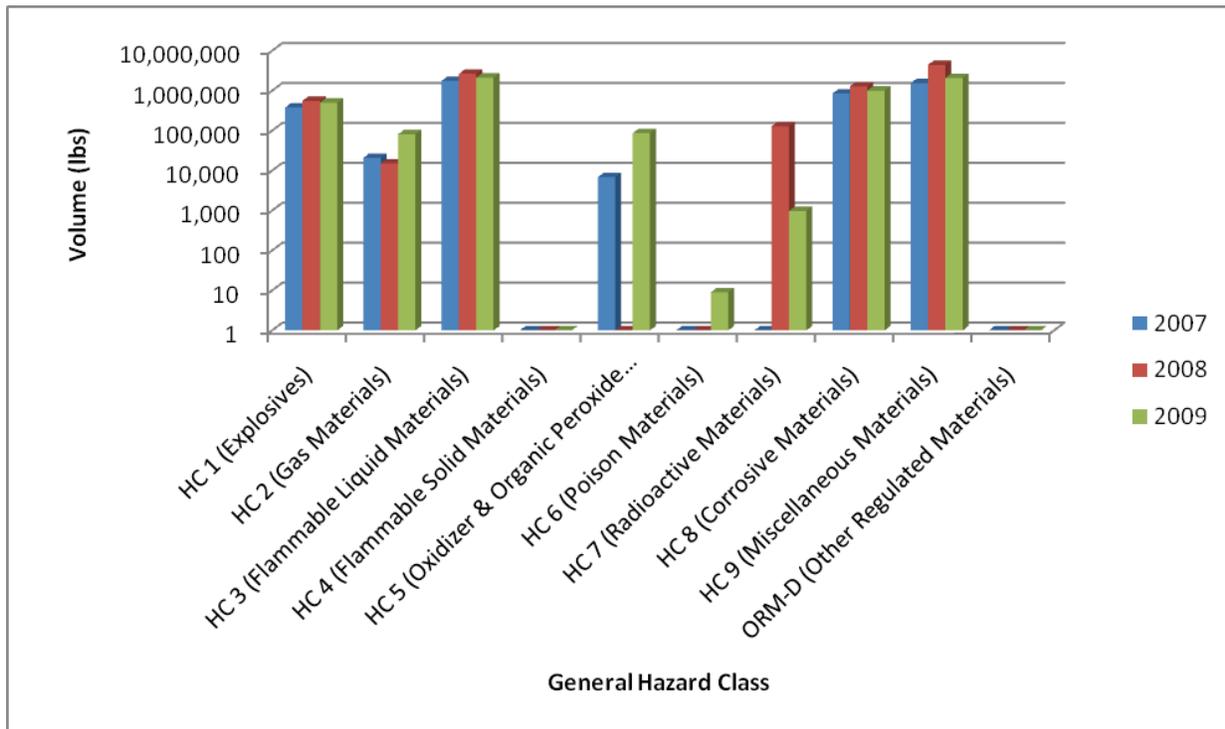


### 5.7 Western Alaska

The transportation of hazardous materials through the Western Alaska Subarea (WAK) includes two modes of transportation: air and marine. Many of the commodities listed as transiting this subarea are destined for other subarea locations. For example, hazardous materials shipments that are delivered via barge/vessel to any of the subareas north of the Western Alaska Subarea (e.g. Northwest Arctic, and North Slope), or that are transiting from subareas north to southern locations will be noted as transiting within the Western Alaska Subarea. The breakdown of hazardous materials volumes from year to year by Hazard Class is depicted in Figure 5-31.

**Figure 5-31. Volumes of Hazardous Materials Shipped into WAK presented on a log scale**



In general, HC 3 commodities (Flammable Liquid Materials), HC 9 commodities (Miscellaneous Materials), and HC 8 commodities (Corrosive Materials) consistently dominated the volume of hazardous materials commodities shipped within the Western Alaska Subarea. Figures 5-32, 5-33, and 5-34 depict the breakdown by hazard class based on percentage of volumes shipped within the Western Alaska Subarea.

