

*QuikClot*TM

It's all about saving lives



**Procedures for First Responders'
application of
QuikClot[®]
hemostatic agent**

LABEL INFORMATION

■ QuikClot®

Adsorbent Hemostatic Agent

**Controls moderate to severe blood loss by promoting
coagulation**

Supplied by

Z-Medica

4 Fairfield Blvd., Wallingford, CT, 06492

For Emergency Use Only

&

For External Use Only

as a

Temporary traumatic wound treatment to stop moderate-to-severe bleeding



QuikClot® hemostat ...for emergency response

What is QuikClot® hemostat, how does it work, and why use it?

- QuikClot® hemostat is a derivative of volcanic rock that is laboratory recreated and acts as a selective sponge. It is chemically inert and works from physical, not chemical, action. QuikClot® hemostatic agent does not absorb into the body but is safe to leave in the wound for as long as necessary. Fluid molecules are adsorbed by the QuikClot® hemostat granules. This causes rapid localized coagulation and the formation of a stable blood clot in a variety of wounds.
- For emergency response professionals, the most significant use of QuikClot® hemostat is to stop traumatic bleeding. Achieving hemostasis helps to stabilize the patient and provides a longer time-window to transport the patient to further medical treatment.
- QuikClot® hemostat is typically used upon determination that conventional methods have been inadequate to stop bleeding.

Application Provisions

Protocol procedures for QuikClot® hemostat :

- ...are supplemental to the standard operating procedures of your local and state emergency response guidelines.
- ...are to be used with the guidelines of your formal emergency medical technician training and your State's prescribed priority procedures for emergency medical services.
- ...can be used as supplement standard BLS (Basic Life Support) Guidelines, which include Assessment, Major & Multi-system Trauma, Amputations, and Musculoskeletal injuries.
- ...may be incorporated into standard EMT/EMS therapies as an adjunct for injuries where other methods fail to achieve hemostasis.

Training Procedures

Also see package directions

1. Apply direct, firm pressure to wound using sterile gauze dressing or best available substitute.
2. If bleeding is stopped or nearly stopped after 1 minute of pressure, wrap and tie bandage to maintain pressure on wound and seek medical care.
3. To prevent burning from exothermic reaction, assure area around wound is **dry and free from water droplets**. (See Addendum B)
4. If moderate to severe bleeding continues after 90 seconds, hold QuikClot® hemostat package away from face and tear open at tabs.
5. Remove previously applied bandages making certain to *wipe away as much excess blood and liquid* in wound area as possible. (See addendum of special precautions.)
6. Immediately begin a gradual pour (DO NOT DUMP) of QuikClot® hemostatic agent in back-and-forth motion onto source of bleeding (see Addendum C). QuikClot® hemostat changes from its dry light beige color to a dark color as it adsorbs moisture and performs clotting.

Continued...

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Training Procedures (cont'd.)

7. Stop pouring promptly when you see a dry layer (original lighter color) of QuikClot® hemostatic agent on wound indicating that there is no more blood to adsorb.
8. Immediately reapply direct pressure for one to two minutes, then wrap and protect area with compression bandage, or best available bandage to maintain pressure.

NOTE: As some heat may be released from wound while QuikClot® hemostat performs its coagulation, protect hands with gauze or similar insulating material while applying pressure.

9. Transport patient as soon as possible to medical facility.
10. Be certain QuikClot® hemostat package accompanies patient so physician or medical staff can follow directions to remove QuikClot® hemostat properly.

Patient Precautions — Certain Conditions

Conditions such as those that can occur with the following types of wounds may require more attention:

- **Sucking chest wounds:** Use particular care around sucking chest wounds to prevent QuikClot® hemostat from being aspirated into lungs.
- **Spurting blood** from small diameter wounds such as small – caliber ‘entrance-only’ bullet wounds require more careful evaluation and treatment, since the source of bleeding may not be at the same location, see Addendum A.
- **Head and scalp wounds** produce profuse volumes of blood that can cause discomfort from exothermic reaction during application of QuikClot® hemostat, see Addendums B & C.

