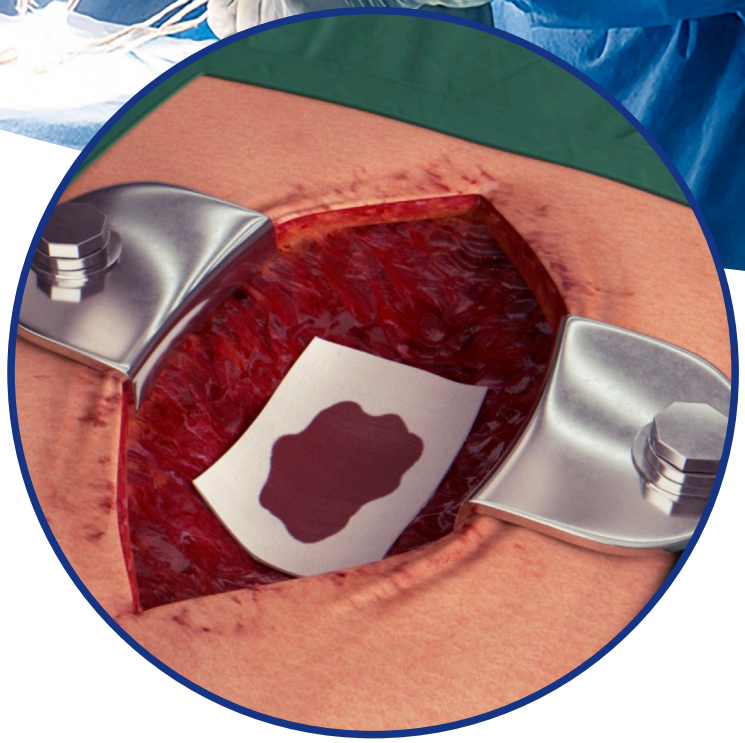
OKCEL®

OFFERING MORE

ABSORBABLE OXIDIZED CELLULOSE HAEMOSTATS

EFFECTIVE IN ACTION.
SAFE FOR THE BODY.



Synthesia
nitrocellulose

Synthesia Nitrocellulose, a.s.

Synthesia Nitrocellulose, a.s. continues a tradition of more than one hundred years of cellulose derivatives production at the SemtinZone site in Pardubice. With the establishment of an independent subsidiary in 2024, we gained the space to focus exclusively on this specialized production segment.

One of our branches is the production of oxidized cellulose for medical purposes. Our products, available in textile knitted and fibrous form, are the result of many years of development and meet the highest demands of modern medicine.

OKCEL® - a clinically proven solution that is synonymous with reliability, safety and effectiveness.

Under the OKCEL® brand, we supply top-quality haemostats made of non-regenerated oxidized cellulose that help surgeons around the world every day to effectively and safely stop bleeding during open and minimally invasive procedures, where speed and precision can make all the difference.

Superior haemostasis and bio-degradability – maximum performance, high compatibility.

OKCEL® is the ultimate solution for quickly stopping bleeding. **Haemostasis can be achieved in under 1.5 minutes**[3], with the product subsequently **absorbed** and removed from the body **usually within 14 days**[3, 4] with practically no tissue reaction, depending on the quantity of product used, the level of blood saturation and the character of tissue.

OKCEL® products have proven **antimicrobial effects** on a large spectrum of pathogens[5] (including antibiotic resistant bacteria MRSA, PRSP, VRE, MRSE) and thus help with tissue regeneration.

Premium cotton. Premium care. 100% natural material for maximum safety.

OKCEL® is produced by selective oxidation of the finest extra-long staple cotton. It offers more than just effective bleeding control – it also provides maximum **biocompatibility** with the human body. Completely **biodegradable** and **bioresorbable**, this cutting-edge solution offers the perfect blend of advanced technology and nature's purity.

Broad portfolio. The only goal – a safe procedure.

OKCEL® is designed to control internal capillary, venous and minor arteriolar bleeding during a wide range of surgical procedures, including minimally invasive procedures, in which conventional haemostatic measures such as sutures or ligatures are ineffective or unfeasible[2]. **A wide product portfolio allows you to select the right solution for your specific surgical procedure.**

Certified quality you can rely on.

OKCEL® is a class III medical device and as such meets the highest standards of safety and effectiveness – exactly where it matters most. Our quality management system has been designed to maximize overall efficiency throughout the process chain, increase customer satisfaction and meet the requirements of the international standard ISO 13485: 2016 and the European Medical Device Regulation 2017/745 (MDR).

