	0.00	0.00	0.25	0.00	N/A
Tulare	0.00	0.00	0.00	0.47	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-62.64</b>	<b>0.00</b>	<b>N/A</b>
<b>PLASTICS AND PLASTIC PRODUCTS MANUFACTURING</b>						
Fresno	0.00	0.00	0.00	-34.13	0.00	N/A
Kern <sup>2</sup>	0.00	0.00	0.00	120.50	0.00	N/A
Kings	0.00	0.00	0.00	17.97	0.00	N/A
Madera	0.00	0.00	0.00	17.97	0.00	N/A
Merced	0.00	0.00	0.00	18.23	0.00	N/A
San Joaquin	0.00	0.00	0.00	-105.01	0.00	N/A
Stanislaus	0.00	0.00	0.00	10.59	0.00	N/A
Tulare	0.00	0.00	0.00	131.19	0.00	N/A
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>177.31</b>	<b>0.00</b>	<b>N/A</b>

<sup>1</sup>The District only reports ROG to CARB. As noted in Section XII, ROG is the same as VOC.

<sup>2</sup>Includes only the valley portion of Kern County

## XV. Revision History

2008. This is a new District methodology.

## XVI. Update Schedule

In an effort to provide inventory information to CARB and other District programs and maximize limited resources, the District has developed an update cycle based on emissions within the source category as shown in the following table:

**Table 9. Area source update frequency criteria.**

Total Emissions (tons/day)	Update Cycle (years)
≤1	4
>1 and ≤ 2.5	3
>2.5 and ≤5	2
>5	1

Since VOC emissions are less than 1 ton per day, these area source estimates will be updated every four years.

## XVII. References

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## **XVIII. Appendixes**

**Appendix A. Inventory Reconciliation Codes**

**Appendix B: 2008 County Business Patterns Query**

### Appendix A. Inventory Reconciliation Codes

Table 10. EIC, SCC and SIC codes in the District's 2008 point source inventory that reconciled to Rubber and Rubber Products Manufacturing (REIC 410-402-0248-0000).

EIC	SCC	Point Source Type	SIC
410-402-0248-0000	30800198	RUBBER/PLASTICS - TIRE MFG - NOT CLASSIFIED - OTHER	3069, 7534
410-402-0248-0000	30800501	RUBBER/PLASTICS - TIRE RETREADING - TIRE BUFFING - MACHINES	7534
410-402-5062-0000	30102699	CHEMICAL MFG - PLASTICS PRODN - SYNTHETIC RUBBER - NOT CLASSIFIED	3061, 3069, 3089
410-402-5062-0000	30800699	RUBBER/PLASTICS - MISC.RUBBER PROD - NOT CLASSIFIED - OTHER	3061, 3069

Table 11. EIC, SCC and SIC codes in the District's 2008 point source inventory that reconciled to Fiberglass and Fiberglass Products Manufacturing (REIC 410-403-5018-0000).

EIC	SCC	Point Source Type	SIC
410-403-5018-0000	30501223	MINERAL PRODUCTS - FIBERGLASS - RAW MATL HANDLING - MIXING/WEIGHING	3732
410-403-5018-0000	30800720	RUBBER/PLASTICS - FAB. PLASTIC PROD - FIBERGLASS RESIN - PRODUCT-GENERAL	1743, 3443
410-403-5018-0000	30800721	RUBBER/PLASTICS - FAB. PLASTIC PROD - FIBERGLASS RESIN - GEL COAT-ROLL ON	3089, 3732
410-403-5018-0000	30800722	RUBBER/PLASTICS - FAB. PLASTIC PROD - FIBERGLASS RESIN - GEL COAT-SPRAY ON	1743, 2821, 3089, 3732
410-403-5018-0000	30800723	RUBBER/PLASTICS - FAB. PLASTIC PROD - FIBERGLASS RESIN - GENERAL-ROLL ON	3089, 3229, 3732
410-403-5018-0000	30800724	RUBBER/PLASTICS - FAB. PLASTIC PROD - FIBERGLASS RESIN - GENERAL-SPRAY ON	2821, 3088, 3089, 3229, 3499, 3732

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Table 12. EIC, SCC and SIC codes in the District's 2008 point source inventory that reconciled to Plastics and Plastic Products Manufacturing (REIC 410-404-5000-0000).

