

Conveying technologies comparison chart

Conveying method	Pros	Cons	Suitability	CAPEX	ESG rating
Pneumatic Lean/Dilute Phase 	<ul style="list-style-type: none"> » Flexible option for long and complex routes » Accommodates multiple inlets and outlets » Small footprint compared to Dense Phase 	<ul style="list-style-type: none"> » High velocity causes excess product degradation » Very high energy OPEX » Highest levels of CO₂ pollution due to energy consumption » Exposes materials to high volumes of air » Unworkable for the fines 		\$\$\$\$	○ ○ ○ ○ ○
Pneumatic Dense Phase 	<ul style="list-style-type: none"> » Gentle transfer » Moves materials over long, complex routes 	<ul style="list-style-type: none"> » Very high CAPEX, OPEX and energy consumption » Highest levels of CO₂ pollution due to energy consumption » Requires larger footprint » Extremely difficult to clear blockages or failures » Complex to commission and install correctly » Fluidised fine powders can cause blockages within the dust reclaim 		\$\$\$\$\$	○ ○ ○ ○ ○
Bucket Elevator 	<ul style="list-style-type: none"> » High availability in the correct applications » Gentle transfer » Suitable for long-distance elevation 	<ul style="list-style-type: none"> » Better suited to larger particles » Lower availability and higher equipment breakdown rates experienced with powders » High levels of spillage and material residue tend to ingress into the chain/belt mechanism » Difficult to bring back online after a breakdown » Difficult to seal from atmospheric exposure 		\$\$\$\$	● ● ● ● ○
Tubular Drag Conveying Chain 	<ul style="list-style-type: none"> » High availability in the correct applications » Gentle transfer » Suitable for long complex routes » Sealed from atmospheric exposure » Can be purged with inert gases 	<ul style="list-style-type: none"> » High volume throughputs require very large pipe diameter » High safety risk and difficulty when clearing blockages » Contamination due to the chain-on-chain friction 		\$\$\$\$	● ● ● ● ○
Tubular Drag Conveying Cable 	<ul style="list-style-type: none"> » Will not degrade the crystalline structure » Sealed from atmospheric exposure » Can be purged with inert gases » Total batch transfers with no product loss » Manages complex routes » Quick maintenance turnaround » Very limited product exposure » Minimal number of moving parts » Small structural footprint » Extremely low ESG impact of CO₂ pollution 	<ul style="list-style-type: none"> » Suitable for low to medium throughputs only » Lower availability for high throughput applications » Polymer-coated conveying cable required to reduce ferrous contact with LiOH.H₂O 		\$\$\$	● ● ● ● ○
Aero-mechanical Conveying 	<ul style="list-style-type: none"> » Will not degrade the crystalline structure » Very high throughputs » Can be purged with inert gases » Sealed from atmospheric exposure » Total batch transfers » Minimal spillage or product waste » Quick maintenance turnaround » Very limited product exposure » Minimal number of moving parts » Small structural footprint » Extremely low environmental impact, lowest level of CO₂ pollution 	<ul style="list-style-type: none"> » Length limitations may require multiple conveyors for long or complex routes » Not suited to running dry for extended periods of time » Not suited to running with very low volumes of material within the conveyor 		\$\$\$	● ● ● ● ●