Figure 5-32. WAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2007

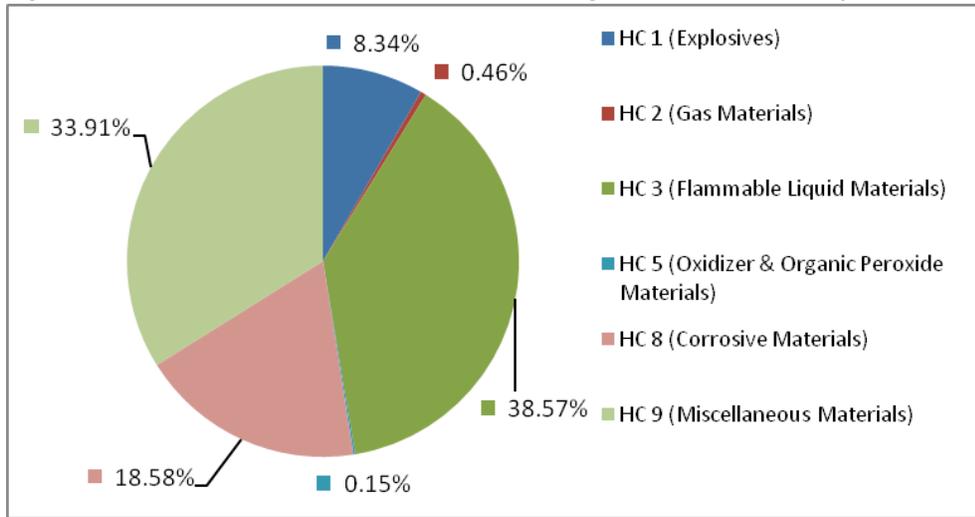


Figure 5-33. WAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2008

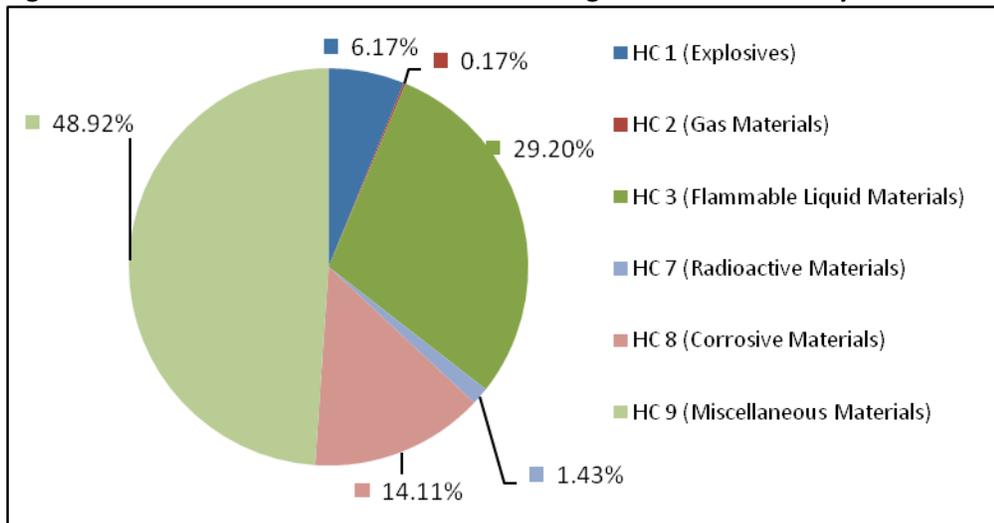


Figure 5-34. WAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2009

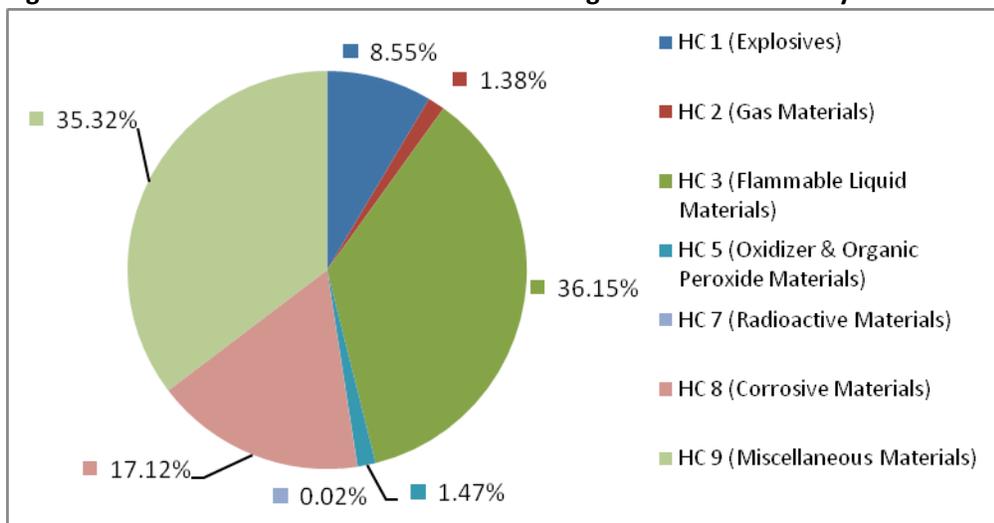


Table 5-47 lists the volumes of hazardous materials shipped within the Western Alaska Subarea by hazard class for each calendar year evaluated for this study.

**Table 5-47. Volumes of Hazard Class Transported within WAK Subarea by Calendar Year**

Hazard Class	2007 (Total Volume in lbs)	2008 (Total Volume in lbs)	2009 (Total Volume in lbs)
HC 1 (Explosives)	380,475	559,350	503,325
HC 2 (Gas Materials)	20,802	15,067	81,268
HC 3 (Flammable Liquid Materials)	1,759,777	2,648,203	2,127,080
HC 4 (Flammable Solid Materials)	-	-	-
HC 5 (Oxidizer & Organic Peroxide Materials)	6,884	-	86,388
HC 6 (Poison Materials)	-	-	9
HC 7 (Radioactive Materials)	-	129,487	975
HC 8 (Corrosive Materials)	847,958	1,279,803	1,007,130
HC 9 (Miscellaneous Materials)	1,547,084	4,435,771	2,078,190
ORM-D (Other Regulated Materials)	-	-	-

A more detailed evaluation of each hazard class is provided below. A shipment volume threshold was not established for the Western Alaska Subarea due to the limited number and volumes of hazardous materials shipped.

HC 1 Explosives: The primary explosives that were transported through the Western Alaska Subarea were HC 1.0. The volume increased by about 30% between 2007 and 2008 and remained fairly consistent into 2009. The primary mode of transportation for these commodities in this Subarea was via air – therefore the volumes shipped, as noted in the previous section, are