



The METTLER TOLEDO Lynx™ controller/display shares an explosion-proof cabinet with two displays used by the Provox system that runs the plant. The Lynx controller zeros the scale before each batch, filters out signal noise caused by vibration, and passes the weight data along to the Provox system.

"All the scales in the plant are METTLER TOLEDO," said Ken Killion, the maintenance superintendent at the vinyl resin compounding plant of the Geon Company in Terre Haute, Indiana. "There's nothing comparable, and we get excellent service."

The largest scale there weighs railroad cars at around 200,000 pounds (90,7200 kg). The smallest is a tank scale with a capacity of less than 100 pounds (45.4 kg). The smallest was also one of the most difficult to bring up to the ISO 9001 standards under which the plant operates.

In early 1999, only 86 weighments out of every 100 were within tolerance. Now, 417 out of every 418 (99.76%) are within tolerance.



One of the three Ultramount™ low-capacity weigh modules that support the tank. The load is transmitted to the load cell via a vertical pin using a ball-and-cup suspension. If the tank shifts horizontally from thermal movement or by being bumped, the pin automatically rights itself to vertical, a requirement for accuracy. The vertical component is one of a pair of jacking bolts that prevent the tank from tipping and raise the empty tank for weigh-module servicing. The load cell is the horizontal component.

### Here's how the improvements were made

The tank scale is used to measure liquid modifiers that are added, along with various dry modifiers, to 1000-pound batches of pure polyvinyl chloride powder. The batches are heated and mixed, then sent on to be extruded into pellets. The pellets go to Geon customers who will extrude, mold, and laminate the vinyl into finished products. The modifiers give the finished products some of their most desirable properties, eg, suitability for various manufacturing processes, not to mention such characteristics as flexibility, tensile strength, UV resistance, color, and surface finish.

For each 1000-pound batch, the tank scale measures various combinations of six liquid modifiers in quantities ranging from 3 to 30 pounds (1.36-13.63 kg) in under four minutes. Thanks to the three METTLER TOLEDO Ultramount™ low-capacity weigh modules that support the tank, Geon gets accurate and repeatable measurements in increments as small as 1/10 of an ounce (2.8 g).



# The littlest tank scale

Geon Company and M.A. Hanna, both headquartered in Cleveland, Ohio, are scheduled to merge following approvals by stockholders and regulatory agencies. The resulting company, as yet unnamed, will be the largest polymer services company in the world, with 10,000 employees operating 80 manufacturing sites in 22 countries.



Neither the discharge pipe nor any of the six infeed lines touch the tank. No gaskets, no seals. Only air gaps. This eliminates vibration from the pumps and valves that control the liquid infeeds.

Getting from an acceptance rate of 86% to 99.76% involved several steps, including:

- Stiffening the springy mezzanine floor to reduce the transmission of vibrations to the load cells.
- Eliminating rigid connections between the tank and the six in-feed lines and the discharge line, further reducing the transmission of vibration.
- Installing dribble valves and associated control logic to allow liquids to enter the tank fast at first, then slowly as the target weight is approached.
- Installing the Ultramount low-capacity weigh modules for improved accuracy and better repeatability.
- Installing a METTLER TOLEDO Lynx™ controller/display to filter most remaining vibrations from the load cell signals.

At each step, Killion relied on the advice of Koenig Scale, the local METTLER TOLEDO distributor. Koenig installed the Ultramount weigh modules and the Lynx controller/display.

For more information on Ultramount weigh modules enter **16**

Maintenance superintendent Ken Killion with the smallest tank scale at the Geon plant. At the start of each shift, the operator checks the scale with a weight of known mass. Koenig Scale performs the scheduled calibrations and maintenance needed for ISO 9001 registration.

