Procedure for Removing Fike GCA (Gas Cartridge Actuator) Devices From Fike System Bottles:

\emph{EHS_063.00  Revision 00  Revised 7/31/2014}

\textbf{Device Description:}

Fike GCAs (Gas Cartridge Actuators) are explosive devices used to provide the necessary pressure to open all Fike containers utilizing a Fike fast acting single rupture disc assembly. The GCA consists of a 17-4 PH series stainless steel body containing two sets of bridge wires. This device is designed to operate by electrical input from a Fike system controller. Operation of the GCA occurs when the electric current is sent through the bridge wires causing an exothermic chemical reaction. This generates the necessary pressure to open the rupture disc and discharge the suppressant agent.

These devices may detonate if exposed to two-way radio transmission, low level electrical current, impact, static, heat or shock. \textbf{Do not} fight fires involving explosives. Isolate the area and evacuate personnel to a safe place as explosive detonation can occur.

Prolonged or repeated contact with post-function gases and particulates may result in eye irritation with discomfort, tearing and blurring of vision or skin irritation resulting in discomfort or rash. If ingested, core materials may be poisonous or cause respiratory tract irritation. \textbf{Ingestion} of lead and lead compounds may cause lead poisoning. Ingestion of particulates would primarily target the gastrointestinal tract, central nervous system, kidneys, blood and gingival tissue. Symptoms of this include but are not limited to weakness, insomnia, facial pallor, weight loss, abdominal pain, colic and anemia. \textbf{Inhalation} of lead and lead compounds at high levels can cause acute or chronic symptoms ranging from eye and skin irritation to permanent brain damage, vomiting and convulsions. Because
PETN is a vasodilator the effects of exposure can result in headaches, weakness and a fall in blood pressure. Overexposure can result in additional nasal and respiratory irritation.

Recommended PPE (Personal Protective Equipment):

- Safety glasses
- Grounding devices (grounding straps and/or conductive footwear)
- Protective rubber gloves and respiratory protection from dust, mist, and fumes is recommended for handling post-detonation materials.

Summary of Procedure – Removal From Fike System Bottle:

(A more detailed procedure with photos follows)

1. First and foremost, determine whether or not an initiator is even installed on the bottle. If there is a 4-wire GCA initiator installed, consult the remainder of this procedure for safe removal. If there is a 2-wire initiator installed, please consult the guidance materials concerning Fike 2-wire Initiator Removal.
2. It should be noted that the initiator, if present, should be the first thing removed from a bottle, before any plumbing is disconnected from the bottle (it should be removed while the bottle is still installed in the fire protection system).
3. Prior to removing the actuator from the Fike system bottle, the device must be properly shunted according to the following procedure to prevent accidental discharge:
   a. Strip the ends of all 4 actuator wires.
   b. Wire the blue and red wires together, and secure with a wire nut or electrical tape.
   c. Wire the green and yellow wires together, and secure with a wire nut or electrical tape.
   d. The device is now properly shunted.
4. After shunting the device, carefully unscrew the device from the bottle.
   a. Hold the device by the smooth-walled portion, keeping the threaded explosive assembly away from yourself or others.
5. Immediately screw on the metal GCA safety cap.
6. Place shunted and capped device into a fiberboard tube labeled “Cartridges, Power Device”.
7. Place the tube into a fiberboard box with a 1.4S DOT Placard.
   a. No more than 25 devices can be stored in one box at one time.
8. Store box in a secure area until ready for disposal.
   a. Store away from low level electrical current, impact, static, heat, sparks, shock, or other RF energy.
9. Contact a licensed disposal facility, such as DD&C L.L.C. out of Hastings, NE for pickup and disposal (contact information is below).

Storage/Disposal:

All Fike devices can be stored in the same box (2-wire, 4-wire) as long as the total number of devices in that box does not exceed 25. Do not store Fike devices in the same box with any other products.

Dispose of in accordance with all applicable local, state, and federal regulations.

You may contact your local Fire Department for information on disposal facilities, or you may directly contact a disposal facility such as:
Procedure Details:

1. First and foremost, determine whether or not an initiator is even installed on the bottle. If there is a 4-wire GCA initiator installed, consult the remainder of this procedure for safe removal. If there is a 2-wire initiator installed, please consult the guidance materials concerning Fike 2-wire Initiator Removal.
2. It should be noted that the initiator, if present, should be the first thing removed from a bottle, before any plumbing is disconnected from the bottle (it should be removed while the bottle is still installed in the fire protection system).

3. Prior to removing the actuator from the Fike system bottle, the device must be properly shunted according to the following procedure to prevent accidental discharge:
   a. Strip the ends of all 4 actuator wires.
   b. Wire the blue and red wires together, and secure with a wire nut or electrical tape.
   c. Wire the green and yellow wires together, and secure with a wire nut or electrical tape.

   ![Figure 6](image)

   Figure 6 – Before removing initiator, strip the ends of the 2 wires and twist them together

   a. The device is now properly shunted.

4. After shunting the device, carefully unscrew the device from the bottle.
   a. Hold the device by the smooth-walled portion, keeping the threaded explosive assembly away from yourself or others.

   ![Figure 7](image)

   ![Figure 8](image)

   Figure 7 – Unscrew the initiator from the initiator housing
   Figure 8 – Remove the initiator from the initiator housing
5. Immediately screw on the metal GCA safety cap.

6. Place shunted and capped device into a fiberboard tube labeled “Cartridges, Power Device”.

7. Place the tube into a fiberboard box with a 1.4S DOT Placard.
   a. No more than 25 devices can be stored in one box at one time.
Place the initiator shipping tube in a properly marked and placarded fiberboard initiator shipping box (available from Fike or from DD&C – Contact information above)

Properly packaged Fike 2-wire initiator ready for shipment

Fiberboard box must have a 1.4S Explosive placard. A maximum of 25 Fike initiators may be stored in one box.

8. Store box in a secure area until ready for disposal.
   a. Store away from low level electrical current, impact, static, heat, sparks, shock, or other RF energy.

9. Contact a licensed disposal facility, such as DD&C L.L.C out of Hastings, NE for pickup and disposal.

Additional Resources:

- Fike Website:
  - www.fike.com
- General Info on Fike Gas Cartridge Actuators:
- Fike Gas Cartridge Actuator Data Sheet:
- Fike Gas Cartridge Actuator Safety Data Sheet:
The information contained in this document was provided to A-Gas RemTec by DD&C L.L.C, a licensed explosives disposal company that specializes in the handling and disposal of 1.4S and 1.4B explosive devices. This information is being provided by A-Gas RemTec as a courtesy to our customers and suppliers, and is strictly to be used for general guidance on the safe handling of the devices referenced herein. This information is not intended to be used as a legal reference on local, state, or federal explosives regulations. Please follow all applicable local, state, and federal regulations for the handling and storage of explosive devices. A-Gas RemTec is not responsible for any damages to persons or property through the use of these procedures.