



FOR IMMEDIATE RELEASE

## **RASIRC Releases White Paper on Minimizing BRUTE<sup>®</sup> Peroxide Decomposition**

### *Hydrogen Peroxide Decomposition in Gas Phase*

San Diego, Calif – April 23, 2019 – Dynamic gas generation leader, [RASIRC](#), has released a white paper on the mechanisms of gas phase peroxide decomposition. Controlled delivery of hydrogen peroxide gas has traditionally not been possible, and little is known about decomposition of the molecule in gas phase. RASIRC developed a proprietary hydrogen peroxide formulation (Brute Peroxide) as an ALD/ASD oxidant source and has tested its chemical properties for more than five years. The company recently released a white paper reporting its findings.

“Our testing, while still in development, has provided a better understanding of hydrogen peroxide in gas phase and what causes accelerated decomposition,” said Jeffrey Spiegelman, RASIRC President and Founder. “Releasing this data allows researchers and customers to advance their understand of H<sub>2</sub>O<sub>2</sub> gas delivery and maximize the benefits possible with hydrogen peroxide gas.”

The semiconductor industry is regularly faced with manufacturing challenges and limitations. In temperature ALD applications, traditional oxidants like ozone and O<sub>2</sub> plasma can be overly aggressive and damage the surface. BRUTE Peroxide, however, shows good reactivity (GPC), penetrates high aspect and porous structures, and deposits high quality oxides without adverse effects. Delivery conditions outlined in the released white paper are essential for best results.

“Our data shows that actions such as utilizing higher pressures, lower temperatures, passivated material surfaces and avoiding iron corrosion all lead to lower rates of H<sub>2</sub>O<sub>2</sub> decomposition,” explained Spiegelman. “Additionally, we recommend our clients shorten tubing pathways, avoid pipe bends and implement RASIRC proprietary coatings on metal.”

The main takeaway from the white paper is that H<sub>2</sub>O<sub>2</sub> decomposition occurs when molecules collide with reactive metal surfaces. Therefore, limiting the likelihood of collision leads to reduced probability of decomposition. The report features test data from a variety of conditions that minimize collision and decomposition. This data should also be applicable to a variety of reactive precursors.

**Request the full report “[Decomposition of Hydrogen Peroxide in the Gas Phase](#)”**

### **About BRUTE Peroxide:**

BRUTE® Peroxide is a novel oxidant that improves nucleation density at film interfaces when compared to other oxidants. Surface functionalization is more dense and initiation is faster using anhydrous hydrogen peroxide gas compared with alternatives. This can allow for better selectivity and less damage to metal surfaces in ASD processes.

**For more detail** on BRUTE Peroxide, visit <http://www.rasirc.com/product-brute-peroxide.html>.

### **About RASIRC**

RASIRC specializes in products that generate and deliver gas to fabrication processes. Each unit is a dynamic gas plant in a box—converting common liquid chemistries into safe and reliable gas flow for most processes. First to generate ultra-high purity steam from de-ionized water, RASIRC technology can now also deliver hydrogen peroxide and hydrazine gases in controlled, repeatable concentrations. RASIRC gas delivery systems, humidifiers, closed loop humidification systems, and steam generators are critical for many applications in semiconductor, photovoltaic, pharmaceutical, medical, biological, fuel cell, and power industries. Call +1 (858) 259-1220, email [info@rasirc.com](mailto:info@rasirc.com) or visit <http://www.rasirc.com>.

#####

### **Contacts:**

RASIRC  
Jeffrey Spiegelman  
Phone: 858-259-1220  
E-mail: [jeff@rasirc.com](mailto:jeff@rasirc.com)