somewhat artificial and based on an algorithm generated from discussions with the air carrier. However, the volume changes reflect the increase in the number of hazardous materials shipments into the Western Alaska Subarea. Table 5-48 lists the primary HC 1 commodities shipped within the Western Alaska Subarea.

**Table 5-48. Primary Hazard Class 1 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
1.0	Ammunition	0006

- Within HC 1.0 (unspecified hazard class division), the primary commodity shipped (greater than 1,000 lbs) was “AMMUNITION” with UN ID Number 0006.

HC 2 Gas Materials: HC 2.2 represented the commodities shipped in the Western Alaska Subarea. The volume of shipments showed a slight decrease between 2007 and 2008, and an approximate 80% increase between 2008 and 2009. Table 5-49 lists the primary HC 2 commodities shipped within the Western Alaska Subarea.

**Table 5-49. Primary Hazard Class 2 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
2.2	Fire Extinguishers	1044
	Liquefied Gas, N.O.S.	3163
	Sulfur Hexafluoride	1080
	Carbon Dioxide	1013
	Dichlorofluoromethane or Refrigerant Gas R12	1028
	Compressed Gas, N.O.S.	1956
	Nitrogen, Compressed	1066

HC 3 Flammable Liquid Materials: The shipments of HC 3.0 within the Western Alaska Subarea were shipped via aircraft and marine corridors and displayed a broader variety in 2008. The volumes shipped by air, as noted in the previous section, are somewhat artificial and based on an algorithm generated from discussions with the air carrier. However, the volume changes reflect the changes in the number of hazardous materials shipments into the Northwest Arctic Subarea. Table 5-50 lists the primary HC 3 commodities shipped within the Western Alaska Subarea.

