

Figure 6.1. Schematic representation of dissolution as a function of time.

Machiels and Pescatore (1983) illustrate this effect of surface area to volume ratio with both laboratory leach data and computational modeling of the leach data; presented here in Fig. 6.2. In this example of the leaching of a borosilicate glass analog of a nuclear wastefrom, the glass dissolution, as represented by a normalized mass loss, is an order of magnitude less in leaching solutions with a high SA/V versus a low SA/V.

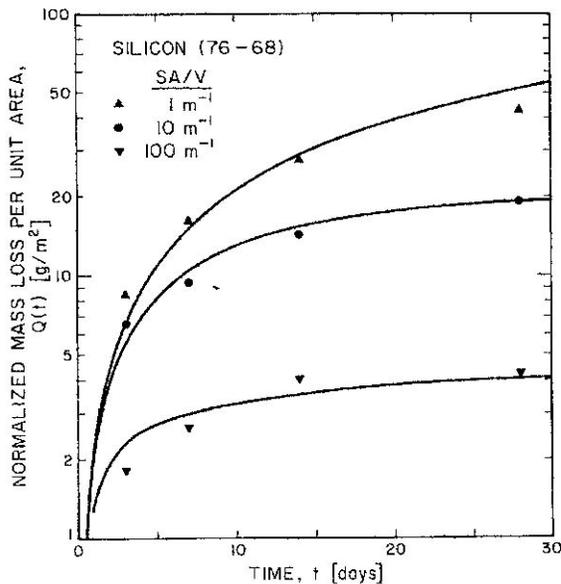


Figure 6.2. Effect of SA/V ratio on the release of silicon to leaching solutions for a borosilicate glass. [Machiels and Pescatore, 1983]