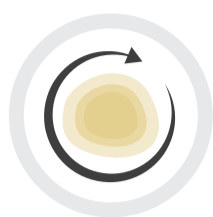


TYPES OF AGGLOMERATION

An overview on the many types of non-pressure and pressure agglomeration

AGGLOMERATION:

NON-PRESSURE

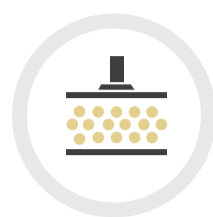


AKA: TUMBLE GROWTH | AGITATION

HOW IT WORKS

Material is tumbled in the presence of binder, causing fines to become tacky and pick up additional fines, growing the pellet in a process called coalescence.

PRESSURE



AKA: ROLL COMPACTION

HOW IT WORKS

Under extreme pressure, some materials will adhere to themselves and bind together.

NON-PRESSURE

PELLETIZING

PIN MIXER
PUG MILL
DISC PELLETIZER
ROTARY DRUM
COMBINATION

END PRODUCT



The process of using a binder in combination with a rolling action in order to encourage fines to collect and densify by coalescence.

MICRO-PELLETIZING

PIN MIXER
PUG MILL

END PRODUCT



A process focused on de-dusting or producing small, micro-pellets.

CONDITIONING

PIN MIXER
PUG MILL
ROTARY DRUM

END PRODUCT



A process focused on preparing a material for use as a feedstock or in an application. A dry solid and liquid are homogeneously mixed.

GRANULATION

ROTARY DRUM
PIPE REACTOR

END PRODUCT



Same as pelletizing, but usually refers to applications in the fertilizer industry, though not always. A chemical reaction may or may not be employed.

PRESSURE

COMPACTION GRANULATION

COMPACTOR

END PRODUCT



Uses mechanical force to press material fines into a cohesive unit. Considered a dry process; a binder is typically not used, but can be helpful.

BRIQUETTING

BRIQUETTER

END PRODUCT



Also a dry process that relies on extreme pressure to agglomerate material fines into a large, pillow-shaped briquette. Reserved for larger agglomerates.

NON-PRESSURE VS. PRESSURE

Pressure and non-pressure agglomeration techniques each offer their own unique advantages and disadvantages. Two of the most commonly compared processes are disc pelletizing and compaction granulation. Here's how they stack up:

DISC PELLETIZING

COMPACTION GRANULATION

\$\$\$ \$ \$

Capital Costs

\$\$\$ \$ \$

\$\$\$ \$ \$

Operating Costs

\$\$\$ \$ \$

Rounded, Smooth Pellets

Product Produced

Coarse Granules

+ + + + +

Amount of Dust & Attrition

+ + + + +

• • • • •

Breakdown Time

• • • • •

Typically Yes

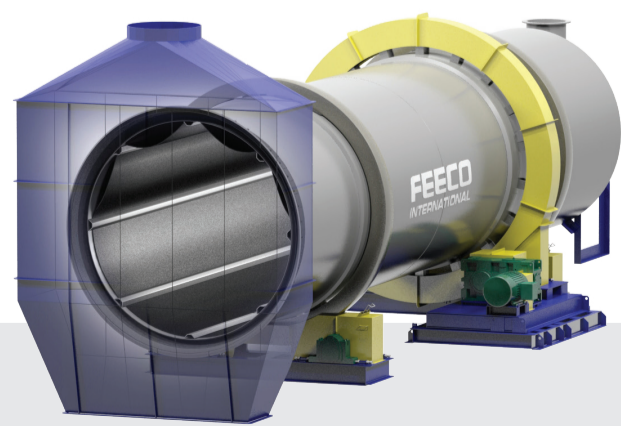
Liquid

No (but one may be helpful)

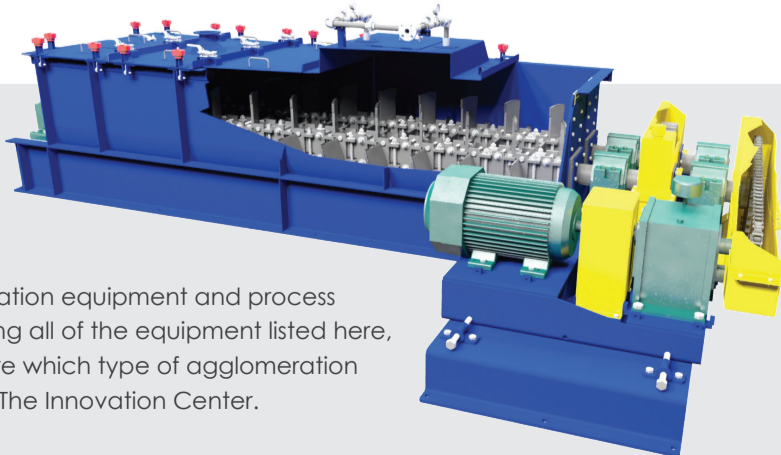
Typically Yes

Drying Step

No (unless a binder is used)



To learn about the equipment involved in the processes described here, see our [Agglomeration Equipment Infographic](#)



AGGLOMERATION SOLUTIONS

FEECO is the world's top provider of tumble growth agglomeration equipment and process solutions. We offer custom agglomeration equipment, including all of the equipment listed here, as well as process and product development services. Not sure which type of agglomeration is right for your material? Find out in our feasibility testing lab - The Innovation Center.

For more information, contact us today at FEECO.com/contact