FIRE-RESISTANT ACTIVATED CARBON

Sandia National Laboratories

intellectual property MANAGEMENT, LICENSING, & ALLIANCES

TECHNOLOGY READINESS LEVEL: 4

KEY ELEMENTS OF THE TECHNOLOGY HAVE BEEN PROVEN TO WORK AS EXPECTED IN THE LABORATORY ENVIRONMENT.

US PATENT PENDING

TECHNOLOGY SUMMARY

Sandia National Laboratories has developed an economical and efficient activated carbon adsorbent for the trapping of noble gases including Argon, Krypton, Xenon and radioactive ^{85}Kr. Unlike currently used adsorbents, this superior material is fire-resistant with spontaneous ignition temperatures (SIT) of up to 860°C and favorable sorption capacity.

This technology is well suited for a variety of industries including the chemical and petrochemical industries, where such materials are used to control emissions of solvents and other volatile organic compounds from process streams, off-gases and tank venting. Similar applications exist in the environmental engineering, nuclear, military and extraction arenas.

Performance Comparison
SNL Activated Carbon Adsorbent vs. Commercially Carbon

Material	Spontaneous Ignition Temperature (°C)
SNL Activated Carbon	540 ± 5 to 860 ± 10
Commercially Available Carbon	300 ± 10

With drastic increases in spontaneous ignition temperatures SNL Activated Carbon significantly reduces fire risks.

POTENTIAL APPLICATIONS

- Mining
- Nuclear Power & Fuel Processing
- Waste Management
- Water Purification
- Environmental Clean-Up
- Medical & Chemical Industries

TECHNOLOGICAL BENEFITS

- Significant Reduction in Risk of Fire Hazards
- Economical & Efficient
- Reduces Risk Associated with Nuclear Fuel Reprocessing
- Broadly Applicable to Numerous Industries

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 11471

or visit

https://ip.sandia.gov

NNSA National Nuclear Security Administration

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U.S. DEPARTMENT OF ENERGY