

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 <sub>10</sub> [µm]	X <sub>50</sub> [µm]	X <sub>90</sub> [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

### Syntegon Test Trial

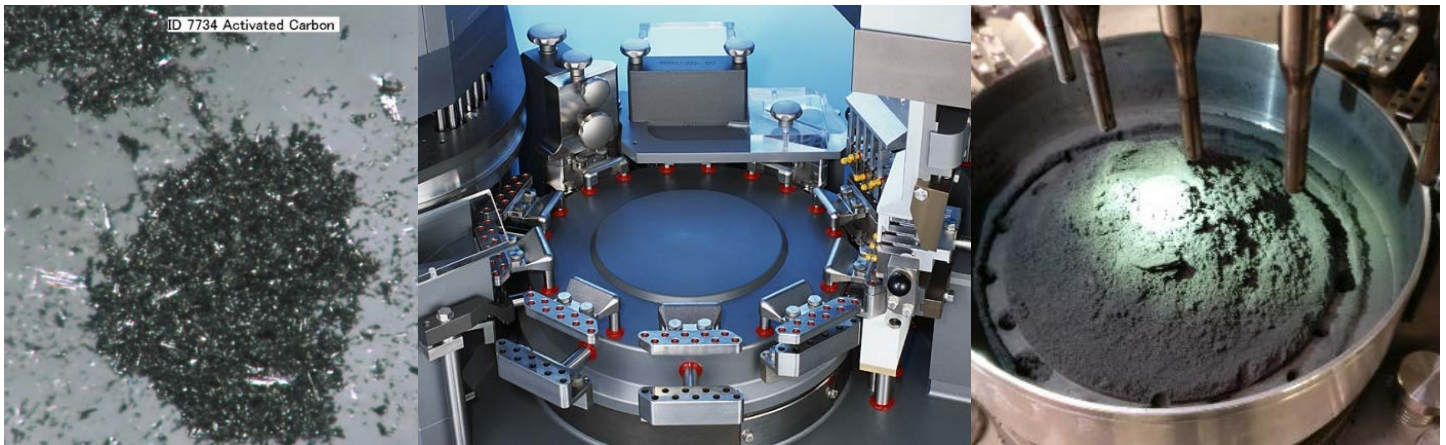
### Machine Parameter

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

**Dr. Thomas Brinz**  
**Head of Department Engineering Pharmaceutical Service**  
**Phone: +49(7151)14-2160**  
**Thomas.Brinz@syntegon.com**

**Syntegon Technology GmbH**  
**Stuttgarter Straße 130**  
**71332 Waiblingen**  
**Germany**

**Mail** [info@syntegon.com](mailto:info@syntegon.com)  
**Web** [www.syntegon.com](http://www.syntegon.com)

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