**Table 5-50. Primary Hazard Class 3 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
3.0	Petroleum Distillates, N.O.S. or Petroleum Products N.O.S.	1268
	Combustible Liquid, N.O.S.	1993
	Gasoline	1203
	Resin Solution	1866
	Alcohols, N.O.S.	1987
	Paint	1263
	Flammable Liquids, Corrosive, N.O.S.	2924
	Flammable Liquids, N.O.S.	1993
	Undecane	2330
	Adhesives	1133
	Fuel, Aviation, Turbine Engine	1863
	Butanols	1120

HC 4 Flammable Solid Materials: There were no Flammable Solid Materials transported within this Subarea during this time period according to the data evaluated.

HC 5 Oxidizer and Organic Peroxide Materials: HC 5.1 and 5.2 were shipped within the Western Alaska Subarea in 2007 and 2009. The volume of HC 5.1 increased by an order of magnitude between 2007 and 2009 while HC 5.2 shipments stopped during this time period. Table 5-51 lists the primary HC 5 commodities shipped within the Western Alaska Subarea.

**Table 5-51. Primary Hazard Class 5 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
5.1	Oxidizing, Solid, N.O.S.	1479
	Hydrogen Peroxide, Aqueous Solutions	2014
5.2	Organic Peroxide Type D, Solid	3106

HC 6 Poisons: A very small amount of HC 6.1 (Mercuric Chloride) was reported being shipped in 2009 within the Western Alaska Subarea. The small volume was retained for reporting purposes because it is classified as an EHS. There were no HC 6.0 commodities that were shipped that exceeded 1,000 lbs.

HC 7 Radioactive Materials: HC 7.0 was shipped within the Western Alaska Subarea in 2008 and 2009 as determined by the data evaluated for this study. The volume of shipments reported decreased dramatically between 2008 and 2009. Table 5-52 lists the primary HC 7 commodities shipped within the Western Alaska Subarea.

**Table 5-52. Primary Hazard Class 7 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
7.0	Radioactive Material, Type A Package	2915
	Radioactive Material, Type A Package, Special Form	3332

HC 8 Corrosive Materials: The volumes of HC 8.0 transported within the Western Alaska Subarea increased by approximately 30% between 2007 and 2008, and decreased by approximately 20% between 2008 and 2009. Table 5-53 lists the primary HC 8 commodities shipped within the Western Alaska Subarea.

**Table 5-53. Primary Hazard Class 8 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
8.0	Corrosive Liquid, Basic, Inorganic, N.O.S.	3266
	Tetraethylenepentamine	2320

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
	Hypochlorite Solutions	1791
	Batteries, Wet, Non-Spillable	2800
	Batteries, Wet, Filled with Acid	2794
	Corrosive Cleaning Supplies	1760
	Formic Acid	1779

HC 9 Miscellaneous Materials: The volume of HC 9.0 commodities shipped within the Western Alaska Subarea saw a dramatic increase between 2007 and 2008 and then dropped but remained higher than 2007 levels in 2009. The sharp increase in 2008 could be attributable to the increase in the Alaska Permanent Fund Dividend checks during this timeframe. Table 5-54 lists the primary HC 9 commodities shipped within the Western Alaska Subarea.

**Table 5-54. Primary Hazard Class 9 Commodities Shipped within the WAK Subarea**

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
9.0	Lithium Batteries	3090
	Lithium Batteries, Contained in Equipment	3091
	Environmentally Hazardous Substance, Liquid, N.O.S.	3082
	Engines / Vehicles	3166

Figure 5-35 depicts the volume of hazardous materials shipped each year within the Western Alaska Subarea by Hazardous Material Name for volumes exceeding 1,000 pounds.

Figure 5-35. Hazardous Material Commodities by Hazardous Material Name (Greater than 1,000 lbs) for the Western Alaska Subarea, for 2007 through 2009, presented on a log scale.