EIC	SCC	Point Source Type	SIC
410-404-5000-0000	30101893	CHEMICAL MFG - PLASTICS PRODN - GENERAL PROCESSES - RAW MATL STORAGE	3087
410-404-5000-0000	30101899	CHEMICAL MFG - PLASTICS PRODN - NOT CLASSIFIED - SEE COMMENTS	2821, 3087
410-404-5000-0000	30501223	MINERAL PRODUCTS - FIBERGLASS - RAW MATL HANDLING - MIXING/WEIGHING	2821
410-404-5000-0000	30800701	RUBBER/PLASTICS - FAB. PLASTIC PROD - PLASTICS MACHINNG - DRILING,SANDNG,ETC	3732
410-404-5000-0000	30800703	RUBBER/PLASTICS - FAB. PLASTIC PROD - SOLVENT CONSUMPTN -	3069
410-404-5000-0000	30800704	RUBBER/PLASTICS - FAB. PLASTIC PROD - ADHESIVE CNSUMPTN -	3086, 3732
410-404-5000-0000	30800799	RUBBER/PLASTICS - FAB. PLASTIC PROD - NOT CLASSIFIED - OTHER	1743, 3086, 3088, 3089, 3369
410-404-5000-0000	30800802	RUBBER/PLASTICS - PLASTIC FOAM PROD - MOLDING -	3086, 3088, 3089
410-404-5000-0000	30801002	RUBBER/PLASTICS - FAB. PLASTIC PROD - EXTRUDER -	2821, 3086
410-404-5000-0000	30801005	RUBBER/PLASTICS - FAB. PLASTIC PROD - FOAM PRODUCTION - GENERAL PROCESS	2821, 3081, 3086
410-404-5016-0000	30101840	CHEMICAL MFG - PLASTICS PRODN - POLYESTER/ALKYD - RESIN STORGE TANK	3088, 3732
410-404-5028-0000	30101837	CHEMICAL MFG - PLASTICS PRODN - POLYESTER RESINS - GENERAL	2821, 3089
410-404-5030-0000	30101837	CHEMICAL MFG - PLASTICS PRODN - POLYESTER RESINS - GENERAL	3443, 3732
410-404-5034-0000	30101863	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE - EXTRUDER	3081
410-404-5034-0000	30101864	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE - PELLET SILO/STRG	3086
410-404-5034-0000	30101865	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE - TRNSFR/CONVEYNG	3086
410-404-5036-0000	30101808	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE H D - MONOMER/SLVNT RCV	3084
410-404-5036-0000	30101809	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE H D - EXTRUDER	2679, 3082, 3086, 5162
410-404-5036-0000	30101810	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE H D - CONVEYING	3089, 5162
410-404-5036-0000	30101811	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE H D - STORAGE	5162
410-404-5038-0000	30101812	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE L D - GENERAL	3084, 3086, 3089

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410-404-5038-0000	30101814	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE L D - EXTRUDER	3086
410-404-5038-0000	30101815	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE L D - PELLET SILO	2821, 3089
410-404-5038-0000	30101816	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE L D - TRNSFR/HNDL/LD/PK	3086, 3089
410-404-5038-0000	30101860	CHEMICAL MFG - PLASTICS PRODN - POLYETHYLENE - RECOVERY SYSTEM	3086
410-404-5044-0000	30101802	CHEMICAL MFG - PLASTICS PRODN - POLYPROPYLENE - GENERAL	3089
410-404-5046-0000	30101817	CHEMICAL MFG - PLASTICS PRODN - POLYSTYRENE - GENERAL	3086, 3089
410-404-5046-0000	30101821	CHEMICAL MFG - PLASTICS PRODN - POLYSTYRENE - EXTRD/PLTZ/CNVY/S	2656, 2821, 3086
410-404-5046-0000	30800901	RUBBER/PLASTICS - FAB. PLASTIC PROD - POLYSTYRENE - GENERAL (MOLDING)	3086, 3089
410-404-5048-0000	30101883	CHEMICAL MFG - PLASTICS PRODN - POLYURETHANE - TRSFR/CONUY/STRG	3086
410-404-5048-0000	30101885	CHEMICAL MFG - PLASTICS PRODN - POLYURETHANE - OTHER NOT CLSSFD	3086
410-404-5050-0000	30101801	CHEMICAL MFG - PLASTICS PRODN - POLYVINYL CHLORID - GENERAL	2821, 3084, 3087, 3089



## Appendix B. 2008 County Business Patterns Query

The 2008 County Business Patterns were queried to determine the number of businesses in each county described by the Standard Industry Classification (SIC) and North American Industry Classification System (NAICS) codes listed below:

**Table 13. Standard Industry Classification (SIC) and North American Industry Classification System (NAICS) codes used to define rubber products, fiberglass and plastics products manufacturers.**

SIC	SIC Description	NAICS
<b>Rubber Products</b>		
2822	Synthetic rubber	325212
3011	Tire (and inner tubes)	326211
3021	Rubber and plastics footwear	316211
3052	Rubber and plastics hose and belting	326220
3053	Gaskets, packing, and sealing devices	33991
3061	Rubber products for mechanical use	326291
3069	Other rubber products	313320, 314911, 315299, 315999, 326192, 326299, 339113, 339920, 339932
7534	Tire retreading (and repair)	326212
<b>Fiberglass</b>		
3296	Mineral wool -- fiberglass manufacturing	327993
3732	Boat building and repairing	336612
<b>Plastics</b>		
2656	Non-folding sanitary food container	322215
2671	Unsupported plastics packaging film and sheet	326112, 322221
2673	Unsupported plastics bag	326111, 322223
2821	Plastics material and resin	325211
3081	Unsupported plastics film and sheet	326113
3082	Unsupported plastics profile shapes	326121
3083	Laminated plastics plate, sheet, and profile shapes	326130
3084	Plastic pipe manufacturing	326122
3085	Plastic bottles	326160
3086	Plastic form products	326140, 326150
3087	Custom compounding of purchased plastics resins	325991
3088	Plastics plumbing fixtures manufacturing	326191
3089	All other plastics product manufacturing	326199, 326121, 326122, 337215, 339113