

Sabic is one of the world leading producers of polyolefins (PE&PP). Its PE product range includes linear low-density polyethylene (LLDPE), low-density polyethylene (LDPE) and high density polyethylene (HDPE). Its PP product range includes random, co- and homopolymer resins.



#### **Polymer raw materials and odor issues**

HDPE pellets can be used for underground water pipes or food packaging (caps, liners, closures, layers, ...). For such applications it is absolutely necessary to provide products without any residual solvent or monomers, which would give a "plastic" odor or taste to the foodstuff or water in contact with the processed HDPE.



At Sabic Polyolefine GmbH, polymer samples are currently evaluated by sensory panel following a Standard Operating Procedure (SOP) conform with the EN 1622 standard. This procedure requires long sample preparation. Sensory panel tests with at least three panelists are organized daily in order to assess each batch with a score from 0 to 4 (or worse) according to the odor. Batches with a score higher than 2 are rejected.

#### **Increase testing capabilities**

"In November 2005, a Gemini electronic nose was installed at the production quality control lab. Since we have built the database (around 100 samples for 3 references), we are using the instrument daily for routine quality control parallel to the sensory panel. Advantages of the Gemini electronic nose are:

- no sample preparation is necessary
- fast provided results correlate with sensory panel assessment.

With acceptance of the Gemini by independent tests institutes, we are able to do these tests without panelists.

The lab staff is satisfied with the electronic nose: "the Gemini instrument is easy to use and meets our needs."