OKCEL® = wide range of uses

Product type	Description	Handling	Indication
OKCEL® H-T	knitted regular density textile form	can be easily cut without fraying	control of capillary, minor venous and minor arteriolar bleeding
		easy (re)positioning at the bleeding site	
OKCEL® H-D	knitted high density textile form	can be rolled	control of higher volume capillary, venous and arteriolar bleeding
	higher thickness	does not stick to instruments	
	improved endurance	no memory effect	
	better efficiency		
OKCEL® F	non-woven cotton wool form	can be easily shaped into a ball or a roll	control of bleeding over large areas
	multi-layered structure	any layer can be easily separated for different intensities of bleeding	
	reduced weight	easy (re)positioning at the bleeding site	
	extreme absorbency	does not stick to instruments	for topical applications to irregularly shaped bleeding sites or difficult to access areas
	improved adherence	no memory effect	
	extreme flexibility		
OKCEL® S	strengthened non-woven cotton wool form	does not stick to instruments	control of capillary, venous and arteriolar bleeding
	higher absorbency against standard form	easy (re)positioning at the bleeding site	
	superior handling	easy application through a laparoscopic trocar	suitable for laparoscopic use
		no memory effect	

OKCEL® = easy-to-handle packaging

- compliance with the highest standards for medical device packaging
- easy handling and opening (a peel-effect on both primary and secondary pouches)
- superior protection over a whole shelf life period and outstanding resistance to microbial penetration (even the primary pouch is sealed)
- minimum risk of package failure
- all the relevant information for users clearly provided
- practical suture box consisting of sealed primary and secondary pouches, IFU and implant cards along with self-adhesive triple-stickers that serves as a readily accessible reference for both the patient and healthcare professionals about the implantable medical device

OKCEL® = proven antimicrobial properties

The bactericidal and bacteriostatic properties of OKCEL® are another positive effect that the use of our products brings to topical haemostasis. The antimicrobial effect of OKCEL® products on a large spectrum of pathogens is caused by the formation of low pH environment around the wound. The lower pH levels inhibit the growth and multiplication of Gram-negative and Gram-positive bacteria, including both aerobic and anaerobic strains. This **efficiency has been confirmed against 36 strains, including antibiotic-resistant bacteria** (MRSA, PRSP, VRE, MRSE)[5].

OKCEL® = offering more

The most widely used biodegradable haemostatic agent is oxidized regenerated cellulose (ORC). OKCEL® as non-regenerated oxidized cellulose (ONRC) has very similar characteristics and practically the same indication but may vary in some parameters important for its clinical use.

Premium raw material

OKCEL® is produced from **pure extra-long staple (ELS) cotton of the highest quality** which is only mechanically pre-treated and bleached, while ORC is made of viscose obtained by chemical modification of cellulose.

Easier re-positioning with no memory effect

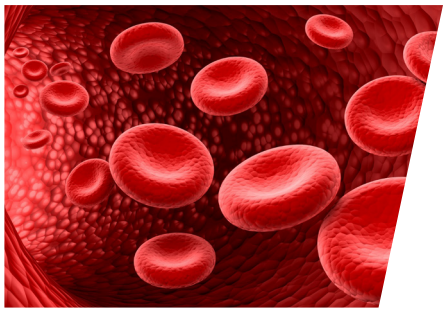
Excellent shape stability and slower gelatination of ONRC allows the haemostatic material to be further manipulated and relocated even after placement in a bleeding site. This **significantly simplifies material handling during surgical procedures**.[6]

Superior bio-resorbability/ bio-degradability

The in-vitro bioresorbability simulation tests demonstrated **better disintegration of ONRC**, whereas ORC formed a compact clot of material that could in-vivo cause a foreign-body granuloma imitating different pathological conditions, thereby complicating the post-surgical imaging.[6]

Equivalent bactericidal effect

Despite a slight difference in the acidity of ORC and ONRC, **no difference in bactericidal effect** was observed.[7]

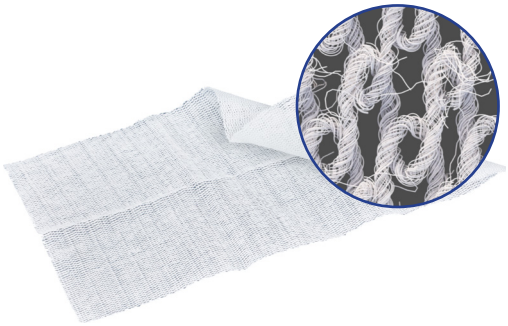


Superior haemostasis

As it has been proven in comparative in-vivo models, ONRC provides **superior haemostasis** thanks to its frayed fibres which create a greater surface area.[7]

