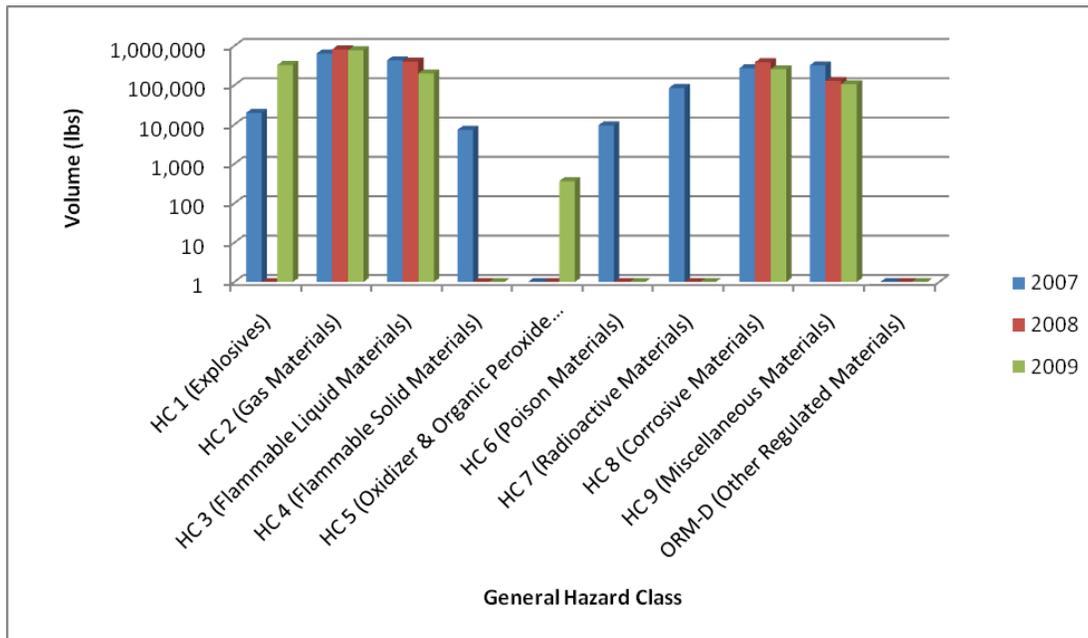


5.4 Kodiak

The transportation of hazardous materials into the Kodiak Subarea (KI) includes two modes of transportation: air and marine. Marine shipment is primary with air shipments making up an undetermined portion of the total volume. While there were no air shipments reported in the data received for this study, it is known that there are shipments via aircraft, and this is reflective of the limited scope of the air shipment data received and evaluated. For example, the Kodiak Launch Complex (KLC) located 44 road miles south of the city of Kodiak at Narrow Cape receives rocket motors and other payloads that are delivered via aircraft (e.g. Air Mobility Command aircraft) to the regional airport and then trucked to the KLC³³. However, this air transportation information was not captured in this dataset. An undetermined portion of the hazardous material commodities entering via marine transportation and destined for the KLC were captured in this dataset and are reflected in the information that follows. Once a commodity is delivered to Kodiak Island, it would then be trucked to the destination location. In the case of the KLC, hazardous material deliveries would leave the regional airport and be driven to Narrow Cape via multiple roadway segments. The breakdown of hazardous materials volumes from year to year by Hazard Class is depicted in Figure 5-16 below.

Figure 5-16. Volumes of Hazardous Materials Shipped into KI presented on a log scale



In general and as shown in Figures 5-17, 5-18, and 5-19 below, HC 2 commodities (Gas Materials), HC 3 commodities (Flammable Liquid Materials), and HC 8 commodities (Corrosive Materials) consistently dominated the volume of hazardous materials commodities shipped within the Kodiak Subarea.

