

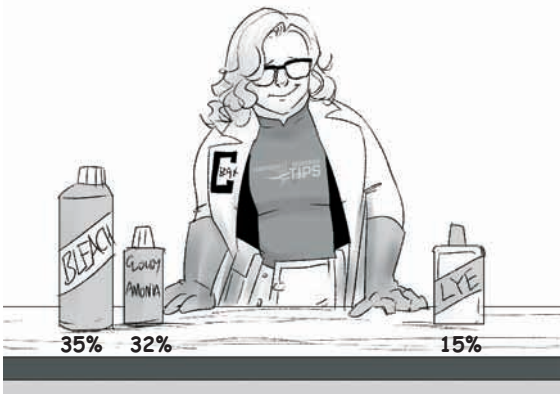
Dr Christina Baxter, of EmergencyResponseTIPS.com and Hazard3.com, offers helpful advice for first responders

Keeping you safe!



Attacks with corrosive liquids, often referred to as acid attacks, are becoming increasingly common. These attacks involve a corrosive liquid (acid or alkaline) being thrown, sprayed or poured onto a victim, most frequently onto the face, causing significant harm and life changing injuries. Historically, acid throwing was linked to gender inequality and violence against women during crimes of passion. In the most recent spate of attacks in London, however, both victims and suspects were predominantly males aged between 16 and 24; this demonstrates a clear shift from the historical pattern.

Corrosive attacks are difficult to prevent because more than half of the incidents are



between strangers, attacks are apparently random and attackers are generally lone wolves. The containers used are person-borne, and the materials require no preparation of note. The chosen corrosive liquids are generally readily available from retail outlets, making it difficult to use regulatory controls to reduce their availability. Such liquids are typically clear and easily concealed in water or sports drink bottles, so they can easily be moved around without raising suspicions. A recent study funded by the UK Home Office determined that the most used corrosives in UK-based attacks have been household products, such as bleach (35%), followed by ammonia (32%), and corrosives labelled as acids/alkalis (15%).

Agencies should be prepared for corrosive attacks and have response plans in place. The following planning and response considerations are provided to help you prepare for corrosive attacks. Most importantly, the victims of corrosive attacks should be decontaminated immediately, focusing on flushing the areas of liquid contact with water before medical transport. This will minimise the time the material is contact with the eyes and/or skin, which will reduce the extent of the burn injuries.

Dispatch centre considerations

Dispatch centres and public safety answering points (PSAPs) should provide their personnel with situational awareness training on corrosive attacks. Providing victims with immediate emergency decontamination is critical, even before the first responders arrive on the scene. PSAPs should evaluate their existing pre-arrival medical instructions to see if they are adequate for corrosive attacks, for instance by providing guidance that can assist in performing emergency decontamination (decon) using available water sources (eg water bottles).

Initial emergency response considerations

First responders arriving at a scene should always be aware that an incident may involve more than just corrosive materials. At a minimum, don gloves and eye protection and avoid contact with unknown substances while rendering aid, just as when handling a trauma call.



Responders should implement their agency's emergency decon procedures. As quickly as possible, flush the victim's contaminated skin with copious amounts of water, remove contaminated clothing, and attempt to position the patient so the water runs off the contaminated area without pooling on the body, to minimise further damage. If possible, blot obvious corrosive materials with a highly absorbent material to help minimise spread. Do not attempt to neutralise the material on the patient's skin.

Emergency medical considerations

Emergency medical services (EMS) agencies should provide situational awareness training on corrosive attacks, including reviewing their existing procedures for corrosive/chemical burns. If available, Morgan lenses, syringe assisted irrigation, or flowing bags of saline may be used to irrigate the eyes to reduce potential damage. Many EMS protocols indicate that chemical burn patients should be transported to a burns centre; ensure that existing transport protocols are consistent with local hospital capabilities.



While many EMS agencies rely on firefighters to perform on-scene emergency victim decon, agencies should consider their ability to provide limited immediate decon, especially to the face and eyes, should they arrive before the fire suppression unit. This can be as simple as having water bottles stored on the ambulances.

Law enforcement and special event considerations

Law enforcement agencies should review their force policies to ensure they adequately address non-traditional weapons such as corrosive liquids, and provide their officers with situational awareness training for corrosive attacks. Trained officers may be able to detect and prevent corrosive attacks if they are properly educated, equipped and aware of the signs. During event planning, identify locations in the area that can be used to support emergency decon, such as facility showers, fountains, etc.



Tactical teams, crowd control units, and officers assigned to critical infrastructure/special events should consider having emergency decon capabilities on hand, such as water bottles. Other options include highly absorbent wipes, eg FiberTect, and access to larger water sources, eg pressurised water extinguishers.

When planning special events, agencies should consider their approaches to assessing liquids carried by the public. If attendees are allowed to bring liquids into a venue or event area, consider limiting containers to closed and sealed manufacturers' bottles, and/or screening the liquids using multiple threat detection technologies.

Hazardous materials response considerations

Hazmat teams may respond to the scene of a corrosive attack to identify the product, collect evidence, and/or neutralise remaining material. In most cases, they will arrive well after the completion of emergency decon and the victim(s) have been moved away.

Corrosive liquids may be indistinguishable from decon water runoff as both can appear to be clear liquids on the ground. Litmus, or pH, paper should be used to attempt to locate and identify corrosives. Acids will have a pH of under seven, while the pH of bases will exceed seven. If the container used to throw the material can be located, it is often the best source for identifying the liquid used through field testing. Responders may be able to retrieve corrosive material from any bits of the victims' clothing left on-scene. In all cases, all containers, clothing and residual material should be treated as evidence and maintained for law enforcement use.

If residual materials are available for testing, consider treating the material as a true unknown and screen/classify across all appropriate detection devices, then follow up with identification tools.

