

SCOPE

This procedure applies to all personnel operating at emergency scenes that involve exposure to hydrogen cyanide.

PURPOSE

The purpose of this Standard Operating Procedure is to provide specific information and procedures for fire and EMS companies in the greater Sierra Vista area to use while responding to incidents where exposure to hydrogen cyanide is suspected or confirmed.

PROCEDURES

1. Indications

- 1.1.** Occupational or smoke exposures (e.g., firefighting), industrial or laboratory accidents, natural catastrophes, suicide and murder attempts, chemical warfare and terrorism.
- 1.2.** Signs and symptoms of high concentration of cyanide include:
 - 1.2.1. Arrhythmia
 - 1.2.2. Cardiovascular collapse
 - 1.2.3. Cardiac arrest
 - 1.2.4. Loss of consciousness
 - 1.2.5. Seizures
 - 1.2.6. Apnea.
- 1.3.** The Cyanokit is indicated for the treatment of known or suspected cyanide poisoning. If clinical suspicion of cyanide poisoning is high, Cyanokit should be administered without delay. Note, patients experiencing serious symptoms from smoke inhalation, particularly when in a confined space exposure (inside a house fire,) frequently have cyanide exposure with or without carbon monoxide exposure and should be considered for the Cyanokit.

2. Precautions and Side Effects

- 2.1.** May cause transient elevation of blood pressure.
- 2.2.** Will cause red colored urine (for up to 5 weeks) and red colored skin (for up to 2 weeks). The red color of the blood serum and urine will interfere with colorimetric laboratory tests for several days.

3. Regional location of Cyanokit

- 3.1.** A dose of the Cyanokit, or Hydroxocobalamin, is stored in the driver's side rear compartment of SVFMS Battalion 203. This is the only dose available in the prehospital setting of the greater Sierra Vista area. If BN203 is not on scene, a special request is encouraged with a known victim.

4. Units Assigned Medical at a Fire or HazMat scene

- 4.1.** Upon arrival to the incident, medic units should position their apparatus in a manner that would support a quick departure from the scene with a patient.
- 4.2.** Once positioned, the EMS crew shall bring their equipment (gurney, medical box, cardiac monitor) and personnel forward, staging at the Incident Command Post, or at another specified location. If Battalion 203 is on scene, every effort should be made to proactively obtain the Cyanokit and place it on the gurney in anticipation of a victim.

5. Recommended Dosing

- 5.1. The starting dose of CYANOKIT for adults is 5 g (contained in a single vial), administered by IV infusion over 15 minutes (approximately 15 mL/min)*
- 5.2. Depending upon the severity of the poisoning and the clinical response, a second dose of 5 g may be administered by IV infusion up to a total dose of 10 g
- 5.3. The rate of infusion for a potential second dose may range from 15 minutes (in extreme cases) to 2 hours, as clinically indicated

6. Preparation and Administration

6.1. Follow these infusion steps. Starting dose 5 grams.

6.1.1. **Reconstitute:** Place the vial in an upright position. Add 200 mL of 0.9% Sodium Chloride injection to the vial using the transfer spike. Fill to the line.

***0.9% Sodium Chloride injection is the recommended diluent (diluent not included in the kit). Lactated Ringers injection and 5% Dextrose injection have also been found to be compatible with hydroxocobalamin and may be used if 0.9% Sodium Chloride is not readily available.*

6.1.2. **Mix:** The vial should be repeatedly inverted or rocked, not shaken, for at least 60 seconds prior to infusion.

6.1.2.1. Cyanokit solutions should be visually inspected for particulate matter and color prior to administration

6.1.2.2. Discard solution if particulate matter is present or solution is not dark red

6.1.3. **Infuse Vial:** Use vented intravenous tubing, hang and infuse over 15 minutes.

