



CONTACT: ipm@innovatecalgary.com • (403) 284-6400

Bitumen Pellets

Tech ID# 729.08

Background

The transport of bitumen is typically conducted by truck, rail car, or pipeline, and the bitumen is usually mixed with diluent to make it liquid. This process is inefficient, costly, and carries health, safety and environmental risks. There is an ongoing need to provide safe and efficient transport of heavy oil and bitumen to upgraders, refineries, and petrochemical plants. Researchers at the University of Calgary have developed a method to pelletize heavy oil and bitumen at high speed to generate pellets of variable size that can be functionalized to yield a value-added heavy oil or bitumen product. The produced pellets have a relatively thin semi-solid or solid shell, and an unchanged heavy oil or bitumen core. The pellets can be designed to be buoyant and safe if they are spilled into the environment by incorporating agents within the pellets such as gas bubbles, catalysts, and solvents. After processing, pellets can then be transported in containers by truck, rail car, or ship to markets with significantly lower risks than that of liquid transport. If spilled, the pellets can simply be safely collected and removed. The outer coating of the pellets is relatively unreactive, and so its capability to harm the environment is much lower than that of a liquid heavy oil or bitumen spill.

Areas of Application

- Bitumen transport
- Bitumen storage

Competitive Advantages

- Lower cost compared to traditional ways of transporting bitumen
- Lower cost storage options
- Safe for the environment
- Eliminates need for diluent and pipelines
- Can be tailored for individual consumer needs
- Reduces environmental risk and liability
- Uses existing infrastructure for transport

Intellectual Property Status

- Patent pending

