VIVACOAT®

Ready-to-Use Coating System
for Pharmaceutical Tablets

- High Quality -

Made in Germany
Made in USA
High Quality – Made in Germany and USA

What is VIVACOAT®?

- Fully formulated powder
- Ready-to-Use (just add the powder to water)
- For pharmaceutical application
- Customized color

What are the Benefits?

- Raw materials from own production and qualified suppliers
- Qualified alternative sources for secured supply
- Highest quality standards - Made in Germany and USA
- Shorter process time
- Reduced costs
- Many basic formulations for fast development available
- Best quality at a reasonable price
- Batch to batch color consistency
- Color guarantee
- Free technical support locally
- Best performance of the coating on your tablet in your production
VIVACOAT® – Grades for Pharmaceutical Tablets

VIVACOAT®
Non functional Ready-to-Use coatings

VIVA COAT® A  High adhesion
VIVA COAT® M neo  Moisture barrier
VIVA COAT® X  eXtra elegance
VIVA COAT® C  Customer formulation

VIVACOAT® protect
High functional Ready-to-Use coatings

VIVA COAT® protect T  Taste masking
VIVA COAT® protect U  UV protection
VIVA COAT® protect W  Water vapor protection
VIVA COAT® protect E  Enteric
VIVACOAT® A – High Adhesion

„Simplicity is the Ultimate Sophistication“
(Leonardo da Vinci)

VIVACOAT® is a robust film coating system which shows outstanding performance in both laboratory and production equipment.

Adhesion of the film on the tablet core often is an issue. Then VIVACOAT® A is the best option as it has been formulated to solve adhesion related challenges.

VIVACOAT® A shows outstanding adhesion to tablet cores achieved by using globally accepted excipients.

Low adhesion can be the reason for the frequently observed effect of „logo bridging“.

VIVACOAT® A leads to perfect logo definition. Furthermore, the sometimes problematic edges of the tablet are well-covered.

Short process times are achieved by utilising the high solids content of VIVACOAT® A (up to 20 % solids).

The unique combination of polymer and plasticizer allows the coated cores to „self polish“ in your equipment.

To get the best out of your equipment you are welcome to use our global technical support.

Please refer to VIVACOAT® – technical performance in this brochure.
VIVACOAT® A

VIVACOAT® A is a robust film coating system which shows outstanding performance in both laboratory and production equipment. Adhesion of the film on the tablet core often is an issue. Then VIVACOAT® A is the best option as it has been formulated to solve adhesion related challenges. VIVACOAT® A shows outstanding adhesion to tablet cores achieved by using globally accepted excipients. Low adhesion can be the reason for the frequently observed effect of "logo bridging". VIVACOAT® A leads to perfect logo definition. Furthermore, the sometimes problematic edges of the tablet are well-covered. Short process times are achieved by utilising the high solids content of VIVACOAT® A (up to 20 % solids). The unique combination of polymer and plasticizer allows the coated cores to "self polish" in your equipment. To get the best out of your equipment you are welcome to use our global technical support. Please refer to VIVACOAT® – technical performance in this brochure.

"Simplicity is the Ultimate Sophistication" (Leonardo da Vinci)

