Adapted from Ninesigma request number REQ5255009
http://www.ninesigma.com/#, accessed Oct. 2, 2014. It has been adapted for use in APS111.

RFP Title
Adhesive Label that Activates Prior to or During Application to a Surface

Background
Adhesive labels typically require liners to protect the adhesive prior to use. Removing the liner is an extra step for the user. In addition, liners create a waste stream once removed.

The client seeks an adhesive label that will be used on industrial equipment, e.g., warning labels or instructions for proper use. The label must remain dormant until use. Dormant labels must not have any tackiness in storage and during label processing. The user must be able to apply the label to the desired surface without the step of removing a liner.

Key Success Criteria
The successful technology will:

- Permit making a label without a removable liner
- Must produce a label that remains inactive during manufacturing under the following concurrent conditions:
  - Elevated temperatures up to 70°C
  - Pressure up to 100 psi (70g/mm^2)
- Produce labels with a shelf life prior to use of 24 months at ambient conditions (21°C, 50% RH).
- Upon activation, product adhesion with sufficient strength (measured by PSTC test method) shall adhere the label to the intended substrates including, but not limited to stainless steel; glass; polyvinyl chloride, ABS or polyethylene plastics; painted or powder coated steel.
  - Note: average user exerts up to 25 psi pressure during application
- Produce label with adhesive that becomes permanent within 24 hours after initial application
- Must produce labels that, once applied to a substrate, will withstand the following service conditions:
  - Temperature from -18 to +70°C
  - RH from 20% to 100%

Approaches not of interest

- Approaches which require additional hardware to cause activation