



# Granulation

One of the first steps in the tablet manufacturing process is blending the active pharmaceutical ingredient (API) and the excipients (these are components other than the active substances) until a homogeneous mixture is achieved. This is done either in a free fall blender or in a high-shear mixer with strong shear forces if the API is low-dose.

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## Dry granulation

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| <p>⊕</p> <ul style="list-style-type: none"> <li>• Simple equipment</li> <li>• Minimum floor space</li> <li>• Efficient</li> <li>• Inexpensive</li> </ul> | <p>⊖</p> <ul style="list-style-type: none"> <li>• Particle size distribution</li> <li>• Flowability</li> <li>• Higher chance of cross-contamination</li> </ul> |
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## Wet granulation

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| <p>⊕</p> <ul style="list-style-type: none"> <li>• High variety</li> <li>• Easy combination of API and excipients</li> </ul> | <p>⊖</p> <ul style="list-style-type: none"> <li>• High complexity</li> <li>• Different equipment needed</li> </ul> |
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## Melt granulation

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| <p>⊕</p> <ul style="list-style-type: none"> <li>• Enhanced flow properties</li> <li>• Increased uniformity</li> <li>• Continuous process</li> <li>• Solvent-free</li> </ul> | <p>⊖</p> <ul style="list-style-type: none"> <li>• Particle size distribution</li> <li>• Flowability</li> <li>• Higher chance of cross-contamination</li> </ul> |
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