Ready-to-Use Coating System

### Recommended Process Parameters

<table>
<thead>
<tr>
<th></th>
<th>Recon Level [%]</th>
<th>Inlet Temp [°C]</th>
<th>Tablet Bed Temp [°C]</th>
<th>Exhaust Temp. [°C]</th>
<th>Total Spray Rate [g/min]</th>
<th>Pan Speed [rpm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Perforated Pan, Batch size 800 g</td>
<td>15 - 18</td>
<td>65 - 70</td>
<td>34 - 40</td>
<td>38 - 45</td>
<td>3 - 4</td>
<td>5 - 8</td>
</tr>
<tr>
<td>Conventional Pan, Batch size 2000 - 3000 g</td>
<td>15 - 18</td>
<td>n.a.</td>
<td>36 - 37</td>
<td>n.a.</td>
<td>8 - 10</td>
<td>4 - 6</td>
</tr>
<tr>
<td>Semi Perforated Pan, Batch size 18 - 20 kg</td>
<td>15 - 18</td>
<td>85 - 88</td>
<td>36 - 40</td>
<td>45 - 48</td>
<td>55 - 60</td>
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<td>Fully Perforated Pan, Batch size 100 - 120 kg</td>
<td>15 - 18</td>
<td>65 - 68</td>
<td>34 - 38</td>
<td>40 - 42</td>
<td>180 - 200</td>
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<tr>
<td>Fully Perforated Pan, Batch size 300 - 400 kg</td>
<td>15 - 18</td>
<td>65 - 68</td>
<td>34 - 38</td>
<td>40 - 42</td>
<td>500 - 600</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

Solid Content 17 %
Many APIs are sensitive towards hydrolysis and, thus, humidity lowers the activity of APIs. **VIVACOAT® M neo** is optimized to protect a moisture sensitive tablet core against humidity.

The best protection can be achieved by the combination of **VIVACOAT® M neo** and the correct type of protective packaging.

Moisture sensitive tablet cores require advanced knowledge and experience in choosing the best process parameters.

We offer a robust film coating system which shows outstanding performance in both the laboratory and in the production environment.

To get the best out of your equipment you are welcome to use our global technical support.

Please refer to **VIVACOAT® – technical performance** in this brochure.

„Simplicity is the Ultimate Sophistication“

(Leonardo da Vinci)
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<tr>
<th>Fully Perforated Pan, Batch size 800 g</th>
<th>Cont Level [%]</th>
<th>Inlet Temp [°C]</th>
<th>Tablet Bed Temp [°C]</th>
<th>Exhaust Temp. [°C]</th>
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<tbody>
<tr>
<td>20</td>
<td>67</td>
<td>40 - 45</td>
<td>44 - 48</td>
<td>2 - 3</td>
<td>7 - 9</td>
<td></td>
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<tr>
<td>Conventional Pan, Batch size 2000 - 3000 g</td>
<td>20</td>
<td>n.a.</td>
<td>42 - 46</td>
<td>n.a.</td>
<td>10 - 15</td>
<td>ca 5</td>
</tr>
<tr>
<td>Semi Perforated Pan, Batch size 18 - 20 kg</td>
<td>20</td>
<td>68</td>
<td>40 - 45</td>
<td>46 - 49</td>
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</tr>
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</tr>
<tr>
<td>Fully Perforated Pan, Batch size 100 - 120 kg</td>
<td>20</td>
<td>68</td>
<td>40 - 45</td>
<td>46 - 49</td>
<td>180 - 190</td>
<td>2 - 3</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 300 - 400 kg</td>
<td>20</td>
<td>68</td>
<td>40 - 45</td>
<td>46 - 49</td>
<td>700 - 800</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

Solid Content 20 %
A unique appearance to further enhance your OTC or nutritional product is required. **VIVACOAT® X** is a perfect combination of extra elegance in coating and a competitive price. **VIVACOAT® X** allows the application of an excellent optical effect in two simple ways:

1. **VIVACOAT® X** as a clear elegant top coat. 
   **VIVACOAT® X** as a clear top coat on an already existing colored sub coat. Simply coat to a 0.5 % weight gain to get perfect elegance.

2. **VIVACOAT® X** as a one-step coating on an uncoated white or multi-layer tablet. Just add 0.5 % weight gain to get perfect elegance.

We offer a robust film coating system which shows outstanding performance in both laboratory and production equipment.

To get the best out of your equipment you are welcome to use our global technical support.

