



## Summary of NASA Test of Laurel Products

### Ultraflon® UF-8TA & MP 55 for

### Ice-Phobic Coatings

NASA tested a wide range of semi-permanent coatings that could be applied to the brackets of the Liquid Oxygen tanks on the space shuttle. Below is a brief summary of the experiment and results.

#### Experiment Goal:

“The goals of this experimental program were to optimize the effectiveness of an ice-phobic coating on the adhesion of ice to different surfaces on the shuttle, to evaluate the effect on ice adhesion of adding a carefully selected UVA to the coating, and to evaluate the consistency of coating performance and its durability. Phase 1 tests focused on determining an optimal coating by measuring the adhesion of ice to several mixes of Rain-X with different weight fractions of the PTFE powders MP-55 and UF-8TA.”

#### Phase 1 Result :

“Performance measures used by Ferrick et al. (2006) showed reduced ice adhesion and improved consistency of UF-8TA over MP-55 when mixed with Braycote. However, the UF-8TA–Rain-X variations tested in phase 1 were not significantly different from each other or from the controls, confirming chemical inertness to the solvents in Rain-X. Also, a PTFE mixture of MP-55 and UF-8TA with Rain-X produced an increase in ice adhesion compared to a coating with the same quantity of MP-55 and no UF-8TA. These results indicate that UF-8TA mixed with Rain-X does not provide an effective ice-phobic coating. Consistent with the findings of Ferrick et al. (2006), **the phase 1 tests verified that Rain-X mixed with MP- 55 is an outstanding coating to reduce ice adhesion** to Koropon-primed aluminum at cryogenic temperatures.”