APPLICATION NOTE

FLASHPOINT DETERMINATION OF WASTE

Introduction:
The flashpoint of waste liquids must be measured on waste disposal plants in order to classify the liquids for the combustion process. Similar as in the transport regulations the limits are 21C and 38C (these are the limits of the Austrian waste disposal plant).
The samples are paints, varnishes, oils, pure liquids and many different mixtures with highly flammable components. Due to the composition of these samples, the flashpoint range is wide but in the most cases just interesting below 40C. Therefore, the MINIFLASH FLPL is the best unit for this application.

MINIFLASH versus PM:
In the most cases a flashpoint tester is already available (very often a PM). Due to the large sample volume and labor intensive cleaning of the tester, MINIFLASH is the best choice because of sample volume of just 1mL and the easy and fast cleaning. Furthermore, the cooling time of the Abel Pensky or Pensky Martens is very long due to the large sample volume. The complete measuring time for flashpoint measurements below ambient temperature is approximately five times faster with MINIFLASH.

Problem:
When the waste is delivered to the plant it is not cooled and thus highly volatile and flammable components can evaporate. That means that the flashpoint measurement is not highly reproducible, especially when the sample is stored at ambient temperature over a longer period of time. Therefore, comparison measurements must be performed with great care.

Solution:
The drawn sample has to be cooled down at least 15C before the expected flashpoint. Since the flashpoint is not very often known it is the best to put the sample into an explosion-proof deep-freezer.

Measuring Procedure:
1. Select the start temperature of both testers 15C below the expected flashpoint. If it is not known, program a very low start temperature.
2. Fill the cooled sample into the sample cups of MINIFLASH and the other flashpoint tester and start the measurement immediately. Use the following settings for MINIFLASH:
   rate = 3C/min
   step = 2C
   air = 0.1s
   Use the stirrer, as for some kind of samples it might be necessary
3. If further comparison measurements are performed, always take and use a new sample and the test has to be performed with both testers at the same time!!!

Conclusion:
If you follow the above mentioned procedure you should get a very well correlation between MINIFLASH and the reference unit. However the advantages of MINIFLASH are certainly very convincing.