Please refer to **VIVACOAT®** – technical performance in this brochure.
A unique appearance to further enhance your OTC or nutritional product is required.®

VIVACOAT® X is a perfect combination of extra elegance in coating and a competitive price.®

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</tr>
</thead>
<tbody>
<tr>
<td>Fully Perforated Pan, Batch size 800 g</td>
<td>10 - 12</td>
<td>65 - 68</td>
<td>33 - 36</td>
<td>38 - 43</td>
<td>2 - 3</td>
<td>6</td>
</tr>
<tr>
<td>Conventional Pan, Batch size 2000 - 3000 g</td>
<td>10 - 12</td>
<td>n.a</td>
<td>33 - 36</td>
<td>n.a.</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Semi Perforated Pan, Batch size 18 - 20 kg</td>
<td>10 - 12</td>
<td>ca. 50</td>
<td>33 - 36</td>
<td>38 - 43</td>
<td>55</td>
<td>2.5</td>
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<tr>
<td>Fully Perforated Pan, Batch size 18 - 20 kg</td>
<td>10 - 12</td>
<td>70 - 72</td>
<td>33 - 36</td>
<td>40 - 43</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 100 - 120 kg</td>
<td>10 - 12</td>
<td>65 - 66</td>
<td>33 - 36</td>
<td>38 - 43</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 300 - 400 kg</td>
<td>10 - 12</td>
<td>65 - 66</td>
<td>33 - 36</td>
<td>38 - 43</td>
<td>600</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Solid Content 12 %
VIVACOAT® C – YOUR Formulation in OUR Production

„Simplicity is the Ultimate Sophistication“
(Leonardo da Vinci)

The other types of VIVACOAT® are designed to offer a robust coating system at a very competitive price to your product development.

VIVACOAT® C offers contract manufacturing for your already existing coating formulations.

VIVACOAT® C covers
• Contract production of your formulation
• Optional: transfer from multi-step to one-step
• Optional: improving the performance of existing coating formulations

State-of-the-Art Production Equipment

Homogeneity is the ultimate goal priority when producing a Ready-to-Use Coating System. The homogeneous distribution of liquids in a powder, and the smallest amounts of ingredients, can only be achieved by using state-of-the-art production equipment based on the latest mixing technology. Failures, especially with the distribution of the pigments, can easily be recognized on the tablet surface.

VIVACOAT® is produced with state-of-the-art equipment in a GMP environment by well-trained experts.

Batch to Batch Consistency and Color Guarantee

Color is the challenge for your coating.

Even minor changes in the color of the raw materials used can have an influence on the color of your coating. Once agreed on a specific color we guarantee that you receive the same color with every delivery.

This is controlled by IPC (in-Process Control) during the production.

During the sampling process a specific VIVACOAT® film is created as the “master”. During production every batch is compared to the original “master” batch to avoid batch to batch color variations.

With every batch we guarantee that the color of the coating on your tablets is the same as supplied in the original request.

www.jrspharma.com
Cost Reduction

Changing from an in-house formulation to a VIVACOAT® Ready-to-Use Coating.

Each of your products will have its own calculation, a part of this will be the coating.

By using VIVACOAT® Ready-to-Use Coatings you can reduce your expenditure in R&D, administration, purchasing, quality assurance and production.

Give us the opportunity to offer a high quality product from our state-of-the-art production at a very competitive price.

VIVACOAT® as an alternative to in-house coatings

Please refer to VIVACOAT® – technical performance in this brochure.

Improving coating performance with VIVACOAT®

Please refer to VIVACOAT® – technical performance in this brochure.
VIVACOAT® protect T – Taste Protection

„Simplicity is the Ultimate Sophistication“
(Leonardo da Vinci)

For best patient compliance, it is important that an oral dosage form is organoleptically neutral. To cover the bitter or unpleasant of drugs, JRS developed a taste masking ready-to-use coating VIVACOAT® protect T.

VIVACOAT® protect T is an immediate release coating with excellent taste masking properties. It is designed for pharmaceutical applications. Using conventional coating equipment, the easy application of VIVACOAT® protect T enables high spray rates and gives a competitive advantage to your product.

Please contact our global technical service for further support.
For colored tablets, pigmented VIVACOAT® A formulations are ideally suited to be used as a top-coat.

