WALL CHART

JRS PHARMA The Global Excipient Maker — JRS FAMILY A Member of the JRS Group

Product Overview PHARMA

Product Overview

FIRST CLASS EXCIPIENTS & COATINGS for PHARMAceuticals

BINDERS

VIVAPUR® EMCOCEL®

Microcrystalline Cellulose[1], Ph. Eur., NF, JP, E 460(i), FCC

Grade	Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL] VIVAPUR®	Bulk Density [g/mL] EMCOCEL®	Main Application
VIVAPUR® 105		15	max. 0.26		Very fine grade, which gives a pleasant mouth feeling, masks bitter tastes and supports flavors.
VIVAPUR® 101	EMCOCEL® 50 M	65	0.26 - 0.31	0.25 - 0.37	Fine standard MCC grade, especially suited for wet granulation, roller compaction and spheronization. Very high compactability.
VIVAPUR® 103		65	0.26 - 0.31		Same quality as grade 101/50 M, but very **low moisture content** (< 1.5 %) for processing water-sensitive actives.
VIVAPUR® 301		65	0.35 - 0.46		Same quality as grade 101, but **increased bulk density** and improved flow properties.
VIVAPUR® 102	EMCOCEL® 90 M	130	0.28 - 0.33	0.25 - 0.37	Medium size standard MCC grade, suited for the majority of directly compressible actives. Combines good flow and high compactability.
VIVAPUR® 112	EMCOCEL® XLM 90	130	0.30 - 0.36	0.25 - 0.37	Same quality to grades 102/90 M, but **very low moisture** content (< 1.5 %) for processing water-sensitive actives.
VIVAPUR® 302	EMCOCEL® HD 90	130	0.35 - 0.50	0.38 - 0.50	Same quality to grade 102/90 M, but increased bulk density and improved flow properties. Especially suited for high speed tabletting and processing high density actives.
VIVAPUR® 102 SCG	EMCOCEL® 90 M COARSE	170 / 175	0.28 - 0.34	0.25 - 0.37	Coarse, DC-grade MCC
Optimal Flow and Compaction for DC					
VIVAPUR® 12		180	0.30 - 0.36		Coarse grade MCC, combines good compactability and high binding capacity with outstanding flow. Provides good content uniformity at low weight variation – even when used with low concentrations of fine actives.
VIVAPUR® 14		170	0.32 - 0.40		Same quality compared to grade 12, but very low moisture content (<1.5 %) for processing water-sensitive actives.
	EMCOCEL® LP 200	220		0.20 - 0.37	Coarse grade MCC, combines good compactability and high binding capacity with outstanding flow. Provides good content uniformity at low weight variation – even when used with low concentrations of fine actives.
VIVAPUR® 200		250	0.31 - 0.37		Large size MCC grade with excellent flow properties for a variety of direct compression formulations.
VIVAPUR® 200 XLM		250	0.33 - 0.40		Same quality to grades 200/LP 200, but very low moisture content (<1.5 %) for processing water-sensitive actives.

[1] RO-CEP 2009 -321

VIVAPHARM® Povidones

Povidone E 1201 and Copovidone E 1208

Grade	Compendial Name	Main Application
VIVAPHARM® PVP K25	Povidone, Ph. Eur., USP, JP, E 1201	Wet granulation binder
VIVAPHARM® PVP K30	Povidone, Ph. Eur., USP, JP, E 1201, FCC	Wet granulation binder
VIVAPHARM® PVP/VA 64	Copovidone, Ph. Eur., NF, E 1208, FCC, Copolyvidone, JPE	Binder for wet and dry granulation, direct compression and hot-melt extrusion.

EMDEX®

Dextrates, NF

Ideal for chewable and soluble tablets, **EMDEX®** is the only **compendial (NF) dextrate** that delivers the necessary flow, compaction, taste masking and flavor carrying capacity.
It is highly water-soluble and gives a cool smooth mouth feel.
EMDEX® is also available GMO-free.

LUBRICANTS

The Original

PRUV®

Sodium Stearyl Fumarate[2], Ph. Eur., NF, JPE, FCC

PRUV® is a highly efficient lubricant. It is less hydrophobic than magnesium stearate and avoids many problems caused by the bivalent magnesium cation*.
PRUV® significantly reduces the risk of overlubrication and minimizes film formation in effervescent tablets. A coarser particle size grade is available on request.

* e.g. Azathioprin, Cefaclor, Cilazapril, Clarithromycin, Clopidogrelacetate, Diclofenac, Fosinopril, Ibuprofen, Ketorolac, Levofloxacin, Nifedipine, Omeprazole, Ramipril, Trandolapril.

[2] R1-CEP 2006 - 313

LUBRITAB®

Hydrogenated Vegetable Oil, NF, BP
Hydrogenated Oil, JP

LUBRITAB® is made from hydrogenated cottonseed oil.
It is used as a lubricant as well as a binder and controlled release matrix.

