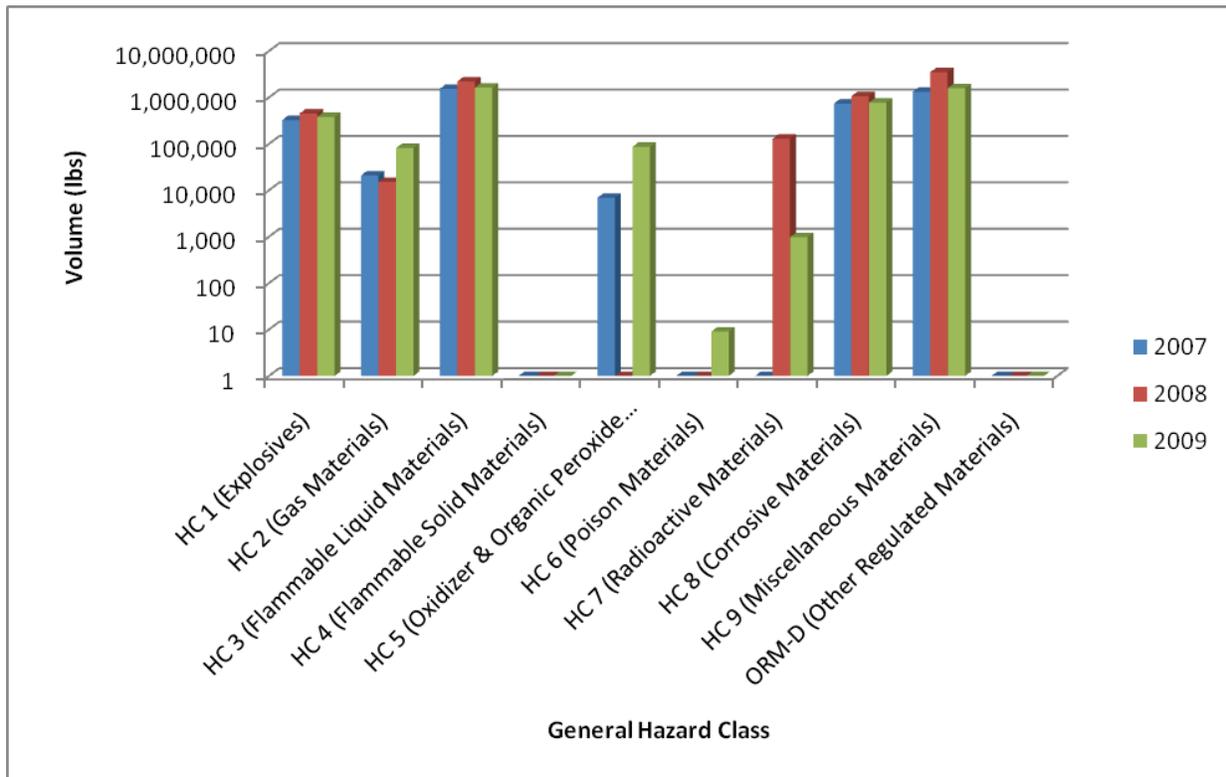


5.8 Northwest Arctic

The transportation of hazardous materials through the Northwest Arctic Subarea (NWA) 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 the North Slope, or that are transiting from the North Slope to southern locations will be noted as transiting within the Northwest Arctic Subarea. The breakdown of hazardous materials volumes from year to year by Hazard Class is depicted in Figure 5-36 below.

Figure 5-36, Volumes of Hazardous Materials Shipped into the NWA 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 Northwest Arctic Subarea. Figures 5-37, 5-38, and 5-39 depict the volume of hazardous materials shipped as a percentage of the total volume for each calendar year evaluated for this study.

Figure 5-37. NWA Hazardous Materials Percentage of Total Volume by Hazard Class for 2007

