

**BUCHEN<sup>®</sup>**

WORKING FOR THE FUTURE

Safety guaranteed, even in heavy winds  
and bad weather



> BUCHEN-ICS GmbH

All-weather reactor loading with the  
Dense Phase Conveying System

[buchen-ics.com](http://buchen-ics.com)

# Any weather, any catalyst, any time

When a crane cannot be used for loading of reactors and vessels due to safety or weather reasons, our Dense Phase Conveying System facilitates the continuous loading with catalyst or other granular bulk material, without damaging the material.

## Whatever the weather

Catalyst is conventionally transported using a crane, which lifts the material in big bags or flow bins to the relevant vessel inlet. A large area must be blocked off as a safety zone below the suspended loads. In spite of this safety zone, work has to be stopped during heavy winds and rain. This can all be avoided by using the Dense Phase Conveying System. With weather protection above the two preloading containers at the bottom and a filling hopper at the reactor/ vessel inlet, as well as hose lines, we ensure dry material transport.

## Operational anywhere

The Dense Phase Conveying System can be operated with all reactors and vessels.

We can fill your CCR, HC, Claus and styrene reactors during rain and storms. Our system can also be used for molecular sieve vessels, HDS reactors and ethylene/propylene hydrogenation system vessels.

The lack of space in a PSA unit, where there may be up to six vessels next to each other, poses no problem anymore either.

Besides applications in the (petro)chemical industry, we can also offer activated carbon replacement in filter installations, e. g. on printing company roofs

## > Your benefits with the Dense Phase Conveying System

- No crane use during loading
- No downtime during high winds or rain
- Vertical conveyance up to 90 metres, depending on the grain size, shape and weight of the catalyst to be loaded
- Switchover from electronic to manual control via the compressed air in emergencies
- Material conveyance with nitrogen instead of compressed air is possible where necessary
- Dust particle extraction during loading
- Flexible transport in 20' containers plus simple, fast on-site installation



The material is transported from the big bag to the preloading container at the ground level with a forklift truck



Continuous monitoring of the material flow from the Dense Phase Conveyor upwards to the specially designed filling hopper



The Dense Phase Conveying System can be used almost anywhere. Talk to us about your requirements. We will develop the right and safe solution for you



### How it works

The Dense Phase Conveyor consists of two preloading containers at the ground level fixed into a frame. At 1.28 m<sup>3</sup>, the preloading containers are the same size as common big bag sizes. A forklift truck is used to transport big bags filled with bulk material to the filling flap.

From the first preloading container the material is transported to a hose line using compressed air. In the meantime the second adjacent preloading container is filled. This ensures continuous conveyance without interruption; the entire cross section of the line is filled.

Instead of a slider, which would cut through the material flow like a knife, a rubber sleeve that does not damage the

material is incorporated between the two containers. Controlled by the pressure, it contracts and opens again.

The material is transported evenly from the hose line upwards through a riser. The material is collected at the top of the vessel/reactor in a specially designed filling hopper. Afterwards every kind of loading method is possible, e. g. sock loading or dense loading.

Dust particles are directly eliminated during loading by means of an additional hose connected between the filling hopper and an extractor at the ground level.

Compressed air or nitrogen is needed to transport the material upwards, as well as a 230 volt/16 amp connection for the electronic control system

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BUCHEN is part of the REMONDIS group, one of the world's largest recycling, service and water companies. The company group has branches and associated businesses in more than 30 countries across Europe, Africa, Asia and Australia. With over 32,000 employees, the group serves around 30 million people as well as many thousands of companies. The highest levels of quality. Working for the future.

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