DISINTEGRANTS

EXPLOTAB® VIVASTAR®

Sodium Starch Glycolate, Ph. Eur., NF, JP

MeOH-based	EtOH-based	pH Value	GMO-free	Compendial Type	Main Application
VIVASTAR® P		5.5 - 7.5	✓	A	Superdisintegrant with a rapid and high degree of swelling for tablet and capsule formulations. Especially for poorly water-soluble actives.
	EXPLOTAB®	5.5 - 7.5	✓	A	Superdisintegrant with a rapid and high degree of swelling for tablet and capsule formulations. Especially for poorly water-soluble actives and tablet matrices with higher pH values.
VIVASTAR® PSF		5.5 - 7.5	✓	A	Special grade with very low methanol content. Especially suited for alcohol- and moisture-sensitive.
	EXPLOTAB® CLV	5.5 - 7.5	✓	A	Special grade with increased number of crosslinkings. Especially suited for wet granulation applications.
	EXPLOTAB® PCF	5.5 - 7.5	✓	A	Special grade with max. 0.7 % NaCl recommended for APIs which require a very low ion content.
	EXPLOTAB® Low pH	3.0 - 5.0	✓	B	Special grade with low pH value. Complies with Type B of Ph. Eur., NF, JP.
VIVASTAR® P 1000 SF		5.5 - 7.5	✓	C	Low-/medium-/high-viscosity grade superdisintegrants, forming translucent gels in water. Compliant with Type C of the Ph. Eur. Compliant with Type A of JP and NF.
VIVASTAR® P 3500		5.5 - 7.5	✓	C	
VIVASTAR® P 5000		5.5 - 7.5	✓	C	

VIVASOL®

Croscarmellose Sodium, Ph. Eur., NF, JP

Grade	Raw Material	GMO-free	Loss on Drying	Solvent Content	
VIVASOL®	cotton floc		max. 10 %	max. 1 % MeOH	A **cellulose-based superdisintegrant**, providing excellent results in tablet disintegration. Used at a level of 1 - 4 % only, it is one of the most efficient superdisintegrants in the pharmaceutical technology. **VIVASOL®** can be used in all tableting processes. Especially good for medium soluble actives.
VIVASOL® GF	wood pulp	✓	max. 10 %	max. 0.5 % EtOH	
VIVASOL® GF LM	wood pulp	✓	max. 6 %	max. 0.1 % EtOH	Grade with less than 6 % moisture for food applications (E 468).

VIVAPHARM® Crospovidone

Crospovidone, Ph. Eur., NF, JP, E 1202, FCC

Unsurpassed disintegration performance and versatility.

Grade	Chemical Name	Average Particle Size by Laser Diffraction [µm]	Compendial Type
VIVAPHARM® PVPP XL	Polyvinylpyrrolidone, crosslinked	125	A
VIVAPHARM® PVPP XL-10		30	B

EMCOSOY®

Soy Polysaccharides

An all natural disintegrant, which does not contain starch or sugar. Being a dietary fiber, it has excellent application in nutritional products.

PROSOLV® – High Functionality Excipients

Innovation

PROSOLV® EASYtab

All-in-one Composite

A homogeneous high-functionality excipient composite, comprised of binder/filler, glidant, superdisintegrant and lubricant. **PROSOLV® EASYtab** imparts a perfect balance of compaction, flow, disintegration, lubrication, content uniformity and reduced sticking. **PROSOLV® EASYtab** for rapid formulation development, convenient tablet manufacture, significantly higher tableting speed and output per hour.

Grade	Binder: Micro-cristalline Cellulose	Glidant: CSD	Disintegrant: Cros-carmellose Sodium	Disintegrant: SSG	Lubricant: Sodium Stearyl Fumarate	Lubricant: MgSt	Main Application
PROSOLV® EASYtab SP	✓	✓		✓	✓		Ready-to-use excipient composite. Especially suitable for abrasive, bad flowing and fluffy actives formulations. High-speed tableting, superior weight, and content uniformity, no overmixing, higher yield.
PROSOLV® EASYtab SP LM	✓	✓		✓	✓		Equal quality to grade EASYtab SP, but lower moisture content (< 3 %).
PROSOLV® EASYtab NUTRA CM	✓	✓	✓			✓	EASYtab NUTRA exhibits the same advantages as EASYtab SP. It was specifically developed for nutra-ceutical applications. Ideally active ingredients simply need to be added to EASYtab NUTRA and can be put directly on the tablet press. Simplifies tableting, no need for further excipients.
PROSOLV® EASYtab NUTRA GM	✓	✓		✓		✓	
PROSOLV® EASYtab NUTRA CP	✓	✓	✓		✓		

The Original

PROSOLV® SMCC

Silicified Microcrystalline Cellulose, NF, JPE
(Microcrystalline Cellulose, Ph. Eur., NF, JP, E 460(i) and Silica, Colloidal Anhydrous, Ph. Eur., E 551[3], JP)

A portfolio of high functionality excipients that imparts superior flow, compaction and dispersion to a formulation. When used in direct compression, **PROSOLV® SMCC** can replace granulations, while significantly reducing excipient numbers and levels. **PROSOLV® SMCC** formulations produce distinctive, uniform, cost effective tablets.

Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL]	Main Application
PROSOLV® SMCC 50 LD	50	0.20 - 0.30	Best in class binder.
PROSOLV® SMCC 50	65	0.25 - 0.37	Formulas where optimal compaction and decent flow is required.
PROSOLV® SMCC 90	125	0.25 - 0.37	Formulas where a balance of flow and compaction is required.
PROSOLV® SMCC HD 90	125	0.38 - 0.50	Formulas where optimal flow and consolidation is required. This grade shows the best disintegration times. *Low moisture grade avaliable on request
PROSOLV® SMCC 90 LM	125	0.27 - 0.39	Equal quality to grade SMCC 90, but lower moisture content (< 3 %).

[3] NF = Colloidal Silicon Dioxide; JP = Light Anhydrous Silicic Acid

PROSOLV® ODT

PROSOLV® ODT G2 is a high functionality excipient for the production of oro-dispersible tablets. It enables fast and easy formulation work as well as efficient manufacturing of high quality ODTs.

Grade	Ingredients	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL]	Main Application
PROSOLV® ODT G2	Microcrystalline Cellulose Colloidal Silicon Dioxide Mannitol Fructose Crospovidone	52	0.45 - 0.65	**PROSOLV® ODT G2** is a simple-to-use co-processed composite derived from JRS PHARMA's patented **PROSOLV® Technology**. Its primary application is for the development and manufacture of orally disintegrating tablets allowing the discrete and convenient administering of medicines without water for high patient compliance.

FUNCTIONAL FILLERS

ARBOCEL®

Powdered Cellulose, Ph. Eur., NF, JP, E 460 (ii), FCC

Powdered cellulose is used as an economic and inert diluent in tableting and capsule filling. Especially in wet granulation it works synergistically with other economic excipients such as starch or lactose. Combined with these, **ARBOCEL®** improves tablet hardness and disintegration time.

Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL]	Main Application
ARBOCEL® M80	55	0.20 - 0.24	Fine, fibrous grade of powdered cellulose, suitable for wet granulation.
ARBOCEL® P290	75	0.27 - 0.33	Fine grade with increased density and improved flow. Suitable for wet granulation and direct compression.
ARBOCEL® A300	320	0.31 - 0.41	Coarse grade with excellent flow properties used in direct compression and for capsule fillings.

COMPACTROL®

Calcium Sulfate Dihydrate, Ph. Eur., NF, E 516, FCC

COMPACTROL® is a specially processed Calcium Sulfate Dihydrate for use as a filler in tablets made by direct compression or wet granulation.

Bulk density [g/mL]	Average Particle Size by Laser Diffraction [µm]
max 1.1	120

EMCOMPRESS®

Calcium Phosphates

Grade	Compendial Name	Food Additives Monographs	Average Particle Size by Laser Diffraction [µm]	Main Application
EMCOMPRESS® PREMIUM[4]	Dibasic Calcium Phosphate Dihydrate, USP Calcium Hydrogen Phosphate Dihydrate, Ph. Eur. Dibasic Calcium Phosphate Hydrate, JP Calcium Phosphate Dibasic, FCC Dicalcium Phosphate, E 341 (ii)	FCC, E 341 (ii)	220	Direct Compression
EMCOMPRESS®			190	Direct Compression
EMCOMPRESS® PREMIUM POWDER[4]		FCC, E 341 (ii)	< 50	Wet Granulation
EMCOMPRESS® ANHYDROUS	Calcium Hydrogen Phosphate, Ph. Eur. Anhydrous Dibasic Calcium Phosphate, USP, JP Dibasic Calcium Phosphate Anhydrous, FCC Anhydrous Calcium Phosphate, Dibasic, E 341 (ii)		200	Direct Compression
EMCOMPRESS® ANHYDROUS DC		FCC, E 341 (ii)	170	Direct Compression
EMCOMPRESS® ANHYDROUS COARSE POWDER 60[4]		FCC, E 341 (ii)	60	Direct Compression
EMCOMPRESS® ANHYDROUS POWDER[4]		FCC, E 341 (ii)	< 50	Wet Granulation
EMCOMPRESS® TCP DC[4]	Calcium Phosphate, Ph. Eur. Tribasic Calcium Phosphate, NF, JPE, E 341 (iii), FCC	FCC, E 341 (ii)	300	Direct Compression
EMCOMPRESS® TCP POWDER[4]		FCC, E 341 (ii)	< 50	Wet Granulation & Anticaking Agent

[4] Characterised by extra tight specifications on heavy metals and aluminium, thus complying with European food regulations.

Order your Samples and ask for JRS Tablet Formulation Guide now.