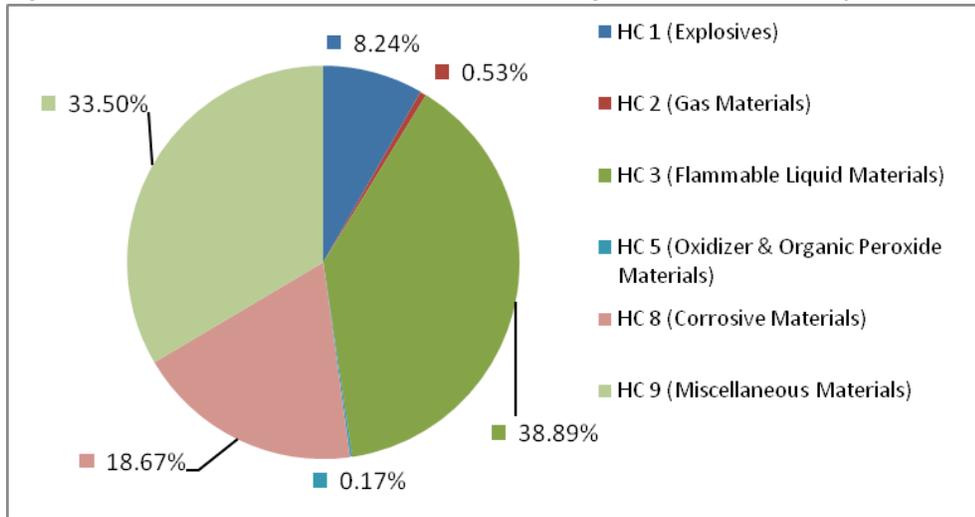


Figure 5-38. NWA Hazardous Materials Percentage of Total Volume by Hazard Class for 2008

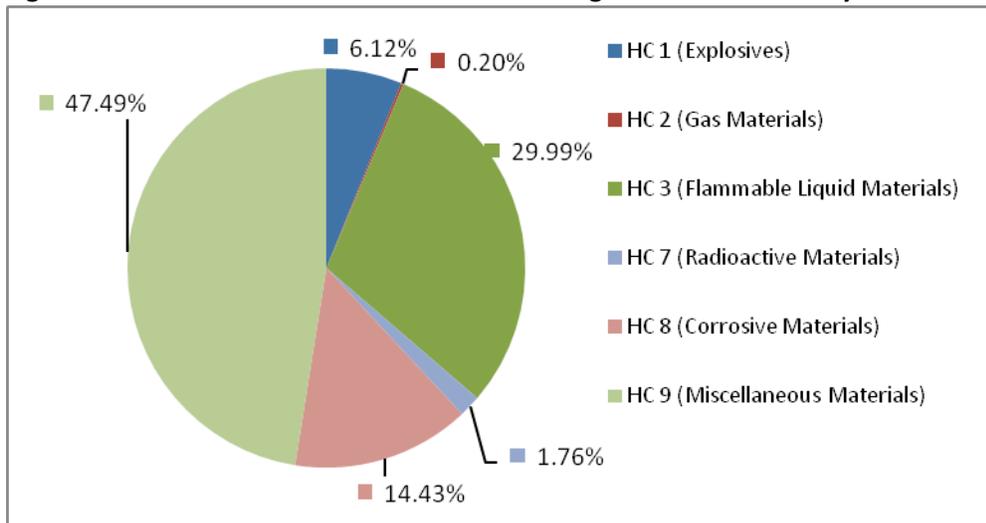


Figure 5-39. NWA Hazardous Materials Percentage of Total Volume by Hazard Class for 2009

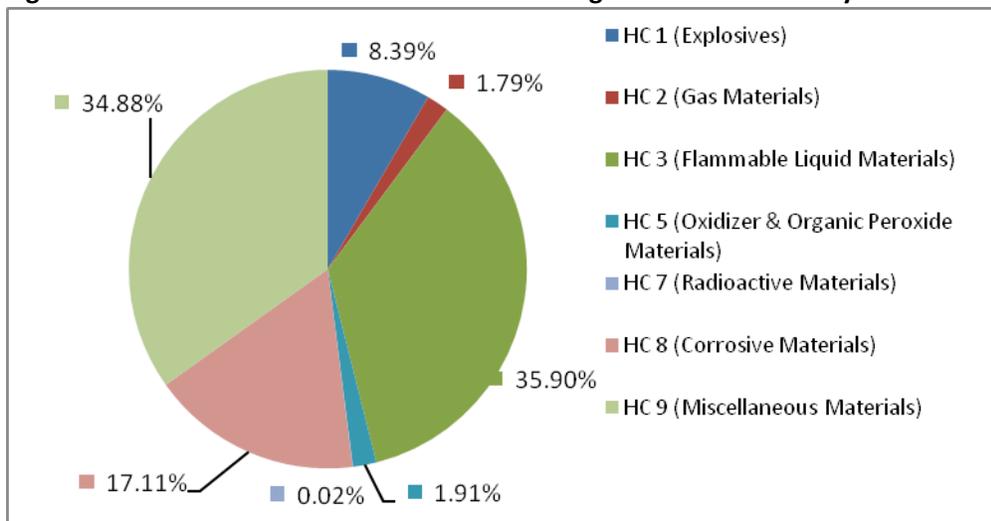


Table 5-55 lists the volume of hazardous materials shipped within the Northwest Arctic Subarea by hazard class for each calendar year evaluated for this study.