OKCEL® = wide portfolio range

BASIC PRODUCT LINE



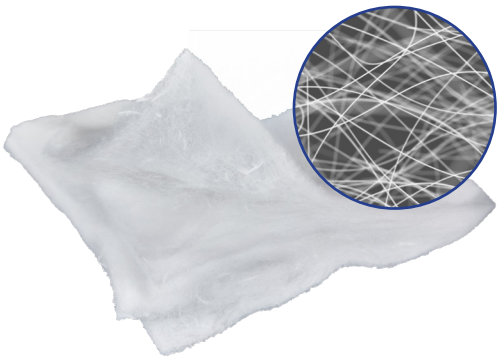
OKCEL® H-T original textile form of oxidized cellulose

Item	Format size	Packaging (pcs/sales unit)
OKCEL H-T 151	1.5 × 1.5 cm	40
OKCEL H-T 501	5 × 1.25 cm	15
OKCEL H-T 507	5 × 7 cm	15
OKCEL H-T 510	7 × 10 cm	15
OKCEL H-T 535	5 × 35 cm	10
OKCEL H-T 540	10 x 20 cm	10

OKCEL® H-D heavy duty textile form of oxidized cellulose

Item	Format size	Packaging (pcs/sales unit)
OKCEL H-D 202	2.5 × 2.5 cm	15
OKCEL H-D 209	2.5 × 9 cm	15
OKCEL H-D 575	5 × 7.5 cm	10
OKCEL H-D 710	7 × 10 cm	10
OKCEL H-D 1420	14 × 20 cm	10

ADVANCED PRODUCT LINE



OKCEL® F fibrillar cotton wool form of oxidized cellulose

Item	Format size	Packaging (pcs/sales unit)
OKCEL F 205	2.5 × 5 cm	10
OKCEL F 575	5 × 7.5 cm	10
OKCEL F 510	5 × 10 cm	10
OKCEL F 1010	10 × 10 cm	10
OKCEL F 1020	10 × 20 cm	10

OKCEL® S strengthened cotton wool form of oxidized cellulose

Item	Format size	Packaging (pcs/sales unit)
OKCEL S 205	2.5 x 5 cm	10 **Ideal for laparoscopy**
OKCEL S 505	5 x 5 cm	10 **Ideal for laparoscopy**
OKCEL S 510	5 x 10 cm	10
OKCEL S 1010	10 × 10 cm	10

Distributed by

Contacts
Synthesia Nitrocellulose, a.s.
Semtin 103
530 02 Pardubice
Czech Republic

Oxycellulose Sales Department
phone: +420 466 824 503
+420 466 824 502
e-mail: oxycellulose@synthesia.eu
www.okcel.eu

References:

1. Based on biocompatibility testing of OKCEL® products in accordance with EN ISO 10993. Data on file: 18640-033. 2. Based on OKCEL® instructions for use. Data on file: 18640-033. 3. Jindřich Lahovský, MD. Evaluation of efficacy and safety of medical devices series OKCEL®. Study Report Ref. No AP-SY-1501. Data on file: 18640 – 033. 4. Jindřich Lahovský, MD. Evaluation of efficacy and safety of the medical device OKCEL® S. Study Report Ref. No AP-SY-1701. Data on file: 18640 – 033. 5. Ing. Iveta Brožková, Ph. D. Department of Biological and Biochemical Sciences at the Faculty of Chemical Technology, University of Pardubice. Final report on testing the antimicrobial activity of the product OKCEL®. Data on file: 18640 - 034. 6. Jindřich Lahovský, MD. Závěrečná zpráva laboratorního vyhodnocení vlastností hemostatik na bázi oxidované regenerované a neregenerované celulózy. Study Report Ref. No. AP-SY-1901. Data on file: 18640 – 034. 7. K. M. Lewis, DVM, D. Spazierer, PhD, M. D. Urban, HT (ASCP), L. Lin, PhD, H. Redl, PhD, A. Goppelt, PhD: Comparison of regenerated and non-regenerated oxidized cellulose hemostatic agents. [on-line]. Eur Surg. 2013; 45(4): 213–220. Available on: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3739866/

IMPORTANT: Please refer to the package insert for complete instructions, contraindications, warnings and precautions. Subject to technical changes. All rights reserved. Unauthorized reproduction of the whole or any part of this catalogue is strictly prohibited.

MDR (EU) 2017/745 certified

MDSAP MEDICAL DEVICE SINGLE AUDIT PROGRAM

88630_011_3, September 2025