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www.jrspharma.com

WORLDWIDE HEADQUARTERS
JRS PHARMA GMBH & CO. KG
73494 Rosenberg (Germany)
Phone: +49 7967 152-312
Fax: +49 7967 152-345
ExcipientsService@JRSPharma.de
www.jrspharma.com

COATING – Ready-to-Use

NEW

VIVACOAT®

Ready-to-Use Coating System

Grade	Main Application	
VIVACOAT® A	High Adhesion	- Fully formulated Coating System (powder) - Highest quality standards - Made in Germany and USA - Color guarantee - Free technical support - Pharmaceutical & nutraceutical applications
VIVACOAT® M neo	Moisture Barrier	
VIVACOAT® X	eXtra Elegance	
VIVACOAT® C	Customer Formulation	

VIVACOAT® protect

Ready-to-Use High Functional Coating System

Grade	Main Application	
VIVACOAT® protect E	Enteric	- Fully formulated Coating System (powder) - Highest quality standards - Made in Germany and USA - High polymer content, less weight gain required - Shorter process time - Free technical support
VIVACOAT® protect W	Water Vapor Protection	
VIVACOAT® protect T	Taste Protection	
VIVACOAT® protect U	UV-Protection	

Coating Hotline: Phone: +49 7967 152-444 · filmcoating@jrspharma.de

COATING – Polymers

VIVAPHARM® HPMC

Hypromellose, Ph. Eur., USP, JP, E 464, FCC

Grade	Substitution Type	Viscosity (2 %) [mPa•s]	Main Application
VIVAPHARM® HPMC E 3	USP 2910 Methoxy-groups: 28 - 30 % Hydroxypropoxy-groups: 7 - 12 %	3	For high solid content
VIVAPHARM® HPMC E 5		5	Typical grade for an excellent coat; Binder for wet granulation
VIVAPHARM® HPMC E 6		6	Typical grade for an excellent coat; Binder for wet granulation
VIVAPHARM® HPMC E 15		15	Binder for wet granulation; Grade for an excellent coat
VIVAPHARM® HPMC E 50		50	As a suspension stabilizer

NEW

VIVAPHARM® PVA

Poly(vinyl alcohol), Ph. Eur. / Polyvinyl Alcohol, NF / Partially Hydrolyzed Polyvinyl Alcohol, JPE, E 1203, FCC, GRAS

Grade	Degree of Hydrolysis (mol - %)	Viscosity (4 %) [mPa•s]	Main Application
VIVAPHARM® PVA	85-89	4.6 - 6.0	Tablet coating, wet granulation

Coating Hotline: Phone: +49 7967 152-444 · filmcoating@jrspharma.de

THICKENERS • STABILIZERS • GELLING AGENTS

VIVAPUR® MCG

Microcrystalline Cellulose and Carboxymethylcellulose Sodium, Ph. Eur., NF, E 460 (i) & E 466, FCC

Dispersible cellulose. Thickener and stabilizer for "ready-to-use" and reconstitutable suspensions, emulsions and spray applications.

Grade	NaCMC [%]	Particle Size	Viscosity [mPa•s]	Main Application
VIVAPUR® MCG 581 P	8.3 - 13.8	> 250 µm (60 mesh): max. 0.1 % > 75 µm (200 mesh): max. 35 %	72 - 168 (1.2 % solids)	For „ready-to-use" suspensions and emulsions prepared with high shear forces.
VIVAPUR® MCG 591 P	8.3 - 13.8	> 250 µm (60 mesh): max. 0.1 % > 45 µm (325 mesh): max. 45 %	39 - 91 (1.2 % solids)	
VIVAPUR® MCG 611 P	11.3 - 18.8	> 250 µm (60 mesh): max. 0.1 % > 45 µm (325 mesh): max. 50 %	50 - 118 (2.6 % solids)	For reconstitutable dry suspensions.
VIVAPUR® MCG 811 P	11.3 - 18.8	> 250 µm (60 mesh): max. 3 %	2400 - 5600 (2.6 % solids)	Highly effective dispersible cellulose grade for a variety of suspensions, emulsions and spray applications.

NEW

VIVAPHARM® Alginates

Grade	Characteristics	Available Viscosity Ranges [1 %, 20 °C]	Available Granulometry [98 % through]		Function & Application
VIVAPHARM® Alginates Sodium Alginate	Powder, water-soluble	Ultra low to high viscous grades covering a range of <5 - 950 mPas.	Various granulometries covering a range of 100 - 620 µm	Ph. Eur., E 401	Gelling and thickening agent for controlled release (matrix tablets) and microencapsulation. Provides film forming in film strips.
VIVAPHARM® Alginates Calcium Alginate	Powder, water-insoluble, swelling	insoluble	160 µm	E 404	Wound care
VIVAPHARM® Alginates Alginic Acid	Powder, water-insoluble, swelling	insoluble	160 µm	Ph. Eur., E 400	Swelling agent with disintegrating properties.