³³ Alaska Aerospace Corporation, <http://www.akaerospace.com>

Figure 5-17. KI Hazardous Materials Percentage of Total Volume by Hazard Class for 2007

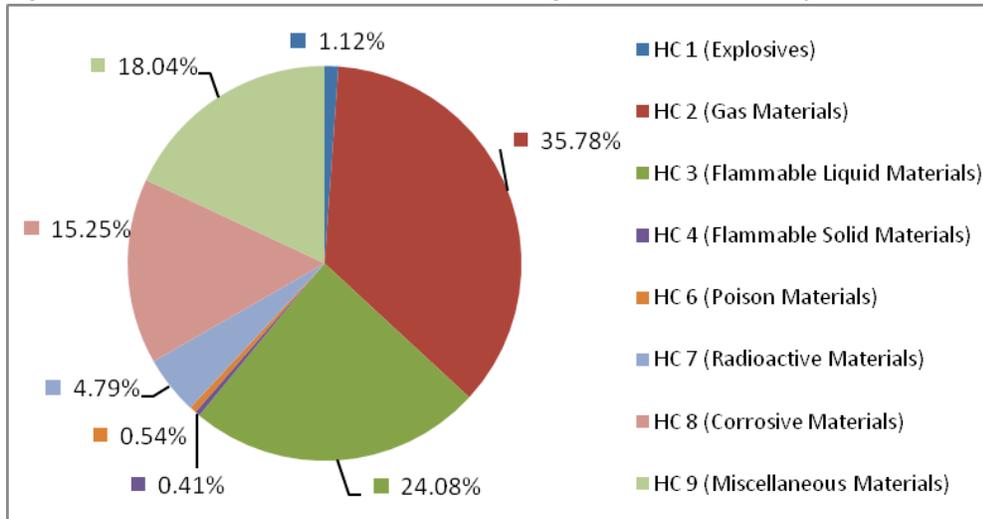


Figure 5-18. KI Hazardous Materials Percentage of Total Volume by Hazard Class for 2008

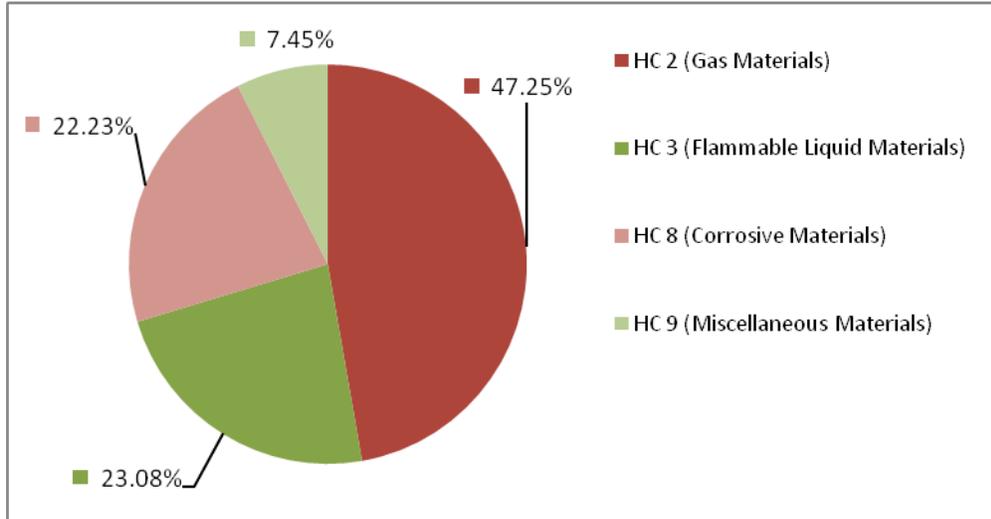


Figure 5-19. KI Hazardous Materials Percentage of Total Volume by Hazard Class for 2009