Product Performance Profile
To investigate the taste masking properties of VIVACOAT® protect T, tablets containing denatonium benzoate were coated with three coatings based on different polymers at a 4 % weight gain.

Tablets were also coated with different weight gains of VIVACOAT® protect T.

Using a panel of volunteers, time was measured from the moment the tablet was placed under the tongue until a bitter taste was reported.

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**Product Performance Profile**

**Table: Bitter tablets coated with different coatings to 4 % weight gain**

<table>
<thead>
<tr>
<th>Coating Type</th>
<th>Time [min]</th>
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<tbody>
<tr>
<td>Standard HPMC Coating</td>
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<tr>
<td>PVA Coating</td>
<td>3</td>
</tr>
<tr>
<td>VIVACOAT® protect T</td>
<td>2</td>
</tr>
</tbody>
</table>

**Diagram: Bitter tablets coated with increasing weight gain of VIVACOAT® protect T**

<table>
<thead>
<tr>
<th>Weight Gain [%]</th>
<th>Time [min]</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
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For best patient compliance, it is important that an oral dosage form is organoleptically neutral. To cover the bitter or unpleasant taste of drugs, JRS developed a taste masking ready-to-use coating VIVACOAT T.

® VIVACOAT T is an immediate release coating with excellent taste masking properties. It is designed for pharmaceutical applications. Using conventional coating equipment, the easy application of VIVACOAT T enables high spray rates and gives a competitive advantage to your product.

Please contact our global technical service for further support.

For colored tablets, pigmented VIVACOAT formulations are ideally suited to be used as a top-coat.

Product Performance Profile

To investigate the taste masking properties of VIVACOAT T, tablets containing denatonium benzoate were coated with three coatings based on different polymers at a 4 % weight gain. Tablets were also coated with different weight gains of VIVACOAT T. Using a panel of volunteers, time was measured from the moment the tablet was placed under the tongue until a bitter taste was reported.

Bitter tablets coated with increasing weight gain of VIVACOAT T:

<table>
<thead>
<tr>
<th>Weight Gain [%]</th>
<th>Time [min]</th>
</tr>
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<tbody>
<tr>
<td>0:00</td>
<td>3:00</td>
</tr>
<tr>
<td>0:30</td>
<td>2:30</td>
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<tr>
<td>1:00</td>
<td>2:00</td>
</tr>
<tr>
<td>1:30</td>
<td>1:30</td>
</tr>
<tr>
<td>2:00</td>
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**Recommended Process Parameters**

<table>
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<tbody>
<tr>
<td>Fully Perforated Pan,</td>
<td>17</td>
<td>67</td>
<td>34 - 39</td>
<td>39 - 44</td>
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<td>7 - 9</td>
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<tr>
<td>Batch size 800 g</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional Pan,</td>
<td>17</td>
<td>n.a.</td>
<td>42 - 45</td>
<td>n.a.</td>
<td>12 - 15</td>
<td>ca 5</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi Perforated Pan,</td>
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<td>70 - 80</td>
<td>42 - 44</td>
<td>60 - 65</td>
<td>45 - 50</td>
<td>3 - 4</td>
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</tr>
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<td>34 - 39</td>
<td>42 - 44</td>
<td>600 - 700</td>
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<tr>
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</table>

**Solid Content 17 %**
VIVACOAT® protect U – UV-Protection

„Simplicity is the Ultimate Sophistication“
(Leonardo da Vinci)

VIVACOAT® protect U provides an effective protection against fading of natural colors caused by UV light.

VIVACOAT® protect U is designed to diminish the light related degradation of natural colorants. Its composition is HPMC based and can be used both aqueously and in partly solvent systems.