Caregiver Precautions

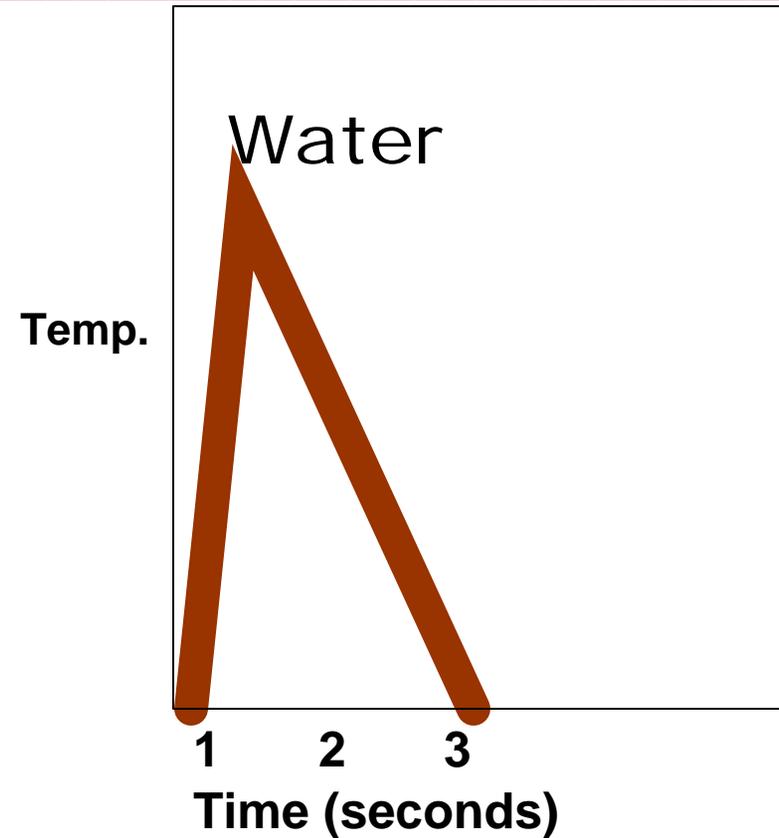
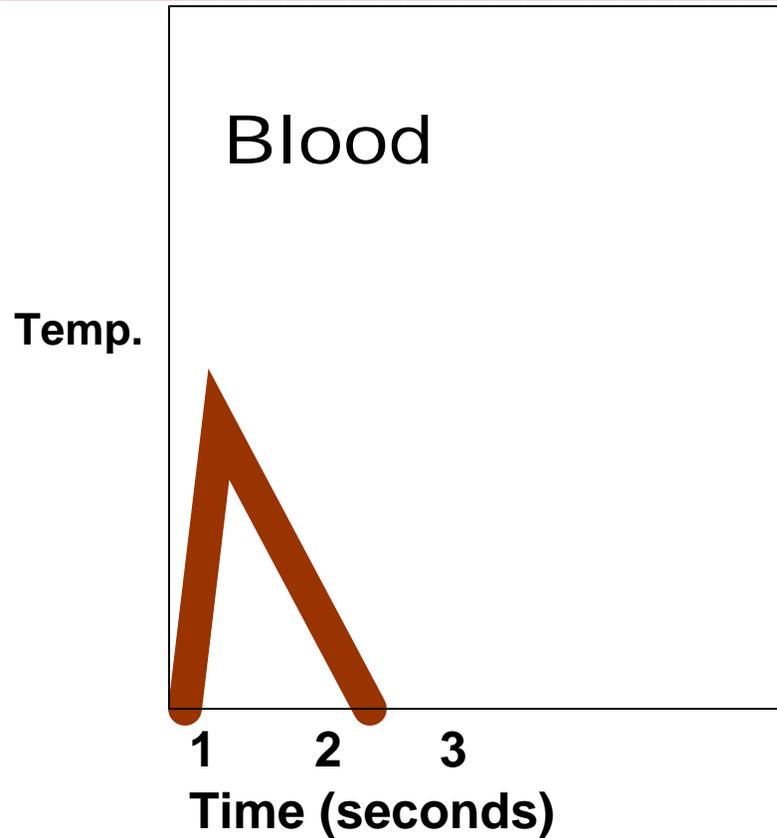
- Do not ingest or inhale QuikClot® hemostat.
 - If ingested, drink two or more glasses of water and seek medical help.
 - If inhaled, move to open air or a well-ventilated space.
- Keep away from face when opening or pouring.
- Do not use bare hands to apply pressure immediately following application of QuikClot® hemostatic agent .
- If adsorbing granules cause heat discomfort to skin, promptly brush away and/or flood with water.
- Sterility not guaranteed if package is damaged or opened. Safely discard damaged open packages.
- Keep away from children.