Table 5-55. Volumes of Hazard Class Transported within NWA Subarea by Calendar Year

Hazard Class	2007 (Total Volume in lbs)	2008 (Total Volume in lbs)	2009 (Total Volume in lbs)
HC 1 (Explosives)	325,575	451,350	379,800
HC 2 (Gas Materials)	20,802	15,067	81,268
HC 3 (Flammable Liquid Materials)	1,537,126	2,210,203	1,626,117
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)	738,158	1,063,707	774,724
HC 9 (Miscellaneous Materials)	1,324,433	3,499,373	1,579,792
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 Northwest Arctic Subarea due to the limited number and volume of shipments evaluated.

HC 1 Explosives: Similar to the Western Alaska Subarea, the primary explosives that were transported through the Northwest Arctic Subarea were HC 1.0. There was an approximate 30% jump in volume between 2007 and 2008, and then an approximate 25% drop between 2008 and 2009. The primary modes of transportation for these commodities in this Subarea were via air and marine. The volumes shipped via 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 for the most part were reflective of the changes in the number of hazardous materials shipments into the Northwest Arctic Subarea. Table 5-56 lists the primary HC 1 commodities shipped within the Northwest Arctic Subarea.

Table 5-56. Primary Hazard Class 1 Commodities Shipped within the NWA Subarea

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

HC 2 Gas Materials: HC 2.2 represented the commodities shipped in the Northwest Arctic Subarea. The volume of shipments showed a slight decrease between 2007 and 2008, and an approximate 80% increase between 2008 and 2009. Table 5-57 lists the primary HC 2 commodities shipped within the Northwest Arctic Subarea.

Table 5-57. Primary Hazard Class 2 Commodities Shipped within the NWA Subarea

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

HC 3 Flammable Liquid Materials: The shipments of HC 3.0 within the Northwest Arctic Subarea were primarily shipped via aircraft. 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 changes in the number of hazardous materials shipments into the Northwest Arctic Subarea. Table 5-58 lists the primary HC 3 commodities shipped within the Northwest Arctic Subarea.

Table 5-58. Primary Hazard Class 3 Commodities Shipped within the NWA Subarea

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
3.0	Resin Solution	1866
	Alcohols, N.O.S.	1987
	Paint	1263
	Flammable Liquids, Corrosive, N.O.S.	2924
	Petroleum Distillates, N.O.S. or Petroleum Products, N.O.S.	1268
	Flammable Liquids, N.O.S.	1993
	Gasoline	1203
	Undecane	2330
	Combustible Liquids, N.O.S.	1993
	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 Northwest Arctic 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 5-59 lists the primary HC 5 commodities shipped within the Northwest Arctic Subarea.

Table 5-59. Primary Hazard Class 5 Commodities Shipped within the NWA Subarea

Hazard Class	Hazardous Material Description (Greater than 1,000 lbs Shipped)	UN ID Number
5.1	Hydrogen Peroxide, Aqueous Solutions	2014
	Oxidizing Solid, N.O.S.	1479
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 Northwest Arctic Subarea. The small volume was retained for reporting purposes because it is classified as an EHS.

HC 7 Radioactive Materials: HC 7.0 was shipped within the Northwest Arctic 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 5-60 lists the primary HC 7 commodities shipped within the Northwest Arctic Subarea.

Table 5-60. Primary Hazard Class 7 Commodities Shipped within the NWA 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 volume of HC 8.0 transported within the Northwest Arctic Subarea increased by approximately 30% between 2007 and 2008, and decreased by approximately 30% between 2008 and 2009. Table 5-61 lists the primary HC 8 commodities shipped within the Northwest Arctic Subarea.

Table 5-61. Primary Hazard Class 8 Commodities Shipped within the NWA 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
	Hypochlorite Solutions	1791
	Batteries, Wet, Non-Spillable	2800
	Batteries, Wet, Filled with Acid	2794
	Corrosive Cleaning Supplies	1760
	Sulfuric Acid	2796
	Formic Acid	1779

HC 9 Miscellaneous Materials: The volume of HC 9.0 commodities shipped within the Northwest Arctic 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 5-62 lists the primary HC 9 commodities shipped within the Northwest Arctic Subarea.

Table 5-62. Primary Hazard Class 9 Commodities Shipped within the NWA Subarea

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

Figure 5-40 depicts the volume of hazardous materials shipped each year within the Northwest Arctic Subarea by Hazardous Material Name.

Figure 5-40. Hazardous Material Commodities by Hazardous Material Name (Greater than 1,000 lbs) for the Northwest Arctic Subarea, for 2007 through 2009, presented on a log scale.

