



# 4DryField® PH

PROVIDES HEMOSTASIS – PREVENTS ADHESIONS

Worldwide unique: CE-certified and clinically proven for  
**Adhesion prevention & Hemostasis**

SIMPLE. SAFE. EFFECTIVE.  
No human or animal components.



# Adhesions

Common, chronic and costly

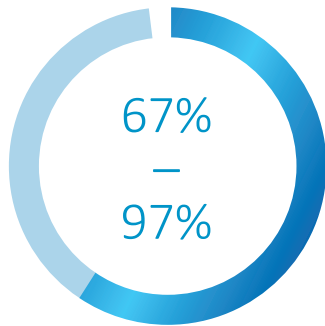
## Causes of adhesions

- Surgical trauma<sup>1,2</sup>
- Inflammation<sup>1,2</sup>
- Endometriosis<sup>1,2</sup>

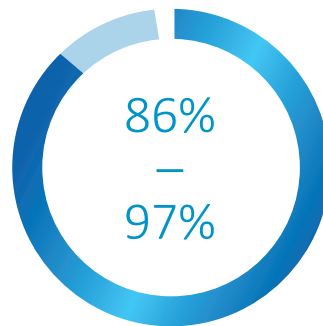
## Clinical consequences

- Main cause of chronic pain<sup>3</sup>
- Main cause of secondary female infertility<sup>3,4,5</sup>
- Main cause of small bowel obstructions<sup>3,4,5</sup>
- Re-operations (in ~35 % of patients within 10 years)<sup>5,6</sup>

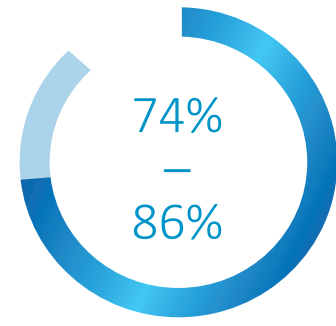
### Incidence of postoperative adhesions<sup>7,8</sup>



### Incidence after adhesiolysis<sup>8,9</sup>



### Main cause of small bowel obstructions<sup>10,11</sup>



## Economic consequences

 ~30 min longer  
**operation time**<sup>5,12</sup>

 severe **burden**  
for patient and surgeon<sup>5,12-14</sup>

 significant **costs**  
for the healthcare system<sup>5,12-17</sup>

 44.3% of **readmissions**  
directly or possibly related to adhesions<sup>5</sup>

# Clinically proven efficacy

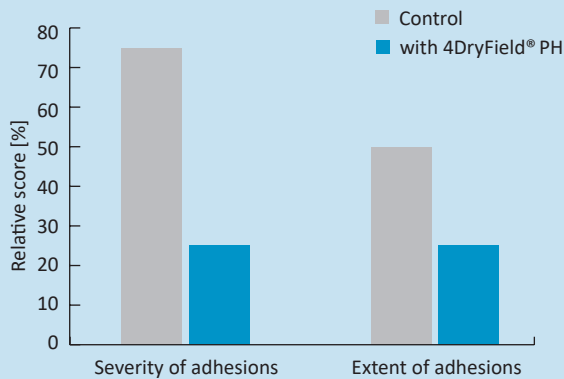
Confirmed in numerous clinical studies



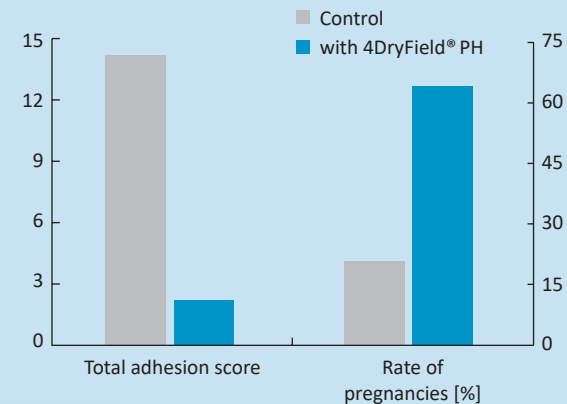
## 4DryField® PH gel as a mechanical barrier for adhesion prevention

**Controlled, clinical studies with 2<sup>nd</sup> looks show:  
Adhesion formation and fertility rates are significantly improved**

In gynecological adhesiolysis (Ziegler & De Wilde 2022)



In endometriosis surgery (Krämer et al. 2021, 2023)



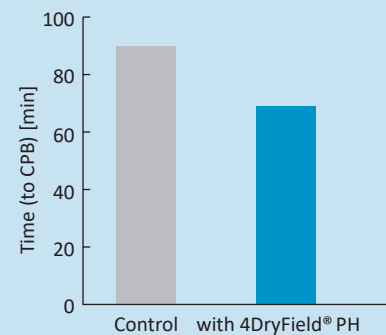
*“Adhesion formation could be reduced significantly by 85% by application of the adhesion barrier 4DryField® PH.”*  
Krämer et al. 2021 Langenbecks Arch Surg

*“The modified starch-based device 4DryField® gave remarkable results for an absorbable barrier.”*  
Krämer et al. 2021 Surg Technol Int

*“During the follow-up, none of the patients experienced a recurrent obstruction episode. This is a remarkable result.”*  
Ahmad & Crescenti 2019 Surg J

