

DISCUSSION

P. Dittmar¹ (written discussion)—My questions relate to the issue of proper disposal under RCRA:

1. What conclusions has First Brands reached regarding whether used antifreeze should generally be considered TCLP-Hazardous?
2. Of the samples analyzed, how many were taken directly from vehicles? Is there any statistically significant difference between the sample sets taken from vehicle versus others, perhaps revealing the effects of cross-contamination with other shop wastes?
3. What fraction of samples showed TCLP soluble lead in excess of the EPA 5-ppm threshold?
4. Do the lead data follow a normal definition? If so, what is the upper limit of the data as defined in EPA Method SW846?
5. To what extent was perchloroethylene observed and to what detectability limit?

Stephen M. Woodward (author's response)—1. First Brands has not made any conclusions about the classification of used antifreeze as an EPA Hazardous waste. We do recommend that if any one or more of the following apply, then the material should be treated as if it were hazardous:

- (a) State and/or local regulations require it.
- (b) A representative sample of the material on hand has been analyzed and has been found to contain lead above the standard.
- (c) A history of representative samples shows that lead levels have exceeded the standards for that specific location on a regular basis.
- (d) No sampling has been done and no recognized form of recycling is being used that would remove the hazardous material or deactivate it.

2. Fifty-eight of the coolant samples were taken directly from the vehicles. The only cross-contaminant that was identified in our samples was oil. There was only a slight difference found, but no test for significance was conducted.

3. We did not conduct TCLP analysis on every sample, however, based on our data, it is predicted that at least 80% of the vehicles will not exceed 5-ppm soluble lead (after filtration through a 0.7- μ m paper).

4. The distribution of data for lead was not a normal distribution because the lower limit is bound by zero. At this time, the upper statistical limit based on EPA Method SW846 is not known.

5. Perchloroethylene was not part of the initial list of materials to analyze for because it is not in any known antifreeze formulation and it is not part of any OEM cooling system preparation. As a result of a Safety-Kleen letter stating that it was used by OEMs in the preparation of radiators, several samples of used coolant and several samples from vehicles with less than 50 miles (80 km) on the odometer were tested and perchloroethylene was not detected in any samples by our methods (2-ppm limit of detection).

J. A. Lima² (written discussion)—One of your specimens was from a system that had not been changed in 12 years, if I understand correctly. I assume that it was a standard North

¹ Safety Kleen Corp., 1255 W. Old Higgins Rd., Elk Grove Village, IL 60007.

² Houghton Chemical Corp., Allston, MA.

American coolant, and am wondering what you think the practical life of a North American coolant might be, if proper charging procedures and de-ionized water were used in the initial fill?

Stephen M. Woodward (author's response)—The intent of this survey was not to determine the theoretical life of a coolant that was under ideal conditions, but rather, the objective was to characterize the quality of the used coolant under “real” conditions. The 12-year-old coolant that was collected was mixed in a drum at the service station and could not be segregated and analyzed.