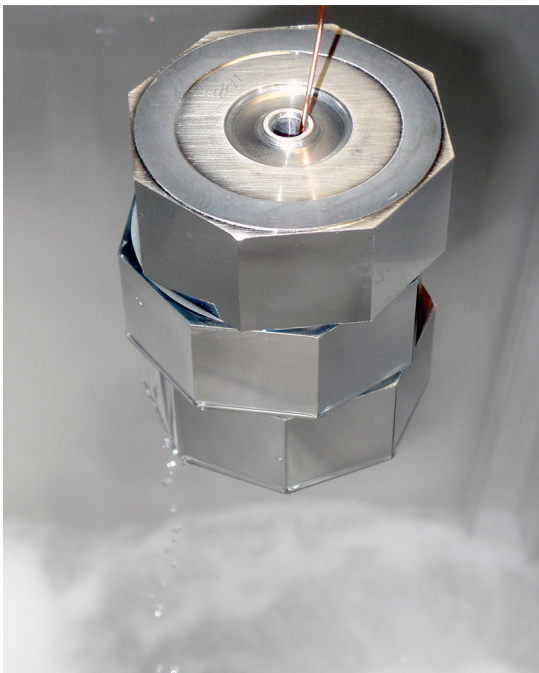


New Precision Fluids Tested by NASA

July 22, 2015

New Solvents Tested by NASA for Their Critical Cleaning Requirements

NASA, the U.S. space agency, has a unique emphasis on reliability. NASA products are extremely expensive, have long operational lives, work with almost infinite sensitivity and operate in the most harsh environment of all — outer space. A good example is the amazing “New Horizons” probe that has just arrived at the planet Pluto after a nine-year journey through the solar system. So it is reasonable that NASA is very cautious about introducing new technologies because problems, if any, may not become apparent for years.



With an eye on their future requirements, NASA tested a number of new solvent choices to compare their clean effectiveness in a vapor degreaser. Here a set of mirrors is cleaned in a vapor degreaser.

The agency has completed a test of new cleaning fluids to replace older cleaning solvents. The study¹ by Mark Mitchell of the Marshall Space Center and Nikki Lowery of Jacobs Technology compared alternatives to n-propyl bromide (nPB), a popular “benchmark” solvent (see a discussion of nPB in *Advances in Critical Cleaning*, May 27th).

The tests compared the effectiveness of three new alternatives, including DuPont/Chemours Vertrel® SDG specialty fluid. The tests were strictly controlled. The various test coupons were made from a steel alloy, magnesium or aluminum. The contamination was a mix of aircraft grease, a synthetic hydraulic fluid

About MicroCare

MicroCare Corp. is an industry-leading manufacturer of high-performance products used for critical cleaning, coating and lubrication. These products and tools improve quality, reduce operating costs and help protect the environment. Since 1983 MicroCare has helped clients improve their processes in industries as diverse as electronics assembly, telecommunications, aerospace and transportation, medical devices and other precision cleaning applications. MicroCare is constantly innovating new cleaning products and processes to help customers reduce costs and improve quality.

MICROCARE CORPORATION

595 John Downey Drive
New Britain, CT 06051 USA
Tel: +1 860 827 0626
Email: Support@MicroCare.com

MICROCARE AMÉRICA LATINA

El Paso, TX USA
Tel: +52 (1) 656 670 1647
Email: AgustinM@MicroCare.com

MICROCARE EUROPE

Havendoklaan 13d
Cargovil, B-1804 Belgium
Tel: +32 2 251 9505
Email: EuroSales@MicroCare.com

MICROCARE ASIA

#03-01 Citilink Warehouse
102E, Pasir Panjang Road
Singapore 118529
Tel: +(65) 6271 0182
Email: Sales@microcare.sg

¹ “Laboratory Evaluation of Drop-in Solvent Alternatives to n-Propyl Bromide for Vapor Degreasing”, MIPR #MIPR2AO80BW013. Contact MicroCare for a copy of the full report.

and a small quantity of carbon black. The contaminant was applied to the test coupons, baked for two hours at 55°C and then aged for seven days. To clean, the coupons were immersed in boiling solvent for 30 minutes; observed and weighed.

The test results were quite good. As a benchmark, nPB removed 96% of the contamination. All of the others did “in the range of or better than” nPB. When tested on a roughened coupon instead of a smooth polished metal surface, all four products surpassed nPB.



While the authors cautioned that their results are not to be considered any sort of a commercial endorsement, they concluded the DuPont/Chemours Vertrel® SDG fluid “cleaned the most consistently.” Additionally, “all but Vertrel SDG showed reduced cleaning effectiveness on aged contamination.” The authors cautioned that additional operational, commercial and toxicity factors should be considered before finalizing a solvent selection.

For a copy of the complete report, contact MicroCare.

Products Mentioned in this Bulletin:



MicroCare provides many different cleaning fluids for vapor degreasing, including formulations like the popular DuPont/Chemours Vertrel® SDG. This fluid is a very strong cleaner engineered for vapor degreasing. It is nonflammable, ozone-safe and easy to ship and store. Contact MicroCare for help with your precision cleaning issues.