For customized solutions please contact: ExcipientsService@JRSPharma.de

NEW

VIVAPHARM® Pectins

Highly Pure Pectin

Grade	Compendial Name	Main Application
VIVAPHARM® Pectin USP	Pectin (USP)	Pharmagrade – ultra pure unstandardized pectin for wound care, fiber enrichment, ostomy care

CARRIERS

VIVAPUR® MCC SPHERES

Microcrystalline Cellulose, Ph. Eur., NF, JP, E 460 (i)

Chemical inert carrier for APIs

Grade	Size [mesh]	Size [µm]	Main Application
VIVAPUR® MCC SPHERES 100	70 - 140	100 - 200	- Water-insoluble carrier - For organic solvent free API coating - Small particle sizes available - High robustness
VIVAPUR® MCC SPHERES 200	45 - 70	200 - 355	
VIVAPUR® MCC SPHERES 350	35 - 45	355 - 500	
VIVAPUR® MCC SPHERES 500	25 - 35	500 - 710	
VIVAPUR® MCC SPHERES 700	18 - 25	710 - 1000	
VIVAPUR® MCC SPHERES 1000	14 - 18	1000 - 1400	

VIVAPHARM® Sugar Spheres

Non-GMO; Ph. Eur., NF

Water soluble spheres with outstanding sphericity, low friability and constant narrow particle size distribution.

Size [mesh]	Size [µm]	Main Application
60 - 80	180 - 250	Well established carriers for drugs which are coated around the sugar pellets - Multi unit pellet systems - Consistent and controlled drug release - Multiple drugs combined in one unit - High content uniformity - High drug stability
45 - 60	250 - 355	
40 - 60	250 - 425	
40 - 50	300 - 425	
35 - 45	355 - 500	
35 - 40	425 - 500	
30 - 35	500 - 600	
25 - 30	600 - 710	
20 - 25	710 - 850	
18 - 20	850 - 1000	
16 - 20	850 - 1180	
16 - 18	1000 - 1180	
14 - 18	1000 - 1400	
12 - 14	1400 - 1700	

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WALL CHART

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Product Overview

FIRST CLASS EXCIPIENTS & COATINGS

for NUTRAceutical

BINDERS

VIVAPUR® EMCOCEL®

Microcrystalline Cellulose[1], Ph. Eur., NF, JP, E 460(i), FCC — EU US

Grade	Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL] VIVAPUR®	Bulk Density [g/mL] EMCOCEL®	Main Application
VIVAPUR® 105		15	max. 0.26		Very fine grade, which gives a pleasant mouth feeling, masks bitter tastes and supports flavors.
VIVAPUR® 101	EMCOCEL® 50 M	65	0.26 - 0.31	0.25 - 0.37	Fine standard MCC grade, especially suited for wet granulation, roller compaction and spheronization. Very high compactability.
VIVAPUR® 103		65	0.26 - 0.31		Same quality as grade 101/50 M, but very **low moisture content** (< 1.5 %) for processing water-sensitive actives.
VIVAPUR® 301		65	0.35 - 0.46		Same quality as grade 101, but **increased bulk density** and improved flow properties.
VIVAPUR® 102	EMCOCEL® 90 M	130	0.28 - 0.33	0.25 - 0.37	Medium size standard MCC grade, suited for the majority of directly compressible actives. Combines good flow and high compactability.
VIVAPUR® 112	EMCOCEL® XLM 90	130	0.30 - 0.36	0.25 - 0.37	Same quality to grades 102/90 M, but **very low moisture** content (< 1.5 %) for processing water-sensitive actives.
VIVAPUR® 302	EMCOCEL® HD 90	130	0.35 - 0.50	0.38 - 0.50	Same quality to grade 102/90 M, but increased bulk density and improved flow properties. Especially suited for high speed tabletting and processing high density actives.
VIVAPUR® 102 SCG	EMCOCEL® 90 M COARSE	170 / 175	0.28 - 0.34	0.25 - 0.37	Coarse, DC-grade MCC
Optimal Flow and Compaction for DC					
VIVAPUR® 12		180	0.30 - 0.36		Coarse grade MCC, combines good compactability and high binding capacity with outstanding flow. Provides good content uniformity at low weight variation – even when used with low concentrations of fine actives.
VIVAPUR® 14		170	0.32 - 0.40		Same quality compared to grade 12, but very low moisture content (<1.5 %) for processing water-sensitive actives.
	EMCOCEL® LP 200	220		0.20 - 0.37	Coarse grade MCC, combines good compactability and high binding capacity with outstanding flow. Provides good content uniformity at low weight variation – even when used with low concentrations of fine actives.
VIVAPUR® 200		250	0.31 - 0.37		Large size MCC grade with excellent flow properties for a variety of direct compression formulations.
VIVAPUR® 200 XLM		250	0.33 - 0.40		Same quality to grades 200/LP 200, but very low moisture content (<1.5 %) for processing water-sensitive actives.

[1] R0-CEP 2009 -321

VIVAPHARM® Povidones

Povidone E 1201 and Copovidone E 1208

Grade	Compendial Name	Main Application	
VIVAPHARM® PVP K25	Povidone, Ph. Eur., USP, JP, E 1201	Wet granulation binder	EU
VIVAPHARM® PVP K30	Povidone, Ph. Eur., USP, JP, E 1201, FCC	Wet granulation binder	EU US
VIVAPHARM® PVP/VA 64	Copovidone, Ph. Eur., NF, E 1208, FCC, Copolyvidone, JPE	Binder for wet and dry granulation, direct compression and hot-melt extrusion.	EU US

EMDEX®

Dextrates, NF — US

Ideal for chewable and soluble tablets, **EMDEX®** is the only **compendial (NF) dextrate** that delivers the necessary flow, compaction, taste masking and flavor carrying capacity.
It is highly water-soluble and gives a cool smooth mouth feel.

