The characteristics of phosphate ores from different sources can vary significantly. The target specifications for marketable phosphate concentrates can also vary for each end user. The impurities associated with phosphate reserves include clay, silica quartz, silicates, carbonate minerals, iron oxide minerals, organics, etc. Among the technologies for processing phosphate ores, flotation is most commonly used to separate phosphate from those impurities. Examples of processing phosphate ores around the world with ArrMaz CustoFloat® (CF) and CustAmine® (CA) collectors with approaches such as reagent scheme and flowsheet will be presented.