Eliminating Toluene from Ecolab™ Resin Jetted Process

Summary of issue or opportunity being addressed

Toluene is a toxic, high-risk and high-quantity solvent used in agarose bead manufacture. The EMA ICH classifies it as a "solvent to be limited" (Section 4.2*).

Ecolab's patented jetted process has eliminated toluene from its process.

Introduction to technology or solution

Key toluene hazard ratings are:

1) H361d Suspected of damaging the unborn child
2) H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled
3) H412 Harmful to aquatic life with long lasting effect.

Ecolab identified the opportunity to remove toluene from the Ecolab resin jetted process, aligning with Ecolab's theme of producing safer and more sustainable products.

Impact of solution

- Elimination of toluene transportation to Ecolab's site for all jetted agarose beads being manufactured
- Reduced risk of exposure to the public, the workforce and users of jetted beads, ensuring a safer overall process
- Eliminated disposal needs and associated environmental impacts
- Reduced toluene's contribution to Ecolab's jetted agarose beads

Considerations during implementation

This project builds on Ecolab's commitment to sustainability by phasing out high-risk substances.

The transition ensures compliance with regulatory guidelines while maintaining product quality.

*https://www.ema.europa.eu/en/documents/scientific-guideline/ich-q3c-r9-guideline-impurities-guideline-residual-solvents-step-5_en.pdf