Product Performance Profile

VIVACOAT® protect U can be applied on top of a subcoat based on natural colors (riboflavin, chlorophyll, carotin, fruit-and vegetable extracts...).
VIVACOAT ®

VIVACOAT ® protect U

VIVACOAT ® protect U provides an effective protection against fading of natural colors caused by UV light. It is designed to diminish the light-related degradation of natural colorants. Its composition is HPMC based and can be used both aqueously and in partly solvent systems.

VIVACOAT ® can be applied on top of a subcoat based on natural colors (riboflavin, chlorophyll, carotin, fruit-and vegetable extracts...).

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<td>55 - 65</td>
<td>33 - 36</td>
<td>40 - 43</td>
<td>170 - 180</td>
<td>2 - 3</td>
</tr>
<tr>
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<td>Batch size 300 - 400 kg</td>
<td></td>
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</tr>
</tbody>
</table>

Solid Content 12 %
VIVACOAT® protect W – Water Vapor Protection

„Simplicity is the Ultimate Sophistication“
(Leonardo da Vinci)

Many APIs are sensitive to moisture. Moisture can cause chemical degradation and/or physical changes to your API. This is especially problematic in areas with high humidity or when the tablets are removed from their original packaging. To improve drug stability and the shelf life of your product JRS developed an advanced moisture barrier coating VIVACOAT® protect W.

Product Performance Profile

VIVACOAT® protect W is an immediate release coating with excellent moisture protection. It is designed for pharmaceutical applications.

VIVACOAT® protect W enables high spray rates and does not cause problems with tackiness.

You are welcome to contact our global technical service for further support.

For colored tablets, pigmented VIVACOAT® A formulations are ideally suited to be used as a top-coat.
Many APIs are sensitive to moisture. Moisture can cause chemical degradation and/or physical changes to your API. This is especially problematic in areas with high humidity or when the tablets are removed from their original packaging. To improve drug stability and the shelf life of your product JRS developed an advanced moisture barrier coating VIVACOAT protect W.

VIVACOAT protect W is an immediate release coating with excellent moisture protection. It is designed for pharmaceutical applications. VIVACOAT protect W enables high spray rates and does not cause problems with tackiness.

You are welcome to contact our global technical service for further support.

For colored tablets, pigmented VIVACOAT formulations are ideally suited to be used as a top-coat.

| Moisture Uptake of Plant Extract Tablets Stored at 40 °C, 75 % R.H. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| WVTR [g/day/m²] | 600             | 500             | 400             | 300             | 200             |

**Product Performance Profile**

<table>
<thead>
<tr>
<th>Moisture Uptake [%]</th>
<th>Time [hours]</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>45</td>
<td>80</td>
</tr>
<tr>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>15</td>
<td>160</td>
</tr>
</tbody>
</table>

**Recommended Process Parameters**

<table>
<thead>
<tr>
<th></th>
<th>Recon Level [%]</th>
<th>Inlet Temp [°C]</th>
<th>Tablet Bed Temp [°C]</th>
<th>Exhaust Temp. [°C]</th>
<th>Total Spray Rate [g/min]</th>
<th>Pan Speed [rpm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Perforated Pan, Batch size 800 g</td>
<td>17</td>
<td>67</td>
<td>34 - 39</td>
<td>39 - 44</td>
<td>3 - 4</td>
<td>7 - 9</td>
</tr>
<tr>
<td>Conventional Pan, Batch size 2000 - 3000 g</td>
<td>17</td>
<td>n.a.</td>
<td>42 - 45</td>
<td>n.a.</td>
<td>12 - 15</td>
<td>ca 5</td>
</tr>
<tr>
<td>Semi Perforated Pan, Batch size 18 - 20 kg</td>
<td>17</td>
<td>70 - 80</td>
<td>42 - 44</td>
<td>60 - 65</td>
<td>45 - 50</td>
<td>3 - 4</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 18 - 20 kg</td>
<td>17</td>
<td>65 - 75</td>
<td>40 - 42</td>
<td>44 - 46</td>
<td>55 - 60</td>
<td>3 - 4</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 100 - 120 kg</td>
<td>17</td>
<td>65 - 66</td>
<td>34 - 39</td>
<td>38 - 43</td>
<td>160 - 170</td>
<td>2 - 3</td>
</tr>
<tr>
<td>Fully Perforated Pan, Batch size 300 - 400 kg</td>
<td>17</td>
<td>65 - 66</td>
<td>34 - 39</td>
<td>42 - 44</td>
<td>600 - 700</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

|                     |               |                 |                     |                   |                  |                 |
|                     |               |                 |                     |                   |                  |                 |

