

## Gravimetric liquid dosing of Peroxides in PEX-A processes

In former times the typical material for domestic water piping was copper. As a result of the enormous price increase of this material PEX (cross-linked Polyethylene) has become more and more interesting as a substitute.



PEX can be produced by different principles. But anyways the process is based on generating additional bonds between the polymer chains. This result in improved characteristics like higher impact and tension strength and higher resistance against heat compared to normal HDPE.

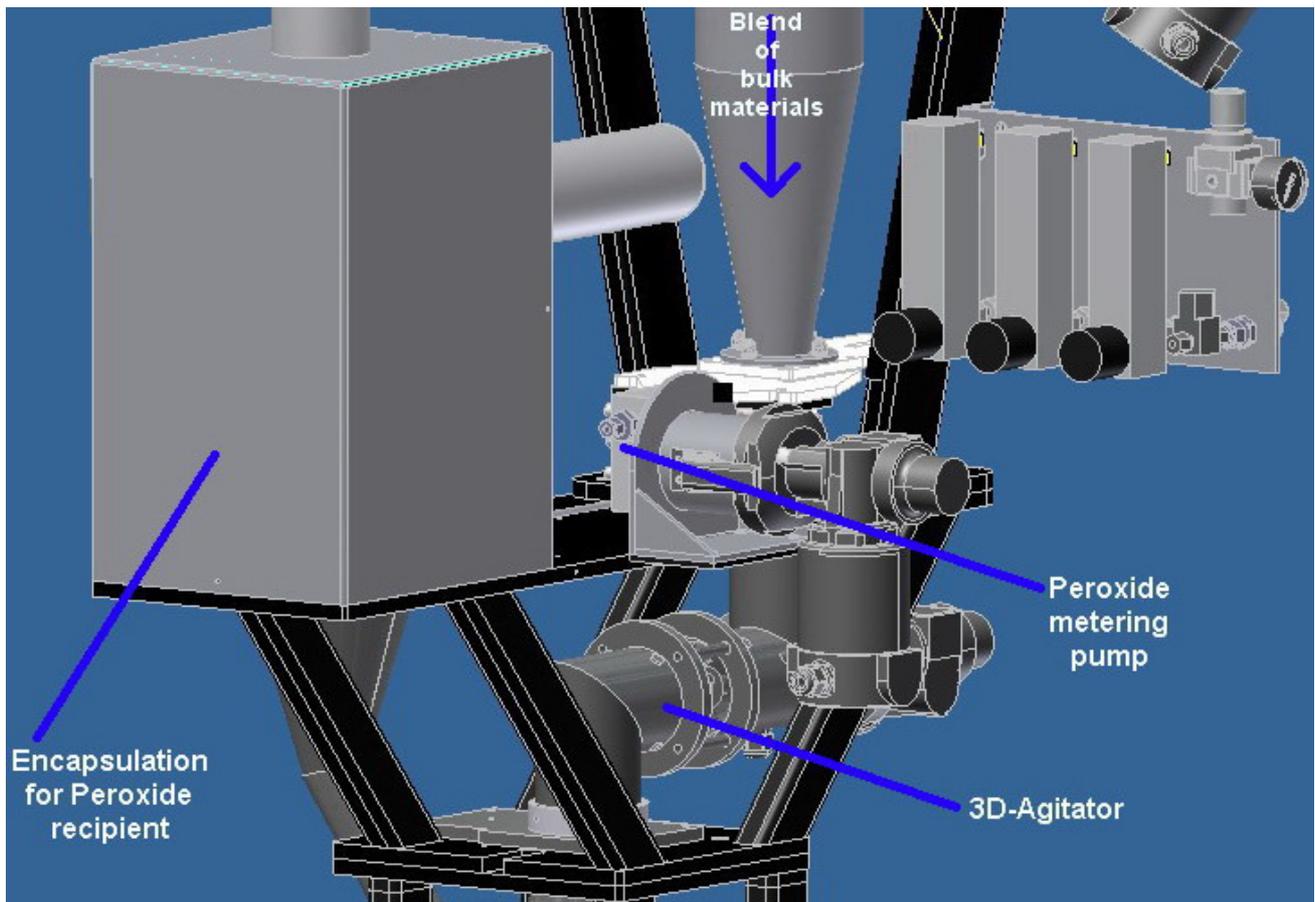
The PEX-A process (“Engel-Method”) generally brings the best results regarding consistency and uniformity of the cross-linking and allows a better control of the process.

PROCESS CONTROL a leading supplier of auxiliary equipment for the extrusion industry has enhanced the X-Series continuous gravimetric blenders for a loss in weight dosing of liquid Peroxides in PEX-A processes.

Compared to volumetric dosing the gravimetric liquid dosing of the X-Series blenders allow to handle the liquid peroxide in one common recipe (in % or parts) together with the bulk components used in the process. Furthermore it ensures the automatic and accurate adaptation to extruder output changes or when starting up or shutting down a line. The recipe will be in specification and a perfect product with the desired cross-link degree will be produced at anytime. The dosing rate for liquid can be down to 40 g/h.

Beside the typical features of the proven X-Series blender the additional dosing and homogenization element of liquid Peroxide conforms to the very special characteristics of this material:

- High precision gear pumps with special surface treatment for long-term resistance against aggressive mediums.
- 3D-Agitator for a perfect homogenization of bulk components and liquid.
- All parts which get into contact with the materials made from stainless steel.
- Safety encapsulation with thermal insulation for the Peroxide recipient.
- Peroxide recipient, safety encapsulation and all hoppers purged with inert gas.
- Water to gas heat exchanger to cool down the Peroxide recipient. Temperature indication, alert and emergency shut-off (Peroxide supply).
- Central ports for cooling water and inert gas. Flow control, indication, alert and emergency shut-off (Peroxide supply).
- Adsorbent filters for exhaust gas.
- High resolution load cells (1:1,000,000), DSP (Digital Signal Processor) weigh electronics and PWM (Pulse Width Modulation) driven motors for accurate dosing.



Blenders of this type are suitable as well for applications in the production of high voltage cables or other processes where accurate dosing of liquids is required.

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