EMDEX®

NON-GMO, Dextrates, NF — EU

EMDEX® is also available GMO free.

LUBRICANTS

PRUV®

Sodium Stearyl Fumarate[2], Ph. Eur., NF, JPE, FCC, self-affirmed GRAS — US

PRUV® is a highly efficient lubricant. It is less hydrophobic than magnesium stearate and avoids many problems caused by the bivalent magnesium cation*.
PRUV® significantly reduces the risk of over lubrication and minimizes film formation in effervescent tablets. A coarser particle size grade is available on request.

* e.g. Azathioprin, Cefaclor, Cilazapril, Clarithromycin, Clopidogrelacetate, Diclofenac, Fosinopril, Ibuprofen, Ketorolac, Levofloxacin, Nifedipine, Omeprazole, Ramipril, Trandolapril.

[2] R1-CEP 2006 - 313

LUBRITAB®

Hydrogenated Vegetable Oil, NF, BP
Hydrogenated Oil, JP — US

LUBRITAB® is made from hydrogenated cottonseed oil.
It is used as a lubricant as well as a binder and controlled release matrix.

DISINTEGRANTS

VIVASOL®

Croscarmellose Sodium, Ph. Eur., NF, JP — EU

Grade	Raw Material	GMO free	Loss on Drying	Solvent Content	
VIVASOL® GF LM	wood pulp	✓	max. 6 %	max. 0.1 % EtOH	Grade with less than 6 % moisture for food applications (E 468).

VIVAPHARM® Crospovidone

Crospovidone, Ph. Eur., NF, JP, E 1202, FCC — EU US

Unsurpassed disintegration performance and versatility.

Grade	Chemical Name	Average Particle Size by Laser Diffraction [µm]	Compendial Type
VIVAPHARM® PVPP XL	Polyvinylpyrrolidone, crosslinked	125	A
VIVAPHARM® PVPP XL-10		30	B

EMCOSOY®

Soy Polysaccharides — US

An all natural disintegrant, which does not contain starch or sugar. Being a dietary fiber, it has excellent application in nutritional products.

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EU US : indicates which excipients are allowed to be used in food in EU resp. US.

PROSOLV® – High Functionality Excipients

PROSOLV® EASYtab

All-in-one Composite

A homogeneous high-functionality excipient composite, comprised of binder/filler, glidant, superdisintegrant and lubricant. **PROSOLV® EASYtab** imparts a perfect balance of compaction, flow, disintegration, lubrication, content uniformity and reduced sticking. **PROSOLV® EASYtab** for rapid formulation development, convenient tablet manufacture, significantly higher tableting speed and output per hour.

Grade	Binder: Micro-cristalline Cellulose	Glidant: CSD	Disintegrant: Cros-carmellose Sodium	Disintegrant: SSG	Lubricant: Sodium Stearyl Fumarate	Lubricant: MgSt	Main Application	
PROSOLV® EASYtab NUTRA CM	✓	✓	✓			✓	EASYtab NUTRA exhibits the same advantages as EASYtab SP. It was specifically developed for nutra-ceutical applications. Ideally active ingredients simply need to be added to EASYtab NUTRA and can be put directly on the tablet press. Simplifies tableting, no need for further excipients.	EU US
PROSOLV® EASYtab NUTRA GM	✓	✓		✓		✓		
PROSOLV® EASYtab NUTRA CP	✓	✓	✓		✓			US

PROSOLV® SMCC

Silicified Microcrystalline Cellulose, NF. JPE
(Microcrystalline Cellulose, Ph. Eur., NF, JP, E 460 (i) and Silica, Colloidal Anhydrous, Ph. Eur., E 551[3], JP) — EU US

A portfolio of high functionality excipients that imparts superior flow, compaction and dispersion to a formulation. When used in direct compression, **PROSOLV® SMCC** can replace granulations, while significantly reducing excipient numbers and levels. **PROSOLV® SMCC** formulations produce distinctive, uniform, cost effective tablets.

Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL]	Main Application
PROSOLV® SMCC 50 LD	50	0.20 - 0.30	Best in class binder.
PROSOLV® SMCC 50	65	0.25 - 0.37	Formulas where optimal compaction and decent flow is required.
PROSOLV® SMCC 90	125	0.25 - 0.37	Formulas where a balance of flow and compaction is required.
PROSOLV® SMCC HD 90	125	0.38 - 0.50	Formulas where optimal flow and consolidation is required. This grade shows the best disintegration times. *Low moisture grade avaliable on request
PROSOLV® SMCC 90 LM	125	0.27 - 0.39	Equal quality to grade SMCC 90, but lower moisture content (< 3 %).

[3] NF = Colloidal Silicon Dioxide; JP = Light Anhydrous Silicic Acid

FUNCTIONAL FILLERS

ARBOCEL®

Powdered Cellulose, Ph. Eur., NF, JP, E 460 (ii), FCC — EU US

Powdered cellulose is used as an economic and inert diluent in tableting and capsule filling. Especially in wet granulation it works synergistically with other economic excipients such as starch or lactose. Combined with these, **ARBOCEL®** improves tablet hardness and disintegration time.