**Solid Content 17 %**
**VIVACOAT® protect E – Acid Protection**

**“Simplicity is the Ultimate Sophistication“**
(Leonardo da Vinci)

**VIVACOAT® protect E** is a white Ready-to-Use enteric coating system based on the globally accepted Methacrylic Acid-Ethyl Acrylate copolymer (1:1). **VIVACOAT® protect E** dissolves at pH values exceeding 5.5. It was developed to protect acid-sensitive APIs against gastric fluids. Likewise, it protects the stomach against irritating actives by delaying drug delivery until the dosage form reaches the small intestine.

The **VIVACOAT® protect E** system requires no neutralization. This enables an easy one-step reconstitution in water. Due to the high polymer content of the coating suspension, **VIVACOAT® protect E** provides short process times.

**Product Performance Profile**

**VIVACOAT® protect E** is the ideal solution for delayed release oral dosage forms. Time savings in development and production are achieved by a simple, fast and robust coating process. Also beneficial are reduced raw material inventory and QC requirements.

We recommend **VIVACOAT® PS-1P-041** as a sub-coat formulation, if the active ingredient has to be separated from the enteric polymer. For colored tablets, pigmented **VIVACOAT® A** formulations are ideally suited to be used as a top-coat.

For technical support in lab- and production scale please reach out to JRS PHARMA’s global technical team. Contact us to obtain your sample of **VIVACOAT® protect E**.

---

**USP Delayed Release Dissolution Test:**
- **100 mg Acetyl Salicylic Acid Tablets with Enteric Coating**
- **50 mg Diclofenac Tablets with Enteric Coating**

![Graph 1](image1)

![Graph 2](image2)

**Inlet Temp. [°C]**
- 58
- n.a.
- 50 - 60
- 45 - 55
- 45 - 55
- 45 - 55
- 45 - 55
- 45 - 55

**Tablet Bed Temp. [°C]**
- 30 - 33
- 35 - 38
- 32 - 34
- 30 - 33
- 30 - 33
- 30 - 33
- 30 - 33

**Exhaust Temp. [°C]**
- 35 - 38
- n.a.
- 46 - 49
- 42 - 44
- 42 - 44
- 42 - 44
- 42 - 44

**Total Spray Rate [g/min]**
- 2 - 3
- 10 - 15
- 55 - 60
- 60 - 70
- 180 - 190
- 700 - 800

**Pan Speed [rpm]**
- 7 - 9
- ca 5
- 3 - 4
- 3 - 4
- 2 - 3
- 1 - 2

**Recon Level [%]**
- 20
- 20
- 20
- 20
- 20
- 20
- 20
**Product Performance Profile**

**® VIVACOAT protect E**

is a white Ready-to-Use enteric coating system based on the globally accepted Methacrylic Acid-Ethyl Acrylate copolymer (1:1).

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Contact us to obtain your sample of VIVACOAT protect E.

---

**USP Delayed Release Dissolution Test:**

100 mg Acetyl Salicylic Acid Tablets with Enteric Coating

0-120 min: 0.1N HCl

120-180 min: Phosphate Buffer pH 6.8

**USP Delayed Release Dissolution Test:**

50 mg Diclofenac Tablets with Enteric Coating

0-120 min: 0.1N HCl

120-180 min: Phosphate Buffer pH 6.8

---

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<td></td>
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**Solid Content 20 %**
The Technical Performance of **VIVACOAT**®

- Highest quality
- Robust formulations for lab and production scale
- Free global technical service
- Professional formulation development
- Professional color management

**VIVACOAT**® is a robust film coating system which shows outstanding performance in both your lab and production environment.

