



New Inert Development

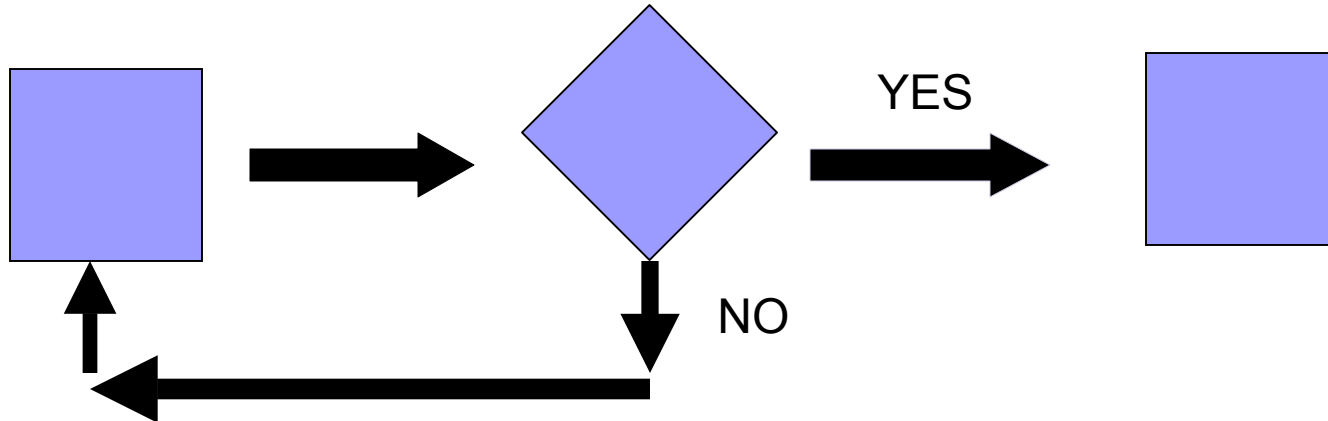
EPA/CPDA Symposium on Inert
Ingredients

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Presented by Tim Figley

Stepan Company

Phase Gate Approach



- Majority of companies practice some form of gated product development
- Typically 4-5 gates
 - Starting with eureka
 - Ending with happy customers
- Typical development time for surfactants 2-3 years
- Typical time for Inerts 4-5+ years
- Cost \$250,000 - \$2,500,000



Gate 1 – Eureka

- Even in a team one individual has the original idea
- Criteria for moving ideas forward
 - Technology: New or currently practiced
 - Economics: Capital and regulatory
 - Market need: Size and future
 - Intellectual Property (IP): Patent or trade secret
 - Regulatory Environment: Global and local
- If yes, write white paper

Gate 2 - So What Prove It

- Formally Assemble Team
 - R&D, product safety, legal, marketing
- Proof of Concept
 - Based on lab scale experiments
 - synthesis, formulation, greenhouse etc.
 - Determine intellectual property and regulatory requirements
 - Preliminary Product Safety review
 - engineering, toxicology
 - Data needed to gain customer support
 - Prepare for scale up
- Marketing group approval necessary
- If yes, strategy for market introduction

Gate 3 - We like it do you

- Team has grown
 - R&D, product safety, legal and marketing
 - Sales and supply chain
- First introductions to customers
 - Present data to customer's technical experts
 - Now customers have to begin the gate process (unless it was collaborative from the beginning).
 - Experimental sampling
- Pilot scale up work
- Begin assembling Regulatory Petition
 - Initiate toxicological testing
- If yes, begin commercialization

Gate 4 - Lots of hard work

■ Finalize all five points

- Customer approval - It really works and is sellable
 - Larger scale trials in the market place
- Cost - ROI is locked in
- Regulatory approval- TSCA and Inert Ingredient Assessment Branch
- IP- Patents granted and trade secret(s) in place
- Supply chain - capital installed, process set

■ Deadlines are critical- **Real Financial Commitments and Careers are on the line!**

Gate 5 - Happy Customer(s)

■ Fully commercial

- Inert supplier delivering on time
- Pesticide/Adjuvant company distributing finished product
- The farmer has an improved product in terms of environment, productivity and yield.
- Product Stewardship/Maintenance
- Start new project or finish the other 10 marketing is screaming for?