Grade	Average Particle Size by Laser Diffraction [µm]	Bulk Density [g/mL]	Main Application
ARBOCEL® M80	55	0.20 - 0.24	Fine, fibrous grade of powdered cellulose, suitable for wet granulation.
ARBOCEL® P290	75	0.27 - 0.33	Fine grade with increased density and improved flow. Suitable for wet granulation and direct compression.
ARBOCEL® A300	320	0.31 - 0.41	Coarse grade with excellent flow properties used in direct compression and for capsule fillings.

COMPACTROL®

Calcium Sulfate Dihydrate, Ph. Eur., NF, E 516, FCC — EU US

COMPACTROL® is a specially processed Calcium Sulfate Dihydrate for use as a filler in tablets made by direct compression or wet granulation.

Bulk density [g/mL]	Average Particle Size by Laser Diffraction [µm]
max 1.1	120

EMCOMPRESS®

Calcium Phosphates — EU US

Grade	Compendial Name	Average Particle Size by Laser Diffraction [µm]	Main Application
EMCOMPRESS® PREMIUM	Dibasic Calcium Phosphate Dihydrate, USP Calcium Hydrogen Phosphate Dihydrate, Ph. Eur. Dibasic Calcium Phosphate Hydrate, JP Calcium Phosphate Dibasic, FCC Dicalcium Phosphate, E 341 (ii)	220	Direct Compression
EMCOMPRESS® PREMIUM POWDER		< 50	Wet Granulation
EMCOMPRESS® ANHYDROUS DC	Calcium Hydrogen Phosphate, Ph. Eur. Anhydrous Dibasic Calcium Phosphate, USP, JP Dibasic Calcium Phosphate Anhydrous, FCC Anhydrous Calcium Phosphate, Dibasic, E 341 (ii)	170	Direct Compression
EMCOMPRESS® ANHYDROUS COARSE POWDER 60		60	Direct Compression
EMCOMPRESS® ANHYDROUS POWDER		< 50	Wet Granulation
EMCOMPRESS® TCP DC	Calcium Phosphate, Ph. Eur. Tribasic Calcium Phosphate, NF, JPE, E 341 (iii), FCC	300	Direct Compression
EMCOMPRESS® TCP POWDER		< 50	Wet Granulation & Anticaking Agent

Order your Samples and ask for JRS Tablet Formulation Guide now.

COATING – Ready-to-Use

NEW

VIVACOAT®

Ready-to-Use Coating System — EU US

Grade	Main Application	
VIVACOAT® A	High Adhesion	- Fully formulated Coating System (powder) - Highest quality standards - Made in Germany and USA - Color guarantee - Free technical support - Pharmaceutical & nutraceutical applications
VIVACOAT® M neo	Moisture Barrier	
VIVACOAT® X	eXtra Elegance	
VIVACOAT® C	Customer Formulation	
VIVACOAT® N	Natural Components, TiO_2 -free	

NEW

VIVACOAT®

Ready-to-Use High Functional Coating System — EU US

Grade	Main Application	
VIVACOAT® seal	Multifunctional Coating	Isolation, taste masking, moisture protection, odor masking, sealant against acidic fluids
VIVACOAT® U	UV-Protection	Clear top-coat

Coating Hotline: Phone: +49 7967 152-444 · filmcoating@jrspharma.de

COATING – Polymers

VIVAPHARM® HPMC

Hypromellose, Ph. Eur., USP, JP, E 464, FCC — EU US

Grade	Substitution Type	Viscosity (2 %) [mPa•s]	Main Application
VIVAPHARM® HPMC E 3	USP 2910 Methoxy-groups: 28 - 30 % Hydroxypropoxy-groups: 7 - 12 %	3	For high solid content
VIVAPHARM® HPMC E 5		5	Typical grade for an excellent coat; Binder for wet granulation
VIVAPHARM® HPMC E 6		6	Typical grade for an excellent coat; Binder for wet granulation
VIVAPHARM® HPMC E 15		15	Binder for wet granulation; Grade for an excellent coat
VIVAPHARM® HPMC E 50		50	As a suspension stabilizer

NEW

VIVAPHARM® PVA

Poly(vinyl alcohol), Ph. Eur. / Polyvinyl Alcohol, NF / Partially Hydrolyzed Polyvinyl Alcohol, JPE, E 1203, FCC, GRAS — EU US

Grade	Degree of Hydrolysis (mol-%)	Viscosity (4 %) [mPa•s]	Main Application
VIVAPHARM® PVA	85-89	4.6 - 6.0	Tablet coating, wet granulation

Coating Hotline: Phone: +49 7967 152-444 · filmcoating@jrspharma.de

THICKENERS • STABILIZERS • GELLING AGENTS

VIVAPUR® MCG

Microcrystalline Cellulose and Carboxymethylcellulose Sodium, Ph. Eur., NF, E 460 (i) & E 466, FCC — EU US

Dispersible cellulose. Thickener and stabilizer for "ready-to-use" and reconstitutable suspensions, emulsions and spray applications.