ADDENDUM – Methods of treatment with small entry wounds

- The caregiver should be aware that continuously spurting blood from a small diameter puncture wound can create a high pressure exit path. The source of such bleeding may be too far away from the entry point for QuikClot® hemostat to be effective.
- For small diameter entry wounds use particular care to slowly and gently pour QuikClot® hemostat onto wound to avoid exothermic reaction and follow standard application directions.

ADDENDUM – B

Relative thermal reactions



While there is a certain amount of thermal reaction when treating a bleeding wound, there is measurably more thermal reaction in the presence of water. Thus to reduce possibility of excess thermal reaction, attempt to remove supplemental moisture on or near the wound prior to applying QuikClot® hemostat.

ADDENDUM - C

Nature of exothermic reaction

- As QuikClot® hemostatic agent adsorbs fluid molecules, energy in the form of heat can be released. This temperature spike is very short in duration (see Addendum B).
- The thermal increase is directly proportional to the ratio of QuikClot® hemostat granules to the volume of blood. Care should be taken when applying QuikClot® hemostatic agent to see that the ratio stays below two parts of QuikClot® hemostat to one part of blood.
- Following these guidelines may necessitate application of additional granules should the early amounts of QuikClot® hemostat fail to achieve hemostasis.

ADDENDUM – D

Standard package instructions

Basic Instructions for QuikClot® hemostat Usage – Please Read Carefully

Warning - Avoid contact with wet skin. Product reacts with small amounts of water and can cause burning. Stop burning by brushing away granules and flooding area with large volume of water. If ingested, immediately drink 2 or more glasses of water.

DIRECTIONS – READ BEFORE USE

- 1 Apply direct, firm pressure to wound using sterile gauze dressing or best available substitute.
- 2 If bleeding is stopped or nearly stopped after approximately 1 minute of pressure, wrap and tie bandage to maintain pressure on wound and seek **MEDICAL CARE**.
- 3 If moderate to severe bleeding continues after 90 seconds, hold pack away from face and tear open at tabs.
- 4 Use wiping motion to remove gauze and excess blood - immediately start a slow pour of QuikClot® hemostat directly onto wound. Stop pour as soon as dry granules cover wound area. Use only enough QuikClot® hemostat to stop bleeding.
- 5 Reapply firm pressure to QuikClot® hemostat-covered wound using sterile gauze. Wrap and tie bandage to maintain pressure.
- 6 Seek **MEDICAL CARE** immediately. Discard unused granules and show empty pack to medical personnel.

FOR MEDICAL PERSONNEL

- 1 Remove all loose granules prior to irrigation and wound treatment.
- 2 Fully flood entire wound area with irrigation solution.
- 3 Proceed with normal irrigation and/or suction until all granules are removed.

WARNINGS

- Sterility not guaranteed if package is damaged or opened. Discard damaged or open packages.
- Avoid breathing dust or getting in eyes. Dust may irritate eyes, nose, throat and skin. If inhaled, get to fresh air. Flush eyes with water for 15 minutes. Product contains trace amount of quartz.
- Long term biocompatibility has not been determined.
- Keep away from children.

CAUTION - Do not store QuikClot® hemostat packages in direct sunlight.