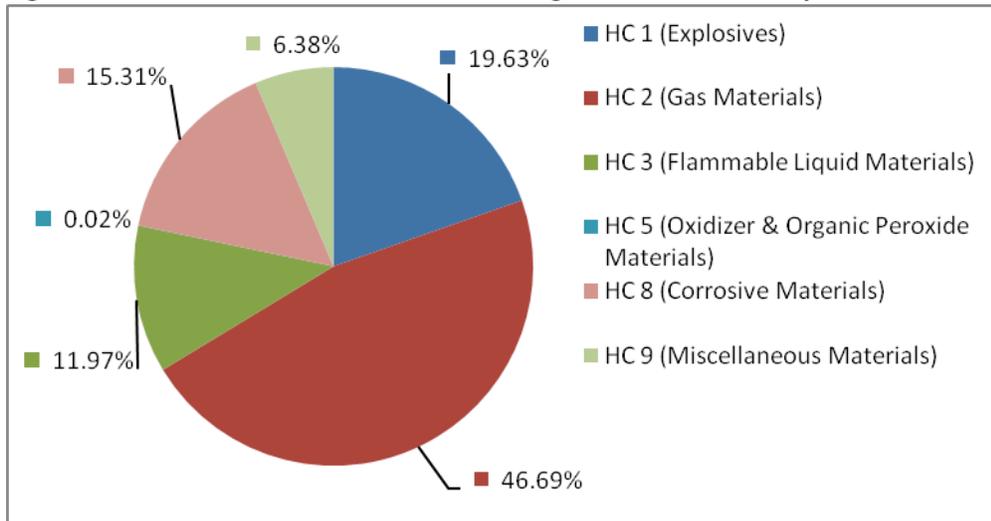


Table 5-27 below lists the total volume of hazardous materials shipped within the Kodiak Subarea by hazard class for each calendar year evaluated for this study.

Table 5-27. Volumes of Hazard Class Transported within KI Subarea by Calendar Year

Hazard Class	2007 (Total Volume in lbs)	2008 (Total Volume in lbs)	2009 (Total Volume in lbs)
HC 1 (Explosives)	19,894	-	327,783
HC 2 (Gas Materials)	638,145	818,249	779,633
HC 3 (Flammable Liquid Materials)	429,498	399,648	199,896
HC 4 (Flammable Solid Materials)	7,358	-	-
HC 5 (Oxidizer & Organic Peroxide Materials)	-	-	366
HC 6 (Poison Materials)	9,583	-	-
HC 7 (Radioactive Materials)	85,512	-	-
HC 8 (Corrosive Materials)	271,984	384,939	255,671
HC 9 (Miscellaneous Materials)	321,791	128,958	106,570
ORM-D (Other Regulated Materials)	-	-	-

A more detailed evaluation of each hazard class is provided below. For Kodiak Subarea, the volume shipped threshold was established at 10,000 lbs.

HC 1 Explosives: The only explosives that were transported through the Kodiak Subarea in 2007 were HC 1.4. In 2008 there were no shipments of explosives noted, and in 2009 the explosives shipped through Kodiak Island expanded to HC 1.1, 1.3 and 1.4. Table 5-28 lists the primary HC 1 commodities shipped within the Kodiak Subarea.

Table 5-28. Primary Hazard Class 1 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
1.1	Explosive, Blasting, Type E	0241
	Explosive, Blasting, Type A	0081
	Cord Detonating	0065
	Boosters	0042
1.4	Articles, Explosive, N.O.S.	0349

There were no HC 1.2, 1.3 or 1.5 commodities shipped in this subarea that exceeded the volume shipped of 10,000 lbs.

HC 2 Gas Materials: HCs 2.1, 2.2 and 2.3 were transported in the Kodiak Subarea between 2007, 2008 and 2009. HC 2.2 represented the largest volume shipped by an order of magnitude. Table 5-29 lists the primary HC 2 commodities shipped within the Kodiak Subarea.

