

Critical Minerals for a More Resilient World

Albemarle is a global leader in transforming critical resources into essential ingredients for mobility, energy, connectivity and health. Albemarle provides crucial solutions that enable modern living and are indispensable for advanced manufacturing, national defense and energy security.

Bromine (Br)

Bromine is essential in various aspects of daily life. It plays a significant role in the safety of our homes and appliances and in the energy intensity of industrial water treatment. Bromine is a common element in flame retardants, and has a wide range of applications, including improving the safety of raw meat and poultry processing, the synthesis of pharmaceuticals and other roles in industries and products that are part of our everyday lives.

APPLICATIONS	ALBEMARLE SOLUTIONS	VALUE OF THE ELEMENT
AGRICULTURE & FOOD		
Disinfectants	AviBrom®, BoviBrom®, PorciBrom®, SWG Biocide®	Bromine-based disinfectants like AviBrom®, BoviBrom® and PorciBrom® are used as antimicrobials for pathogen reduction in poultry, beef and pork processing. SWG Biocide® is used to disinfect tanks, pumps, piping and tubing associated with water lines in animal, livestock and poultry housing facilities.
AUTOMOTIVE & EV		
Automotive Wire and Cable, Connectors and Enclosures	SAYTEX® flame retardants	Flame retardants are used in automotive wires and cables, connectors and enclosures to reduce the risk of fire, enhancing passenger safety.
Plastics	Hydrogen bromide	Hydrogen bromide is used to regenerate catalysts used in the production of some plastics.
Precision Cleaning	ABZOL®	High-performance cleaning solvents are designed for vapor degreasing, cold and ultrasonic cleaning for sensitive materials such as complex circuit boards, optical equipment, aerospace and automotive parts.
Tires (specialties grade)	Elemental bromine	Elemental bromine is critical to the rubber and plastics industries. It is used in tire manufacturing to enhance durability and performance.
AEROSPACE & AVIATION		
Commercial Aviation and Aviation Materials	SAYTEX® flame retardants	Flame retardants are used in aircraft materials to meet stringent fire safety standards, helping ensure passenger safety.
Precision Cleaning	ABZOL®	High-performance cleaning solvents are designed for vapor degreasing, cold and ultrasonic cleaning for sensitive materials such as complex circuit boards, optical equipment, aerospace and automotive parts.
Satellites	SAYTEX® flame retardants	Flame retardants are used in the fiber optic cables of satellite systems to prevent fires.
BUILDING & CONSTRUCTION		
Insulation, Wire and Cable	SAYTEX® flame retardants	Flame retardants are used in building materials like insulation and electrical cables to reduce fire hazards and improve property safety.
Water Treatment	SANIBROM®, STABROM®, MAXXIS®	Bromine-based biocides are used in cooling towers and water treatment systems to control microbial growth and help ensure clean water.
CONVENTIONAL ENERGY		
Oil and Gas Drilling	WELLBROM®	Bromine-based materials are used in drilling fluids to stabilize boreholes and prevent blowouts, helping ensure safe and efficient drilling operations.
ELECTRICAL & ELECTRONICS		
Appliances	SAYTEX® flame retardants	Flame retardants are used in electronic devices to prevent fires caused by overheating or electrical faults, helping ensure user safety.
Semiconductor Manufacturing	Hydrogen bromide, ABZOL®	High-purity anhydrous hydrogen bromide is used for its excellent etching performance and in the production of new-generation chips in the microelectronics industry.
Smartphones, Tablets, Laptops and TVs	SAYTEX® flame retardants, ABZOL®	Flame retardants are used in electronic devices to prevent fires caused by overheating or electrical faults, helping ensure user safety.

ENVIRONMENTAL TECHNOLOGY		
Mercury Control	<i>Sorbents & additives</i>	Mercury control additives are used to enhance the oxidation of elemental mercury and sorbents to remove mercury vapor that can be present in gas streams.
GRID STORAGE		
Energy / Grid Storage Solutions, Power Grid, Solar Panels	<i>SAYTEX® flame retardants</i>	Flame retardants help protect modern day power supply sources from the hazards of smoke and fire. They are used to help prevent or slow the spread of fire in wires, cables, connectors and enclosures in power grid systems and solar panels.
INDUSTRIAL PROCESSES		
Equipment and Machinery	<i>SAYTEX® flame retardants</i>	Flame retardants are used in industrial equipment and machinery to reduce fire risks and enhance safety.
Industrial and Commercial Water Treatment	<i>SANIBROM®, STABROM®, MAXXIS®</i>	Bromine-based biocides are used in cooling towers to prevent microbial growth and maintain efficient operations.
PHARMACEUTICAL & NUTRITION		
Pharmaceuticals and Vitamins	<i>TFS reagents</i>	Bromine and bromine-containing materials are used in the synthesis of multiple pharmaceuticals drugs. Bromine compounds are used in trace amounts in some vitamin formulations for their potential health benefits.

Learn more at albemarle.com

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