

BROMINE REDUCES MERCURY EMISSIONS

Today more than 40% of the world's electricity comes from coal-fired power plants¹. When coal is combusted mercury is released into the atmosphere. With bromine, these plants can reduce mercury emissions up to 90%.

WHY IT MATTERS

The World Health Organization (WHO) has cited mercury as one of its top 10 chemicals of major public health concern².

That is why the United Nations set strict global controls on mercury emissions as part of the Minamata Convention in 2013.

Bromine's properties enable power plants to capture and safely dispose of up to 90% of the mercury released when burning coal.



HOW IT WORKS

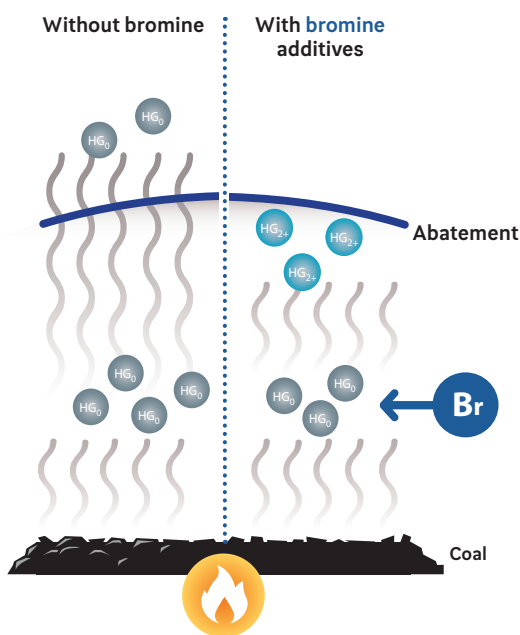
When coal is burnt, mercury can be released in three forms:

- Oxidized (Hg_{2+})
- Particulate (Hg_p)
- Elemental (Hg_0)

Elemental mercury (Hg_0) is difficult to capture because it is gaseous at combustion temperature.

Bromine solves this problem by converting the elemental mercury (Hg_0) to oxidized mercury (Hg_{2+}), which power plants can capture much more easily.

Bromine solutions can be conveniently added to coal before combustion begins, or injected into the flue gas stream afterwards. Once captured, mercury is retrieved and carefully handled.



WHAT IS BROMINE?



Bromine is part of the 28 elements that are essential to human life³. Its properties enable tissue development in all animals, including humans.

Bromine is a reddish brown liquid, but it is never found naturally in this form. Instead, bromine is derived from a variety of compounds found in soils, salts, air and sea water⁴.

ABOUT BSEF

We are the international bromine production organisation. Since 1997 we have been working to foster knowledge on the uses and benefits of bromine-based solutions.

We strongly believe in science and innovation. Through investments in research and development BSEF members create robust bromine-based technologies meeting the needs of society.

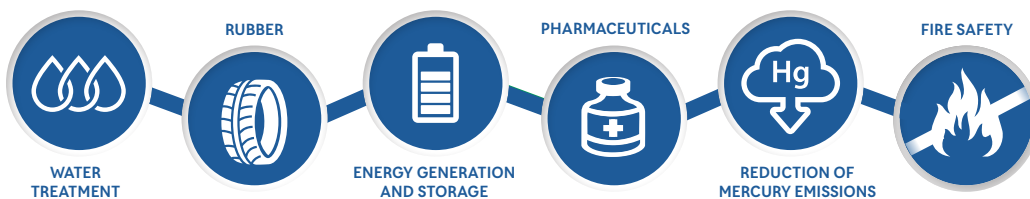
OFFICES

4 Avenue Edmond Van Nieuwenhuyse
1160 Brussels - Belgium

T: +32 2 733 93 70
F: +32 2 735 60 63
mail@bsef.com

Twitter: BromineInfo
Facebook: BSEF
LinkedIn: BSEF

THE MANY APPLICATIONS OF BROMINE



1. International Energy Agency
2. Minamata Mercury Convention
3. Billy G. Hudson, et al. Bromine is an essential trace element for assembly of collagen IV scaffolds in tissue development and architecture. Cell, 2014; vol. 157
4. Gordon W. Gribble, The diversity of naturally occurring organobromine compounds, Chemical Society Reviews, 1999