

Request for Proposal RFP_2019_0078: Reducing the Vapor Pressure of a Volatile Compound

RFP Title	Reducing the Vapor Pressure of a Volatile Compound
Due Date	07/30/2019
Opportunity	Licensing, contract research, or supplier agreement
Timeline	Phase 1 – Proposal evaluation by August 2019 Phase 2 – Proof of concept demonstration in 3-12 months Phase 3 – Commercial development in 6-12 months
Financials	Funding, commensurate with proposed activity, to be negotiated
RFP Description	NineSigma, on behalf of a global chemicals company , invites proposals for formulation technology or methods to temporarily sequester volatiles, to reduce the vapor pressure of a low-boiling solvent in a water and/or oil mixture, for a packaged goods application.

Background

NineSigma's client manufactures a chlorofluorocarbon solvent, that boils at room temperature, which they would like to use in multi-ingredient formulations that include water, lipids, surfactants, and other inert ingredients. NineSigma's client would like to formulate this solvent in a carrier (mixture) that minimizes premature evaporation during storage (inside a container/packaged goods) but preserves evaporation characteristics upon application to a surface. We encourage you to respond to this request if you have knowledge, methods, or technology which enables a solution.

Table of Chlorofluorocarbon Solvent Physical Properties.

Property	Value	Units
Vapor Pressure at 25 °C	4.1	PSIG (0.3 bar)
Boiling Point	19	°C
Surface Tension at 25 °C	12.7	Dyne/cm
Reactivity	Avoid strongly basic solutions	
Flammability	Non-flammable	
Molecular weight	130	g/mol

- Key Success Criteria**
- The successful technology will:
- Minimize premature solvent evaporation and pressure build-up during storage or shipping (in container/packaged goods) but preserve evaporative properties that occur upon application to a surface
 - Storage and shipping: temperatures range from 19 to 50 °C, at ambient pressure
 - Application temperatures range from 20 to 40 °C
 - Withstand high shear mixing to enable blending with other ingredients
 - Be compatible with other materials including, but not limited to: lipids, water, surfactants, hydrocarbons, amine/amides, and other inert compounds
 - Formulated pH ranges from 4 to 9
 - Use materials with a toxicity profile safe for human exposure

Area of Interest

Materials Science > Polymers
Chemistry-Organic > Organic Chemistry-General
Chemistry-Physical > Physical Chemistry-General > Physical Chemistry-All disciplines
Chemistry-Physical
Materials Science > Nanomaterials > Nanomaterials-All disciplines
Materials Science > Encapsulated Materials

Physics > Applied Physics > Physical Chemistry

Possible Approaches

Possible approaches might include, but are not limited to:

- Additives
- Encapsulation methods
- Novel carrier matrix geometries such as emulsions, suspensions, hydrocolloids, or gels
- Solvent recapture technology
- Innovative non-pressured packaging

Approaches not of Interest

The following approaches are not of interest:

- Pressurized packaging
- Zero-headspace, single-use packaging

Preferred Collaboration Types

Contract Research
Technology Licensing
Supply Agreement
Technology Acquisition
To Be Negotiated

Items to be Submitted

Your response should not contain any confidential information.

NineSigma's client will evaluate all responses and choose those of greatest interest for direct discussions that could lead to contractual engagement for proof of concept demonstration or other commercial arrangements with selected respondent, to develop or adapt promising technologies or approaches.

Your response should address the following:

- Description of proposed technology and working principle
- Availability of technical data including thermodynamic properties, toxicity profiles, chemical compatibility, and robustness against physical agitation
- Technical maturity of the approach (reduced to practice, prototype, ready to commercialize, ready to implement, commercialized)
- Pathway to commercial scale including timing, estimated budget, and capacity for manufacture
- Estimated unit cost of technology
- Position on intellectual property (patent granted, patent pending, trade secret), patent references (if available), and your assessment of freedom to practice
- Desired relationship with sponsor
- Team description and related experience

Appropriate responses to this Request

Responses from companies (small to large), universities, experts, entrepreneurs, or inventors are welcome. For example:

- You represent a **company or university** that has demonstrated a proof of concept.
- You represent a **company or university** that has reduced method to practice at lab scale.
- You represent a **company or university** that has demonstrated a method ready for implementation at commercial scale.
- You represent a **technology transfer agency** that represents an inventor or technology holder who can demonstrate an approach to address the request.
- You represent a **university research department** that has a bench-scale demonstration ready to adapt.

Award Amount

Attachments

No Files Selected

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Picture