To achieve the best possible results if using **VIVACOAT**® in your own equipment you are welcome to use the services of our highly experienced global technical support. Our experts can support you, at your own facility, free of charge whenever performing trials with **VIVACOAT**®.

**Technical Service**

The coating process is the final step of the value creation chain in your production. Therefore, the entire product value is endangered by the coating process.

Coating tablets is a dynamic procedure with many parameters which are linked together. Achieving good results requires a process that does neither promote over-wetting nor spray drying. Beside well-adjusted process parameters a high-quality film coating system is required.

**Free technical support with VIVACOAT®**

- Small scale coating trials
- Assistance in optimization of your Production coating process
- Film coating training courses at
  - JRS Coating labs
  - Your own facility
  - Seminars held all over the world
Formulation Development

For new coating projects we offer a formulation development service. Well-trained and experienced experts will develop a robust coating formulation for you, meeting the functionality and color you have requested, which works under lab conditions as well as in your production environment.

How to get a "customized" VIVACOAT® sample

To request a VIVACOAT® sample, please contact your local JRS partners. They will guide you through the sample request form in order to collect all the important information we need to develop your customized VIVACOAT®.

Our global technical service covers:

- Formulation development adhesion, protection against moisture, oxygen, bad taste...
- Coating trials
- Colormatch considering regulatory environment
- Contract manufacturing your inhouse formulation in our production
- Customer seminars
- Film coating training courses in your facility / in our lab
**VIVACOAT® – Technical Performance**

**Application Support**

We want **VIVACOAT®** to perform perfectly on your tablet. To get the best out of your equipment you are welcome to use our technical support.

Benefit from our global experience

- Application labs in Germany, USA and many more
- Experienced experts
- Lab coating equipment starting with 700 g batch size

**Process Parameters**

With every sample we provide you with specific process parameters recommended for lab equipment. As part of our application support, our experts can recommend process parameters for your production equipment as well.

**VIVACOAT®** is an aqueous film coating system. If you are using organic solvents (e.g. alcohol) please inform us already when asking for a sample. Process parameters change depending on solvent.

When changing from an in-house coating to **VIVACOAT®** Ready-to-Use Coating System, please keep in mind that the suspensions have to be prepared in a different but very easy way. How to prepare **VIVACOAT®** is shown in the following reconstitution profile.
We want to perform perfectly on your tablet.

®

VIVACOAT

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Process Parameters
®

VIVACOAT – Technical Performance

Application Support

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With every sample we provide you with specific process parameters recommended for lab equipment. As part of our application support, our experts can recommend process parameters for your production equipment as well.

Reconstitution Procedure with Propeller Stirrer

1. The diameter (dp) of the stirrer blades should be 30 % – 50 % of the vessel.
2. Do not use a high shear mixer or a magnetic stirrer.
3. Create a deep vortex in the calculated amount of water.
4. Adjust the rotation speed to avoid pulling air into the water.
5. Add the calculated amount of VIVACOAT® directly into the center of the vortex.
6. The suspension is ready to use after 45 minutes of stirring.

\[ d_p = \frac{1}{2} - \frac{1}{3}d \]
**VIVACOAT® – Technical Performance**

**High Quality**

2 production sites:
- JRS PHARMA Germany, Weissenborn
- JRS PHARMA USA, Patterson

**VIVACOAT®** provides high performance on your tablet. It has been designed as a Ready-to-Use film coating System including all of the necessary excipients to create a high quality film.

**Expertise**

**VIVACOAT®** is designed to perform with a wide range of film coating equipment to meet your specific requirements. Our experienced coating experts guarantee a high quality product. During the production of **VIVACOAT®** the color is matched by our experts.

