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## National Priority Chemicals Trends Report (2005-2007)

### Section 4 Trends Analyses for Specific Priority Chemicals (2005-2007): Hexachlorobenzene (HCB)

Program Implementation and Information Division  
Office of Resource Conservation and Recovery  
U.S. Environmental Protection Agency

#### Contact Information:

Bill Kline, Senior Data Analyst  
Information Collection & Analysis Branch  
(540) 341-3631  
kline.bill@epa.gov

Tammie Owen, Data Analyst  
Information Collection & Analysis Branch  
(703) 308-4044  
owen.tammie@epa.gov

Dwane Young, Chief  
Information Collection & Analysis Branch  
(703) 347-8578  
Young.dwane@epa.gov

# Hexachlorobenzene (HCB)

## Chemical Information

**Alternate Names:** Perchlorobenzene, HCB

**General Uses:** Currently, there are no commercial uses of hexachlorobenzene in the United States. It is formed as a byproduct while making other chemicals, in the waste streams of chloralkali and wood-preserving plants.

## How Much Hexachlorobenzene Was Generated?

For 2007, 25 facilities reported approximately 6.5 million pounds of HCB being generated; one facility reported approximately 79 percent of the national total quantity of this PC. Compared to the total quantity of HCB reported for 2005 and 2006, this quantity represents a decrease of approximately 161,000 pounds and an increase of approximately 2 million pounds, respectively (Exhibit 4.23).

**Exhibit 4.23. National Generation of Hexachlorobenzene (2005–2007)**

TRI Reporting Year	2005	2006	2007
Total Quantity of HCB (pounds)	6,685,476	4,549,984	6,524,018
Number of TRI Facilities Reporting HCB	32	33	25

## Where Was HCB Generated?

Since 2005, a plastics material and resin manufacturing facility in Iberville County, Louisiana (EPA Region 6) consistently reported generating most of the HCB, including approximately 79 percent of the total quantity reported for 2007 (Exhibit 4.24).

**Exhibit 4.24. Quantity of Hexachlorobenzene, by County (2007)**

EPA Region	State	County	Quantity (pounds) of HCB			Percent of Total Quantity (2007)
			2005	2006	2007	
6	LA	Iberville	4,379,798	3,335,848	5,138,321	78.8%
6	LA	Calcasieu	522,498	555,380	495,075	7.6%
6	TX	Brazoria	1,303,955	374,996	350,501	5.4%
6	LA	Ascension	271,172	88,778	321,980	4.9%
4	TN	Shelby	142,508	91,679	134,289	2.1%
<b>Total</b>			<b>6,619,932</b>	<b>4,446,681</b>	<b>6,440,166</b>	<b>98.7%</b>

## Which Industries Generated Hexachlorobenzene?

For 2007, 25 facilities in eleven NAICS codes reported HCB; 14 facilities in three NAICS codes reported over 99 percent of the total quantity (Exhibit 4.25). From 2005 to 2007, facilities (primarily one facility) in NAICS code 325211 (Plastics material and resin manufacturing) reported the largest quantities of HCB, including approximately 79 percent for 2007 (please refer to Exhibit 3.4 to see the number of facilities that reported this PC within various quantity ranges).

### Exhibit 4.25. Industry Sectors Quantities of Hexachlorobenzene (2005–2007)

Primary NAICS code	NAICS Code Description	Facilities Reporting (2007)	Quantity (pounds) of HCB			Percent of Total Quantity (2007)
			2005	2006	2007	
325211	Plastics Material and Resin Manufacturing	2	4,366,198	3,332,648	5,138,293	78.8%
325181	Alkalies and Chlorine Manufacturing	5	794,071	644,768	1,169,311	17.9%
325199	All Other Basic Organic Chemical Manufacturing	7	166,068	186,172	198,788	3.0%
<b>Total</b>		<b>14</b>	<b>5,326,338</b>	<b>4,163,589</b>	<b>6,506,392</b>	<b>99.7%</b>

## How Did Facilities Manage Hexachlorobenzene?

Exhibit 4.26 shows how facilities, by industry, managed HCB in 2007.

### Exhibit 4.26. Management Methods for Hexachlorobenzene in Industry Sectors (2007)

Primary NAICS Code	NAICS Code Description	Total PC Quantity Reported	Quantity (pounds) of HCB					
			Disposal		Energy Recovery		Treatment	
			On-site	Off-site	On-site	Off-site	On-site	Off-site
325211	Plastics Material and Resin Manufacturing	5,138,293	10	0	0	0	5,135,049	3,234
325181	Alkalies and Chlorine Manufacturing	1,169,311	225	0	230,168	2	933,655	5,261
325199	All Other Basic Organic Chemical Manufacturing	198,788	14	8	0	0	169,450	29,316
<b>Total</b>		<b>6,506,392</b>	<b>249</b>	<b>8</b>	<b>230,168</b>	<b>2</b>	<b>6,238,154</b>	<b>37,810</b>

**Disposal:** Facilities disposed of less than 0.1 percent of the HCB generated in 2007.

**Energy Recovery:** Facilities used energy recovery, mostly on site, to manage 3.5 percent of the HCB generated.

**Treatment:** Facilities treated, mostly on site, approximately 97 percent of the HCB generated in 2007.

In 2007, facilities also recycled approximately 1 million pounds of HCB. See Exhibit C.3 in Appendix C for additional information about the recycling of HCB. Facilities also released approximately 100 pounds of HCB as air emissions and surface water discharges in 2007. See Appendix D for additional information about releases of HCB.

