

**Table 3.4.1 H: Ammunition for Shooting Ranges – Zinc**

Financial Parameter	Measure/Metric	Source of Information
<i>Required Data</i>		
Initial purchase price for chemical/alternative	Zinc raw material price: \$0.88 per pound, Platts Metals Week North American Special High Grade, December 2005  Lead raw material price: \$0.65 per pound, Platts Metals Week North American producer price, December 2005	Gabby, 2006b  Gabby, 2006a
Initial purchase cost for end-product/component	Not available.	
Availability of chemical/alternative	U.S. mine production in 2005 was 837,800 tons. Domestic zinc metal production capacity accounts for less than one-third of quantity consumed domestically. Canada and Mexico are leading sources of zinc. In 2005, there was a 200,000 ton production deficit worldwide. (USGS)	Gabby, 2006b
Availability of component/end-product	Federal produces ammunition with a bullet that has a stranded zinc core and a copper jacket.	Federal, 2006
Capital costs	The process used to manufacture bullets with a stranded zinc core is different than the lead bullet manufacturing process and therefore a switch from lead to zinc bullets would require significant capital investment.	
<i>Additional Data if Available</i>		
Key end-of-product life costs	When zinc ammunition is used at a firing range where lead ammunition is also used, the zinc contaminates the lead making it unsuitable for recycling. The recovered mix of zinc and lead bullets must be disposed of as hazardous waste.	Vargas, 2004