**Selection of ingredients**

The components of **VIVACOAT®** are chosen under specific criteria:
- Regulatory acceptance in the target countries
- Full documentation
- Approved and qualified suppliers
- Approved security of supply

Complex formulations require complex parameters and conditions. **VIVACOAT®** is designed to work reliably in your equipment. We choose high quality components which promote reliability.

**State-of-the-art production equipment**

Homogeneity is the priority when producing a Ready-to-Use Coating System. The homogeneous distribution of liquids in a powder, and the smallest amounts of ingredients, can only be achieved by using state-of-the-art production equipment using the latest mixing technology. Failures, especially with the distribution of the pigments, can easily be recognized on the tablet surface.

**VIVACOAT®** is produced with state-of-the-art equipment in GMP environment by well-trained experts.

Our sample production equipment is harmonized with our commercial production equipment to guarantee the same color and performance of commercial quantities of **VIVACOAT®** to the samples provided before.
Choosing a color
The appearance of a tablet represents the product quality.

What makes a tablet good-looking?

• Smoothness of the surface
  The final appearance of a tablet depends on the quality of the initial tablet surface. For example a film coating on an uneven tablet surface will still appear uneven.

• Gloss
  The smoother the initial tablet surface, the higher the gloss. A shiny tablet gives the impression that it is easier to swallow.

• Color
  The selection of color is subject to market trends. Regulatory restrictions in the target markets and stability of the pigments used have to be taken into consideration.

Doing a colormatch
Matching a color to customize VIVACOAT®.

Requirements
A sample of coated tablets or a color reference from a standardized color guide, (we recommend PANTONE® Color Guide, Solid uncoated). In the case of sending us a color reference without a tablet sample, please confirm the color of the tablet core as well. Particularly dark cores can influence the final appearance of light colored coatings.

In a case where the final color has not yet been decided, but you want to test the functionality of the coating in advance, we recommend that a VIVACOAT® basic color (clear, white, yellow, red, green or blue) will be tried first.

How to judge a color
The visual perception of a color is dependent on the illumination of the object. The color spectrum of the ambient light has an influence on the appearance of the color (this is called Metamerism). Whenever possible please use daylight (5300 – 6500 Kelvin) when checking colors.

Other factors on the appearance of the color
Gloss and surface
In a direct comparison conditions of the same color on objects with differing surfaces, they may appear different. Therefore the color of VIVACOAT® can only be judged as a film on your tablet in daylight conditions.

Batch to batch color consistency & color guarantee
Color is the challenge for your coating. Even minor changes in the color of the raw materials used can have an influence on the color of your coating.

Once agreed on a specific color we guarantee that you receive the same color with every delivery. This is controlled by IPC (In-Process Control) during the production.

Out of the produced sample, a specific VIVACOAT® film is created as the “master”. During production every batch is compared to the original “master” batch to avoid batch to batch color variations.

With every batch we guarantee that the color of the coating on your tablets is the same as supplied in the original request.
Form of Delivery

Packaging

VIVACOAT® is available in 25 kg PE inlined cartons.

For details, please contact
JRS PHARMA customer service:
E-mail: filmcoating@jrspharma.de

Sample Size

Sample in plastic can 500 g, with PE inliner and re-usable cable ties

Free Product Samples TEST IT NOW !!!
Looking for polymers for coating?

**VIVAPHARM® HPMC**

**VIVAPHARM® PVA**

Contact Headquarters Germany

JRS PHARMA GMBH + CO KG
Business Unit Coatings & MR Technologies

Email: Filmcoating@JRSPharma.de
Phone: +49 7967 152-444
The Global Excipient Maker

Global Network

GMP Manufacturing and Service Sites

- Excipients
- Coatings
- Biopharma Services

- JRS Sales Companies (Additionally, dedicated representatives in almost every country.)
- Technical Competence Centers
- Application Labs

High Functionality Excipients

Mineral Based Excipients

Polymers

Superdisintegrants

Functional Fillers

Lubricants

Binders

Coatings

Carriers

Thickener + Stabilizer

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