

Co-Current Flow CO2 Capture Gas-Liquid

Contactor

Introduction

It is designed for reducing CAPEX for CO₂ capture by 30-35%. It eliminates need for civil infrastructure & foundation built up, reduces the space requirement & can integrate with On-Site available waste energy streams.

Designed with focus for: 1. Enhance Mass transfer; 2. High eff. CO₂ absorption, 3. Enhance CO₂ Loading

It is a novel (horizontal) reactor design for Gas-Liquid Interaction. Inspired from Plug-Flow reactor model, it has 2 input streams of Flue Gas & Absorbent entering & flowing together in same direction (co-current flow) into the reactor giving a longer space time for Gas-Liquid Interaction. This increases efficiency of CO₂ Absorption. The no-restriction flow pattern also reduces significant energy duty, since the flue-gas nor the absorbent need extra pumping and never lose their self-free flow velocity & energy. Hence, the system can be installed in-line in the process, significant reduction in infrastructure cost, and making it modular & tunable to adjust to various types of sources.

It may be the preferred choice among post-combustion technologies, particularly because of its low energy consumption, plug & play feasibility & easy volume scalability for future expansions. It can reduce capital costs by 30%, lower regeneration energy requirements by 30% & capture 25% more CO₂.

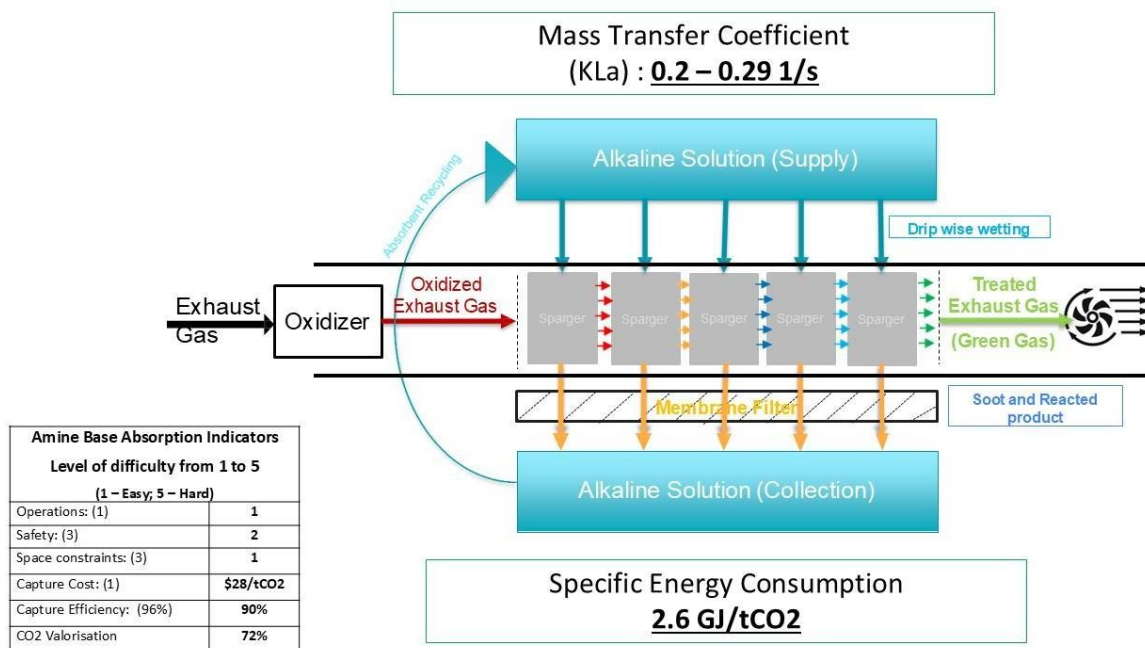


Figure 1 Schematic Diagram