## Data Derived From Hazardous Waste Biennial Reports for Hexachlorobenzene

In this section, we present data about HCB contained in hazardous wastes, derived from information submitted by facilities in Biennial Reports under RCRA. We derived these data by applying a methodology to estimate the quantity of HCB contained in BR waste streams. The estimates of HCB contained in hazardous wastes supplement the data reported to TRI, providing a broader perspective regarding the industries that generate and manage wastes that contain HCB. Based on applying our methodology to the 2007 BR data, we estimate that 75 facilities in 38 NAICS codes reported hazardous wastes, virtually all non-wastewater, containing approximately 1.3 million pounds of HCB. Facilities in two industries: NAICS code 325199 (All Other Basic Organic Chemical Manufacturing) and NAICS code 325181 (Alkalies and Chlorine Manufacturing) accounted for approximately 98 percent of the total estimated quantity of HCB in the hazardous waste streams (Exhibit 4.27).

**Exhibit 4.27. Estimated Quantity of Hexachlorobenzene in Primary Generation Hazardous Waste, by NAICS Code (2007)**

Primary NAICS Code	NAICS Code Description	Number of Facilities	Quantity (pounds) of HCB			Percent of Total Quantity
			Wastewaters	Non-Wastewaters	Total Quantity	
325199	All Other Basic Organic Chemical Manufacturing	8	0	1,089,325	1,089,325	84.9%
325181	Alkalies and Chlorine Manufacturing	7	<1	171,601	171,601	13.4%
<b>Total</b>		<b>15</b>	<b>&lt;1</b>	<b>1,260,926</b>	<b>1,260,926</b>	<b>98.3%</b>

In 2007, facilities generated hazardous waste containing HCB in 59 counties within 29 states. Facilities in Louisiana and Texas (EPA Region 6) generated an estimated 96 percent of the HCB contained in hazardous wastes (Exhibit 4.28).

**Exhibit 4.28. States and Counties in Which Facilities Generated 98 Percent of Hexachlorobenzene Contained in Primary Generation Hazardous Waste (2007)**

EPA Region	State	County	Estimated Quantity of HCB Contained in Hazardous Wastes (pounds)	Percent of Total Quantity of HCB Contained in Hazardous Wastes
6	TX	Brazoria	703,273	54.8%
6	LA	Iberville	276,842	21.6%
6	LA	Ascension	151,625	11.8%
6	TX	San Patricio	92,718	7.2%
<b>Total</b>			<b>1,224,458</b>	<b>95.5%</b>

Exhibit 4.29 shows how facilities reported managing hazardous wastes that contain HCB. For example, facilities incinerated hazardous wastes containing an estimated 524,000 pounds of HCB and recovered/reclaimed hazardous wastes containing approximately 398,000 pounds of HCB. See Appendix E for a full list of the BR management codes and their descriptions.

**Exhibit 4.29. Methods Used to Manage Hazardous Wastes Containing Hexachlorobenzene (2007)**

Management Method Group	Management Method Code Description	Quantity of HCB Managed (2007)	Percent of Total Estimated Quantity of HCB
Reclamation and Recovery	Other recovery or reclamation for reuse	398,391	30.7%
	Energy recovery at this site	273,318	21.1%
	Fuel blending prior to energy recovery at another site	2,130	0.2%
<b>Reclamation and Recovery Total</b>		<b>673,839</b>	<b>52.0%</b>
Destruction or Treatment Prior to Disposal at Another Site	Incineration	523,631	40.4%
	Stabilization or chemical fixation prior to disposal at another site	2	<0.1%
	Macro-encapsulation prior to disposal at another site	<1	<0.1%
	Other treatment	<1	<0.1%
<b>Destruction or Treatment Prior to Disposal at Another Site Total</b>		<b>523,633</b>	<b>40.4%</b>
Disposal	Landfill or surface impoundment that will be closed as landfill	86,937	6.7%
	Deepwell or underground injection	<1	<0.1%
<b>Disposal Total</b>		<b>86,937</b>	<b>6.7%</b>
Transfer Off Site	Storage, bulking, and/or transfer off site	12,142	0.9%
<b>Transfer Off Site Total</b>		<b>12,142</b>	<b>0.9%</b>
NA	NA	26	<0.1%
<b>NA Total</b>		<b>26</b>	<b>&lt;0.1%</b>
<b>Grand Total</b>		<b>1,296,577</b>	<b>100.0%</b>