Table 5-29. Primary Hazard Class 2 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
2.1	Acetylene, Dissolved	1001
2.2	Chlorodifluoromethane or Refrigerant Gas R22	1018
	1,1,1,2-Tetrafluoroethane or Refrigerant Gas R134A	3159
	Carbon Dioxide, Refrigerated Liquid	2187
	Compressed Gas, N.O.S.	1956
	Fire Extinguishers	1044
	Argon, Compressed	1006
	Nitrous Oxide	1070
	Carbon Dioxide	1013
	Helium, Compressed	1046
	Nitrogen, Compressed	1066
	Oxygen, Compressed	1072

There were no HC 2.3 commodities that were shipped that exceeded 10,000 lbs.

HC 3 Flammable Liquid Materials: The volume of HC 3.0 shipped in the Kodiak Subarea decreased between 2007 and 2008 by approximately 10% and another 25% between 2008 and 2009. Table 5-30 lists the primary HC 3 commodities shipped within the Kodiak Subarea.

Table 5-30. Primary Hazard Class 3 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
3.0	Isopropanol or Isopropyl Alcohol	1219
	Paint	1263
	Methanol	1230
	Flammable Liquids, N.O.S.	1993
	Adhesives	1133
	Kerosene	1223
	Petroleum Distillates, N.O.S. or Petroleum Products N.O.S.	1268

HC 4 Flammable Solid Materials: Small volumes of HC 4.1 were transported through the Kodiak Subarea in 2007. There were no other shipments noted for 2008 or 2009 based on the data evaluated for this study.

HC 5 Oxidizer and Organic Peroxide Materials: A very small volume of HC 5.1 was transported within the Kodiak Subarea during 2009 and it did not exceed 10,000 lbs shipped.

HC 6 Poisons: A relatively small volume of HC 6.1 was shipped in the Kodiak Subarea in 2007, and it did not exceed 10,000 lbs shipped. No shipments were reported in 2008 or 2009 according to the data received and evaluated for this study.

HC 7 Radioactive Materials: HC 7.0 was transported within the Kodiak Subarea in 2007. No shipments were reported in 2008 or 2009 according to the data received and evaluated for this study. Table 5-31 lists the primary HC 7 commodities shipped within the Kodiak Subarea.

Table 5-31. Primary Hazard Class 7 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
7.0	Radioactive Material, Excepted Package-Articles Manufactured From Natural or Depleted Uranium or Natural Thorium	2910
	Radioactive Material, Type A Package, Special Form	3332

HC 8 Corrosive Materials: The volume of HC 8.0 commodities shipped within the Kodiak Subarea remained relatively consistent from year to year with no discernible trend noted. Table 5-32 lists the primary HC 8 commodities shipped within the Kodiak Subarea.

Table 5-32. Primary Hazard Class 8 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
8.0	Phosphoric Acid	1805
	Sulfuric Acid	2796
	Corrosive Liquids, N.O.S.	1760
	Corrosive Liquids, Basic, Inorganic, N.O.S.	3266
	Sodium Hydroxide Solution	1824
	Batteries, Wet, Filled with Acid	2794
	Batteries, Wet, Non-Spillable	2800
	Batteries, Wet, Filled with Alkali	2795

HC 9 Miscellaneous Materials: The volume of HC 8.0 commodities shipped within the Kodiak Island decreased from year to year. Dropping by over 50% between 2007 and 2008 and then by another 20% between 2008 and 2009, this was the only subarea to

experience this type of volume decrease. Table 5-33 lists the primary HC 9 commodities shipped within the Kodiak Subarea.

Table 5-33. Primary Hazard Class 9 Commodities Shipped within the KI Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
9.0	Engines, Internal Combustion (Flammable Gas Powered)	3166
	Environmentally Hazardous Substances, Liquid, N.O.S.	3082
	Lithium Batteries, Contained in Equipment	3091

Figure 5-20 depicts the volume of hazardous materials shipped each year within the Kodiak Subarea by Hazardous Material Name for volumes exceeding 10,000 pounds.

Figure 5-20. Hazardous Material Commodities by Hazardous Material Name (Greater than 10,000 lbs) for KI, for 2007 through 2009, presented on a log scale.