Grade	NaCMC [%]	Particle Size	Viscosity [mPa•s]	Main Application
VIVAPUR® MCG 581 P	8.3 - 13.8	> 250 µm (60 mesh): max. 0.1 % > 75 µm (200 mesh): max. 35 %	72 - 168 (1.2 % solids)	For „ready-to-use" suspensions and emulsions prepared with high shear forces.
VIVAPUR® MCG 591 P	8.3 - 13.8	> 250 µm (60 mesh): max. 0.1 % > 45 µm (325 mesh): max. 45 %	39 - 91 (1.2 % solids)	
VIVAPUR® MCG 611 P	11.3 - 18.8	> 250 µm (60 mesh): max. 0.1 % > 45 µm (325 mesh): max. 50 %	50 - 118 (2.6 % solids)	For reconstitutable dry suspensions.
VIVAPUR® MCG 811 P	11.3 - 18.8	> 250 µm (60 mesh): max. 3 %	2400 - 5600 (2.6 % solids)	Highly effective dispersible cellulose grade for a variety of suspensions, emulsions and spray applications.

NEW

VIVAPHARM® Alginates

EU US

Grade	Characteristics	Available Viscosity Ranges [1 %. 20 °C]	Available Granulometry [98 % through]		Function & Application
VIVAPHARM® Alginates Sodium Alginate	Powder, water soluble	Ultra low to high viscous grades covering a range of <5 - 950 mPas.	Various granulometries covering a range of 100 - 620 µm	Ph. Eur., E 401	Gelling and thickening agent for controlled release (matrix tablets) and microencapsulation. Provides film forming in film strips.
VIVAPHARM® Alginates Alginic Acid	Powder, water-insoluble, swelling	insoluble	160 µm	Ph. Eur., E 400	Food grade disintegrant

For customized solutions please contact: ExcipientsService@JRSPharma.de

NEW

VIVAPHARM® Pectins Nutra

Standardized and Buffered Pectins — EU US

Grade	Ingredients	Main Application
VIVAPHARM® Pectin NUTRA 150	Pectin (E 440(i)); Dextrose	Basic unbuffered pectin for Nutra Gummies standardized at 150 USA SAG.
VIVAPHARM® Pectin NUTRA SB	Pectin (E 440(i), Dipotassium Tartrate (E 336(ii)), Sodium Hexametaphosphate (E 452(i)), Silicon Dioxide (E 551(i))	Convenient Pectin for Nutra Gummies. Buffer salts already included.
VIVAPHARM® Pectin NUTRA GR	Pectin (E 440(i)), Dipotassium Tartrate (E 336(ii)), Sodium Citrate (E 331(iii)), Dextrose	Gummies with more chewy, less brittle texture. Ideal for Gelatin replacement.

CARRIERS

VIVAPUR® MCC SPHERES

Microcrystalline Cellulose, Ph. Eur., NF, JP, E 460 (i) — EU US

Chemical inert carrier for APIs.

Grade	Size [mesh]	Size [µm]	Main Application
VIVAPUR® MCC SPHERES 100	70 - 140	100 - 200	- Water-insoluble carrier - For organic solvent free API coating - Small particle sizes available - High robustness
VIVAPUR® MCC SPHERES 200	45 - 70	200 - 355	
VIVAPUR® MCC SPHERES 350	35 - 45	355 - 500	
VIVAPUR® MCC SPHERES 500	25 - 35	500 - 710	
VIVAPUR® MCC SPHERES 700	18 - 25	710 - 1000	
VIVAPUR® MCC SPHERES 1000	14 - 18	1000 - 1400	

VIVAPHARM® Sugar Spheres

Non-GMO; Ph. Eur., NF — EU US

Water-soluble spheres with outstanding sphericity, low friability and constant narrow particle size distribution.

Size [mesh]	Size [µm]	Main Application
60 - 80	180 -250	Well established carriers for drugs which are coated around the sugar pellets - Multi unit pellet systems - Consistent and controlled drug release - Multiple drugs combined in one unit - High content uniformity - High drug stability
45 - 60	250 -355	
40 - 60	250 -425	
40 - 50	300 -425	
35 - 45	355 - 500	
35 - 40	425 -500	
30 - 35	500 -600	
25 - 30	600 -710	
20 - 25	710 -850	
18 - 20	850 -1000	
16 - 20	850 -1180	
16 - 18	1000 - 1180	
14 - 18	1000 - 1400	
12 - 14	1400 - 1700	

WALL CHART

JRS PHARMA The Global Excipient Maker — JRS FAMILY A Member of the JRS Group

Product Overview NUTRA

WORLDWIDE HEADQUARTERS
JRS PHARMA GMBH & CO. KG
73494 Rosenberg (Germany)
Phone: +49 7967 152-312
Fax: +49 7967 152-345
ExcipientsService@JRSPharma.de
www.jrspharma.com

EXCIPIENTS & COATINGS

www.jrspharma.com