

PHARMA SOLID KNOWLEDGE REPORT

Fluffy Cohesive Powder.

AND HOW TO PROCESS POWDER ON A GKF (HARD GELATIN CAPSULE DOSING MACHINE)

Product Description

Product name: Activated Carbon	API: Activated Carbon	API classifications: Adsorbents	Excipients: No
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Comment: Experiences with yeast and activated carbon are available

Product Properties

Particle size distribution			Bulk density	Tapped density	Hausner Ratio	Carr ´s Index	Water content	Tamping test
X ₁₀ [µm]	X ₅₀ [µm]	X ₉₀ [µm]	[g/ml]	[g/ml]		[%]	[%]	[mm/N]
3.46	14.52	49.11	0.21	0.37	1.8	44.52	3.62	21.8 / 30

Comment: Hausner Ratio and Carr's Index show that it is difficult to keep the volume-controlled dosing accuracy uniformly high. Cause: Low particle size, very poor flow properties, but very good compacting properties.

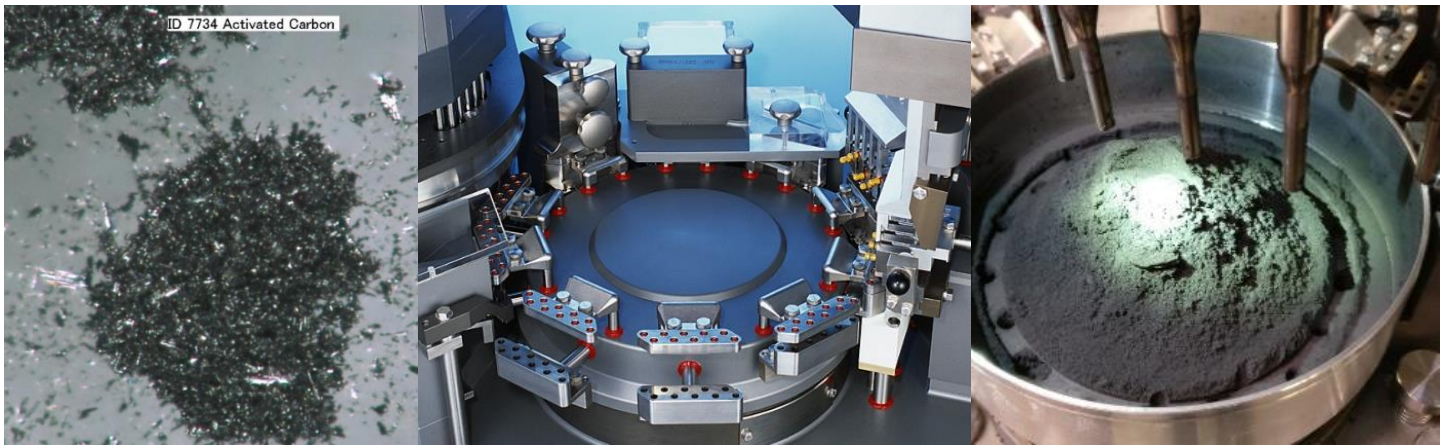
Customer Requirements

Customer Requirements	Syntegon Test Trial			Machine Parameter
	Current	Target	Result	
				Dosing disc height [mm]: 21,8
Output [c/h]	< 10'000	50'000	> 60'000	Capsule size dosing disc: 0
Machine type	Unknown	GKF 1400	GKF 1400	Tamping pin adjustment [mm]: 20/17/20/17/20
Dosing station	Dosator	Tamping pin	Tamping pin	Product level sensor [mm]: 35
Capsule size	0	0	0	Auger Speed [rpm]: 60
Capsule material	Gelatine	Gelatine	Gelatine	Post feed time auger [sec]: 3
Empty Capsule supplier	Unknown	Unknown	Capsugel	Additional Features: see comment
Fill weight [mg]	200	200	200	
Accuracy [%]	+/- 10	+/- 10	+/- 2.3 %	Comment: Customized tamping pins No powder deflector Standard springs
Range [mg]	180–220	180–220	195.4–204.6	
Yield [%]	< 60 %	> 85 %	> 90 %	

Conclusion

- ❑ Poor flowability: no powder deflector installed, thus stations 1 and 2 are best provided with powder.
- ❑ Small particle size: special tamping pins with larger diameters prevent the powder from spouting out.
- ❑ Very good compacting property = standard springs (plastic deformation).
- ❑ For this product with two critical physical properties, the GKF series with the proven tamping pin principle and the slide-gate-technology is the best way of filling.

Our solutions for your filling needs.



GKF Series – more than 5.000 times successfully in production



Technical Data GKF 1400

Output	84.000 capsules/h
Segment bores:	10
Machine cycles	Max. 140 cycles/min
Dosing systems	Powder, Pellet, Tablet, Liquid, Combinations
Dimension (W x D x H)	2200 x 998 x 2036 mm
Connected voltage	400 V +/- 10 %, 50/60 Hz Special voltages on request



More Questions?

You also have processes for optimization?

Please contact us. Our "Engineering Pharmaceutical Service" team will be available with all our experience of over 50 years:

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