

Lextran Contribution to Mercury Emission Control

The most recent conference on Mercury pollution, which took place in St. Petersburg, (Russia) was the first time Lextran has been exposed to the tremendous efforts invested by the international scientific and business community in a coordinated effort of minimizing and, where possible, eliminating anthropogenic Mercury releases to the surroundings. This work should be only welcomed and we believe Lextran solution can contribute to this admirable effort.

Non-nuclear fossil fuel-burning power generation and some other industrial installations (waste incinerators, steel and aluminum mills, petrochemical plants etc.) are a major source of heavy metal emissions to the atmosphere. Fossil fuel combustion is presently the principal source of Hg, Cd, Pb and As to the atmosphere on a global scale with certain elements such as Hg, contributing to nearly 60% of its global anthropogenic atmospheric releases. The main threats to human health from heavy metals are associated with exposure to mercury, lead, cadmium, and arsenic. Exposure to those elements was proved to cause kidney, skeletal, neurological and psychological damage. Severity ranges from reversible upon cease of exposure to lasting, carcinogenic effects and lethal outcomes.

Mercury can harm children's developing brains, including effects on memory, attention, language, and fine motor and visual spatial skills. Mercury and many of the other toxic pollutants also damage the environment and pollute lakes, streams, and fish. Widespread dispersion and deposition on land and in surface waters provides a relatively direct pathway for eventual accumulation of methyl-mercury (MeHg) in the ecosystem. Bioaccumulation of methyl-mercury in the food chain and ingestion lead to potentially adverse neurological and developmental health effects.

Major Mercury abatement methods include either mercury targeted or as a byproduct of technology. The primary purpose.

The conventional "Halogen Addition + Wet/Dry FGD scrubbers" technology not only provides just a partial solution for the high concentrations of mercury in the flue gases, but might also pose an environmental threat from the byproducts which may contain high volumes of mercury and other heavy metals. As occurred in many "contaminated dry-walls" cases the hazardous materials do not stay at

the landfills or near the pollution centers but also find their way to our homes, schools and offices. Furthermore there is not fully explained effect of mercury re-emission from the WFGD systems.

Selecting technology that includes lime-FGD can introduce a regulatory problem. Concurrently with the hazardous air pollutants regulations, governments are also tightening surface water discharge trace metals' and salts' limits. Most lime-FGDs discharge wastewaters that are either slurry of water, dissolved solids, and/or suspended solids laden with heavy metals and salts. In case when the activated carbon is in use the mercury moves from one "pile" of solids (coal) to another pile of solids (mercury contaminated AC) which need to be landfilled and even then the leaching problems have not been answered fully.

Lextran innovative mercury removal for Industry and Power Plants

Lextran Ltd. has developed a very simple and cost effective technology to remove mercury and other heavy metals from combustion flue gases. Lextran offers a highly amenable solution that involves no byproducts and is very effective and technologically reliable. Our innovative de-Hg process demonstrates unprecedented rates (98%) of mercury removal. With virtually no traces of mercury in the flue gases, any plant can enjoy the good of both worlds: low operational cost, simple operation that involves no toxic byproducts, and no mercury pollution.

A 500MW unit, producing 2.5 *mll* m³ of flue gases and emitting ~20 µg of mercury per hour can enjoy non – stop abatement for over four years (II). The volume of reagent provided with the tower ensures saving on down time, expenses on maintenance, cleaning or regeneration.

The uniqueness of the process is not only in the extraordinary rates of abatement, but also in the fact that Lextran provides totally closed-cycle operation. It produces neither liquid waste, thus eliminating the need in water treatment facilities nor solid waste or byproducts effectively crossing out the disposal and treatment expenses from the capital and operational balance.

In Lextran we believe that the very purpose of the scientific development in the field of air pollution control is to offer an affordable solution to anyone anywhere. People should not pay with their health and lives for the quality of living, basic needs and jobs availability. Many developing countries can't afford the sophisticated and the costly technologies available on the market. Just as the penicillin has changed the medical reality for all so the air pollution control technologies should be efficient and affordable anywhere.

The fossil fuels are creating more developed future for our children but on the other hand instead of making it brighter they are virtually making it gloomier. Lextran is committed to creating truly brighter future to the next generations.

As a part of the global effort led by the UNEP, Lextran could, should and will be honored to contribute in generating new ideas, sharing new technological advancements and suggest new directions for further development of mercury abatement technologies and solutions.

**UNEP GLOBAL MERCURY PARTNERSHIP
REGISTRATION FORM**

PARTNERSHIP AREA

Please check partnership areas that your organization intends to contribute to:

- ☐ artisanal and small scale gold mining
- ☐ mercury cell chlor alkali production
- ☐ mercury air transport and fate research
- ☐ mercury in products
- ☒ mercury releases from coal combustion
- ☐ mercury waste management
- ☐ mercury supply and storage

Please indicate in your support letter how your organization intends to contribute to each of the indicated partnership areas.

ORGANIZATION NAME

Lextran Ltd.

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TYPE OF ORGANIZATION

- ☐ Government
- ☐ Regional economic integration organization
- ☐ Non-government Organization
- ☒ Industry
- ☐ Scientific community
- ☐ Other, please specify:

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