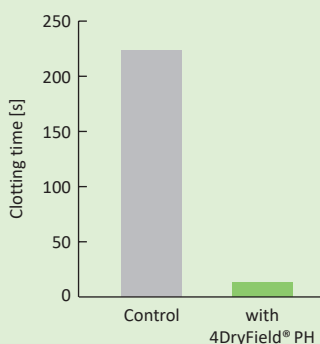
*“4DryField® PH in-situ-mixed gel reduced adhesions significantly better than Adept®, Interceed® and Seprafilm®.”*  
Poehnert et al. 2016 Int J Med Sci

Significantly reduced re-operation time in a controlled pediatric heart surgery study (Cesnjevar et al. 2022)

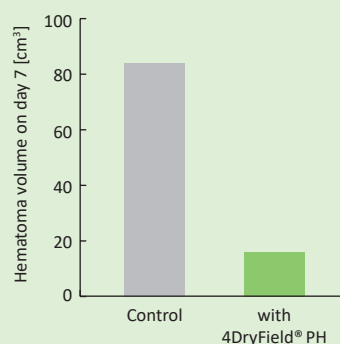


## 4DryField® PH powder for accelerated and improved hemostasis

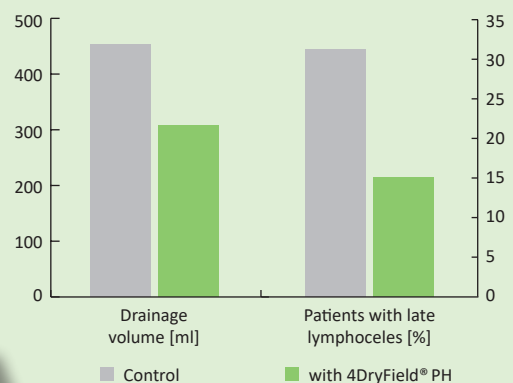
Significantly accelerated blood clotting even in diluted blood (Hanke et al. 2011)



Significantly reduced hematoma formation in clinical orthopedic study (Riebau et al. 2018)



Lymphostatic capabilities of 4DryField® PH after lymph node resection according to a clinical study with >100 patients (Karsch et al. 2016)



*“the modified polysaccharide powder was capable of achieving fast hemostasis of the diffuse bleeding, avoiding coagulation”*  
Torres-de la Roche et al. 2020 Arch Gynecol Obstet

# A variety of benefits

Versatile, simple, safe and effective

## SIMPLE

### Ready to use

### Easy application

No special storage conditions

Simple and fast laparoscopic application with **4DFLap™**

## SAFE

### Purely plant-based

- No human or animal components
- No risk of disease transmission

### Excellent tolerability<sup>1</sup>

- Not cytotoxic
- Up to 1 g/kg body weight is well tolerated
- Does not enhance viability of tumor cells
- Promotes recovery

### Free of pyrogens<sup>2</sup>

### Resorbed within 7 days<sup>1</sup>

### No documentation requirement as per German Transfusion Law

### Also suitable for pediatrics

## EFFECTIVE

### Immediate hemostasis<sup>3-14</sup>

### Highly effective adhesion prevention<sup>8-24</sup>

1 g of **4DryField® PH** is enough for ~25 cm<sup>2</sup>

## Further advantages

- ▶ no recurrent small bowel obstructions<sup>19</sup>
- ▶ shorter re-interventions<sup>23</sup>
- ▶ fewer hematomas<sup>6</sup>
- ▶ fewer lymphoceles<sup>4</sup>
- ▶ avoids cauterization<sup>7,12,13</sup>
- ▶ increases fertility<sup>7,22</sup>



## 4DryField® PH

Catalog number	Contents
SK0001-EU	5 x 1 g
SK0003-EU	3 x 3 g
SK0005-EU	3 x 5 g
SK0009-EU	3 x 9 g

## 4DFLap™ applicator



For laparoscopic procedures  
Ergonomic handpiece  
Flexible inner hose with memory effect  
Suitable for current trocars from 5 mm

Catalog number	Contents
LA0014-EU	14 cm
LA0038-EU	38 cm

For further information and videos, please visit  
<https://planttec-medical.de/en/>

**4DryField® PH** and **4DFLap™** should not be exposed to extreme temperatures or direct light irradiation. Keep under normal hospital storage conditions.

Please find further information in the instructions for use at [www.planttec-medical.de](http://www.planttec-medical.de)



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1. Poehnert et al. 2015 J Biomater Appl, 2. Bioserv 2016 Study Report, 3. Hanke et al. 2011 ASA Meeting, 4. Karsch et al. 2016 Adv Urol, 5. Sieg et al. 2017 ARC J Anesthesiol, 6. Lucas et al. 2021 BMC Musculoskel Dis, 7. Moszynski et al. 2023 Medicina, 8. Korell 2014 Surgical Science, 9. Korell et al. 2016 Biomed Res Int, 10. Poehnert et al. 2015 Eur Surg Res, 11. Ziegler et al. 2016 J Med Case Rep, 12. Watrowski 2020 J Obstet Gynaecol, 13. Torres-de la Roche et al. 2020 Arch Gynecol Obstet, 14. Ziegler & De Wilde 2022 J Obstet Gynaecol, 15. Poehnert et al. 2016 Int J Med Sci, 16. Winny et al. 2016 Am J Transl Res, 17. Winny et al. 2016 Int J Med Sci, 18. Blumhardt et al. 2018 Case Rep Surg, 19. Ahmad & Crescenti 2019 Surg J, 20. Poehnert et al. 2019 Int J Med Sci, 21. Krämer et al. 2021 Langenbeck's Arch Surg, 22. Krämer et al. 2023 J Clin Med, 23. Cesnjevar et al. 2022 PLoS ONE, 24. Poehnert et al. 2023 MedRxiv

