



# Avitene™ Microfibrillar Collagen Hemostat

Benefits of use in neurosurgery



# Effective with no swelling

Avitene™ MCH is a simple, safe, effective and easy to use hemostat to control bleeding during surgery.<sup>1,2</sup>

It has been used confidently by surgeons for its safety and efficacy for more than 40 years in over 50 countries worldwide,<sup>1,3</sup> and may have benefits over other commonly used hemostatic agents.<sup>4,5</sup>

Unlike many alternatives, such as bovine gelatin and oxidized regenerated cellulose (ORC), Avitene™ does not swell after implantation, so will not cause delayed compression in confined areas where small vessels, nerves or other delicate structures are present.<sup>2,3,6,7</sup>



## Versatile forms



### Avitene™ Sheets

Composed of non-woven Avitene™ collagen fibrils in a sheet form which may be cut into any shape or size, the sheet clings tenaciously to the bleeding point.<sup>2,8</sup>

Avitene™ sheets are highly versatile, and are commonly used in intracranial and skull base surgery, e.g. tumour removal and neurovascular surgery:<sup>3</sup>

- They allow precise placement and the ability to use small sections of the sheet.<sup>9</sup>
- The application does not require any pressure/tamponading to keep the sheets in place.

- The sheets are very soft against delicate vessels and structures and do not swell.<sup>2,3,6,7</sup>
- Hemostasis is usually achieved after 30 seconds or in less than three minutes.<sup>3,10</sup>
- Unlike other hemostats the tissue does not discolour when in contact with Avitene™.<sup>3</sup>



### Avitene™ Microfibrillar Collagen Hemostat

A soft, fluffy, mouldable form of microfibrillar collagen which is effective in controlling arterial hemorrhage.<sup>11</sup> It conforms and adheres to irregular spaces and it's easy to remove with gentle irrigation if needed.<sup>11,12</sup>



### SyringeAvitene™ Applicators

Pre-filled syringe designed for use in trauma, oncology, general and cardiovascular surgery.<sup>8</sup>



### Avitene™ UltraFoam™ Collagen Sponge

Soft, pliable and ready to use out of the package without soaking or waste.<sup>2,8</sup> Available in both 3 mm, 7 mm and 10 mm thickness options which may be cut and shaped to suit your needs.<sup>2,13</sup>



**Avitene™ vs competitors**<sup>5,9,14-16</sup>

	Avitene™	FloSeal (Gelatin matrix)	Surgicel® (ORC)
No swelling	✓	X	X
No risk of compression injury	✓	X	X
No thrombin	✓	X	✓
Sheets can be cut for precision and easy manipulation	✓	X	✓
No abscess type appearance on postoperative imaging	✓	X	X
No interference with bone healing	✓	✓	X
Easy to remove without risk of rebleeding	✓	✓	✓
Can be used with other hemostatic agents	✓	✓	X
Ready to use	✓	X	✓

# Ordering information

## Avitene™ UltraFoam™ Collagen Sponge

Cat. no.	Qty.	Description
1050020	12/cs.	2.0 cm x 6.25 cm x 7 mm (12.5 sq cm ¾" x 2½" x ¼")
1050030	6/cs.	8.0 cm x 6.25 cm x 1 cm (50 sq cm 3½" x 2½" x ¾")
1050040	6/cs.	8.0 cm x 12.5 cm x 1 cm (100 sq cm 3½" x 5" x ¾")
1050050	6/cs.	8.0 cm x 12.5 cm x 3 mm (100 sq cm/thin 3½" x 5" x ⅛")

## SyringeAvitene™ Applicators

Cat. no.	Qty.	Description
1010340	6/cs.	1 gram SyringeAvitene™ Collagen, 1 gram preloaded flour, 2 cm (0.8") diameter, 16.5 cm (6.5") usable length

## Avitene™ Microfibrillar Collagen Hemostat

Cat. no.	Qty.	Description
1010010	6/cs.	0.5 gram
1010020	6/cs.	1 gram
1010590	2/cs.	5 gram

## Avitene™ Sheets (Non-woven web)

Cat. no.	Qty.	Description
1010080	6/cs.	3.5 cm x 3.5 cm (1.4" x 1.4")
1010090	6/cs.	7.0 cm x 3.5 cm (2.8" x 1.4")
1010110	6/cs.	7.0 cm x 7.0 cm (2.8" x 2.8")

To learn more, contact your local BD sales representative or call BD customer service at 800-556-6275.

