

MAA Aerosol 101

Formulating Considerations for Aerosol Products

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Think Before You Leap

Multiple Components

Multiple Effects

Dealing with Multiple Regulations

A Product that works!

Marketing

What kind of product is this going to be?

How do you want the product to come out
of a can?

Want it to be like product ABC but different!

Where is this product going to be sold?

What kind of label claims are there?

Regulatory

Paint

Consumer Products

Non-Regulated Products

Most Restrictive Limit

Health and Safety

VOC Considerations

Massed Based VOC or % VOC by Weight

Exempt Solvents (Acetone, Oxsol,
LVP Solvents)

Maximum Incremental Reactivity (MIR)

No Exempt Solvents – Choice of Solvents

Banned Solvents or Limited Use Solvents

2-BE (Canada) – Product Form
Dependent

Toluene – Banned in Europe

Phthalates – Proposed bans in
several countries and states

Proposition 65

Warning: This product contains a chemical known to the State of California to cause cancer, birth defects or reproductive harm

WHERE ARE YOU AT?

YOU HAVE NOT EVEN STARTED
FORMULATING BUT HAVE
NUMEROUS LIMITATIONS AND
RESTRICTIONS PLACED ON
YOU TO DEVELOP A PRODUCT

Formula Type

Solvent Based

Water-based

Sprayability

Product Type (Solvent or Water-based)

Propellant

Sprayhead

Valve and Valve Components

Viscosity and Surface Tension

Viscosity

(how thick or how thin)

Surface Tension

(Elastic like force in the surface of a liquid, tending to minimize the area of the surface, caused by intermolecular forces between surface molecules.)

Other Considerations

Container Type

Agitator

Flame Extension

Container Type

Steel

Aluminum

Plastic

Glass

Agitators

Do you even need an agitator ?

Steel or Glass?

Ball or Slug?

Paint Considerations

Resin System (Solvent or Water-base)

Propellant

Pigments

Solvents

Additives

Consumer Products Considerations

Product Type (Solvent or Water-based)

Propellant

Solvents

Additives

Cookbook Chemistry

Formula or Recipe

Test the product for properties

Adjust the formula

Remake the formula with adjustments

Stability Testing

Corrosion Testing

Hot Box Testing

Shelf Life Testing

ARE WE DONE YET?

Do you have a product that works?

Did the project come in on time?

Does it meet the customer's requirements?

Reformulation

The process in which the product that was put into the market needs to have a different set of parameters because of a change in market.

Go back to start!
Do not pass GO.
Do not collect \$200.

Reformulation

Changes in technology to packaging

Advances/Changes in raw materials

Cost Considerations

Regulatory Changes

Questions?