

We are working with a specialty materials company that currently provides **liquid products for surface treatment in industrial environments**. They are **urgently seeking an innovative solution (probably chemical) to improve the storage qualities** of these water-based suspensions of carefully selected mineral particulates.

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**Current Method of Application:-**

- Liquid product dries, with assisted heating, to leave a fine protective particulate surface layer, typically 100 - 300 micron thick, on vulnerable substrates.
- The main application route is by partial or total immersion of the substrate in the liquid for a period of a few seconds, followed by manipulation of the substrate to form uniform layer coverage.
- The deposition and drying rates of the surface treatment are influenced by the capillarity of the substrate, the rheology and composition of the liquid product and the ambient conditions.

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**Current Problem:-**

Aqueous product may deteriorate over time due to a number of reasons:-

- The properties of the liquid product (e.g. particulate volume fraction, yield stress, surface wetting and sedimentation characteristics) have to be carefully set at the manufacturing stage. The tolerances on these properties are such that the product performance under normal usage and storage conditions may remain unchanged for several months. However global application means that more robust technology is required.
- The desired structure and integrity of the protective layer is achieved by careful selection of rheology aids and wetting aids, but current solutions can be unacceptable:-
  - Clay-based rheological aids may suffer from colloidal instability caused in part by leaching of ions from particulates.
  - Organic based rheological aids may require high levels of accompanying biocides that could attract hazard labelling penalties and disposal charges.

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**Desired Solution:-**

**We are therefore urgently seeking a new technology to prevent the deterioration of the properties of the aqueous product in storage.**

Any solution must deliver consistent rheological properties after storage in a sealed container at 40°C for 12 –18 months.

It is envisaged that partial or total solutions will be provided by a more robust, probably synthetic (inorganic, organic or hybrid) rheology system.

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We are willing to explore any reasonable commercial arrangements, including licensing in of proprietary or innovative products, systems or technologies, strategic alliances or partnering arrangements and outright purchase. Please send preliminary information on any proposed opportunity – including a short description, technical and marketing advantages and initial suggestions on possible methods of co-operation – to Mrs Elaine Rhodes, Operations Manager.

Thank you!