**References:** 1. Fujimoto Y, Kobayashi T, Komori M, et al. Modified hemostatic technique using microfibrillar collagen hemostat in endoscopic endonasal transsphenoidal surgery: technical note *neuro med chir (Tokyo)*. 2014;54(8):617–621. 2. Avitene™ Instructions For Use. 3. BD Data on file. 4. Palm MD, Altman JS. Topical hemostatic agents: a review. *Dermatol Surg*. 2008;34(4):431-445. 5. Sundaram CP, Keenan AC. Evolution of hemostatic agents in surgical practice. *Indian J Urol*. 2010;26(3):374–378. 6. Apel-Sarid L, Cochrane DD, Steinbok P, et al. Microfibrillar collagen hemostat–induced necrotizing granulomatous inflammation developing after craniotomy: a pediatric case series: Report of 3 cases. *J Neurosurgery* 2010;6(4):385-392. 7. Schonauer C, Tessitore E, Barbagallo G, Albanese V, Moraci A. The use of local agents: bone wax, gelatin, collagen, oxidized cellulose. *Eur Spine J*. 2004;13(Suppl 1):S89-96. 8. US Avitene™ Brochure HP198310-3. 9. Schreiber MA, Neveleff DJ. Achieving hemostasis with topical hemostats: making clinically and economically appropriate decisions in the surgical and trauma settings. *AORN J*. 2011;94(5):S1-20. 10. Qerimi B, Baumann P, Hüsing J, Knaebel HP, Schumacher H. Collagen hemostat significantly reduces time to hemostasis compared with cellulose: COBBANA, a single-center, randomized trial. *Am J Surg*. 2013;205(6):636-641. 11. Abbott WM, Austen WG. The effectiveness and mechanism of collagen-induced topical hemostasis. *Surgery*. 1975;78(6):723-729. 12. Avitene™ Ultrafoam™ Instruction For Use. 13. Vyas KS, Saha SP. Comparison of hemostatic agents used in vascular surgery. *Expert Opin Biol Ther*. 2013;13(12):1663-1672. 14. Sirlak M, Eryilmaz S, Yazicioglu L, et al. Comparative study of microfibrillar collagen hemostat (Colgel) and oxidized cellulose (Surgicel) in high transfusion-risk cardiac surgery. *J Thorac Cardiovasc Surg*. 2003;126(3):666-670. 15. Lee IY, Sawaya R, Levine NB. *Intraoperative non-hematologic adjuvant methods for preventing blood loss*. <https://neupsykey.com/intraoperative-non-hematologic-adjuvant-methods-for-preventing-blood-loss>. Published Jul 11, 2016. Accessed June 7, 2019. 16. FloSeal Instructions For Use.

**Indications:** Avitene™ Microfibrillar Collagen Haemostat (MCH) and Avitene™ UltraFoam™ sponge are used in surgical procedures as an adjunct to haemostasis when control of bleeding by ligature or conventional procedures is ineffective or impractical. **Contraindications:** Avitene™ MCH and Avitene™ UltraFoam™ sponge should not be used in the closure of skin incisions as it may interfere with the healing of the skin edges. This is due to simple mechanical interposition of dry collagen and not to any intrinsic interference with wound healing. It has been reported with other collagen haemostatic agents, that by filling porosities of cancellous bone, they may significantly reduce the bond strength of methylmethacrylate adhesives. Avitene™ MCH and Avitene™ UltraFoam™ sponge should not, therefore, be employed on bone surfaces to which prosthetic materials are to be attached with methylmethacrylate adhesives. **Warnings:** Avitene™ MCH and Avitene™ UltraFoam™ sponge are inactivated by autoclaving. Ethylene oxide reacts with bound hydrochloric acid to form ethylene chlorohydrin. These devices have been designed for single use only. Reuse, reprocessing, resterilisation or repackaging may compromise the structural integrity and/or essential material and design characteristics that are critical to the overall performance of the device and may lead to device failure which may result in injury to the patient. Reuse, reprocessing, resterilisation or repackaging may also create a risk of contamination of the device and/or cause patient infection or cross infection, including, but not limited to, the transmission of infectious diseases from one patient to another. Contamination of the device may lead to injury, illness or death of the patient or end user. Opened, unused product should be discarded. Moistening Avitene™ MCH and Avitene™ UltraFoam™ sponge or wetting with saline or thrombin impairs its haemostatic efficacy. It should be used dry. As with any foreign substance, use of Avitene™ MCH and Avitene™ UltraFoam™ sponge in contaminated wounds may enhance infection. Avitene™ UltraFoam™ sponge should not be used in instances of pumping arterial haemorrhage. Avitene™ UltraFoam™ sponge should not be used where blood or other fluids have pooled, or in cases where the point of haemorrhage is submerged as it may mask an underlying source of bleeding, resulting in haematoma. Avitene™ UltraFoam™ sponge is not intended to treat systemic coagulation disorders. Avitene™ MCH and Avitene™ UltraFoam™ sponge are not for injection, intraocular or intravascular use. **Adverse reactions:** The most serious adverse reactions reported which may be related to the use of Avitene™ MCH or other collagen products are potentiation of infection including abscess formation, haematoma, wound dehiscence and mediastinitis. Other reported adverse reactions possibly related are adhesion formation, allergic reaction, foreign body reaction and subgaleal seroma (report of a single case) and increased the incidence of alveolgia when used for packing of dental extraction sockets. Transient laryngospasm due to aspiration of dry material has been reported following use of Avitene™ MCH in tonsillectomy. **Please consult packaging insert for more detailed safety information and instructions for use.**

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