

## (U) Information for First Responders

### (U) What are the symptoms of cyanide exposure?

(U) Cyanides are highly toxic systemic poisons that block the body's ability to use oxygen. They are especially toxic to the brain and heart and are absorbed well by inhalation and ingestion.

(U) Low-level exposure:

- Rapid breathing
- Restlessness
- Dizziness
- Headache
- Rapid heart rate
- Nausea/vomiting

(U) Severe poisoning:

- Rapid loss of consciousness
- Convulsions
- Coma
- Slow heart rate/low blood pressure
- Lung injury
- Respiratory failure/death

### (U) Warning labels first responders may encounter

(U) Commercially packaged cyanide products will usually have the word cyanide printed on the label, for example "sodium cyanide" or "potassium cyanide." Cyanide products might contain one or more of the following warning labels:

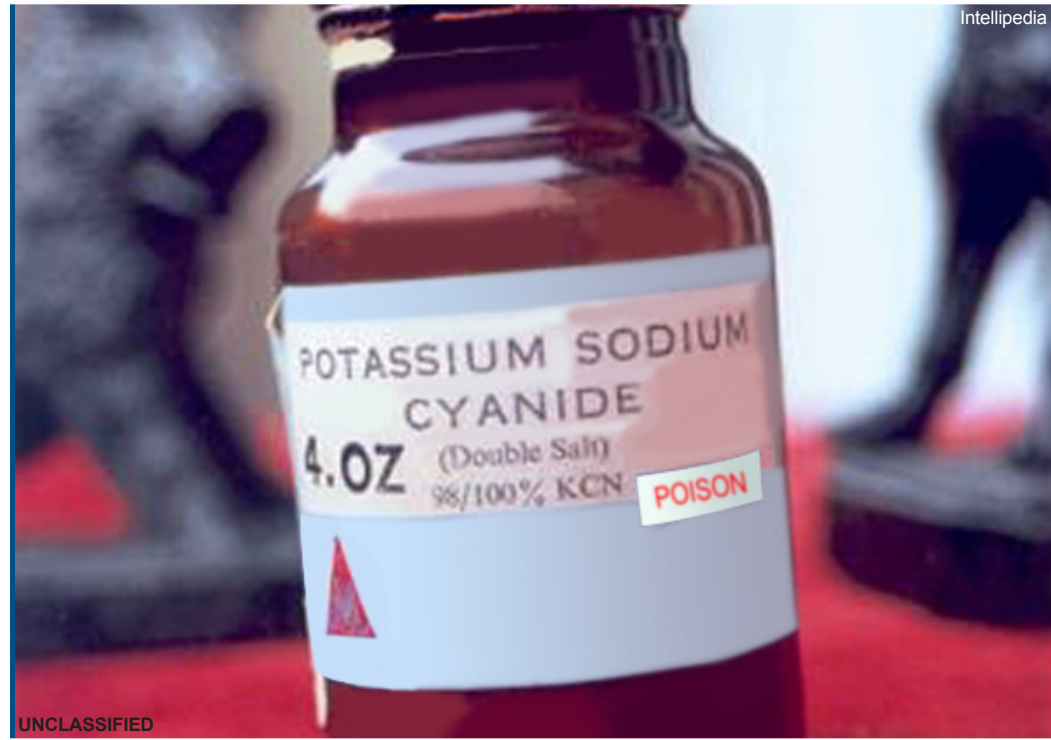


(U) Examples of warning labels used on containers containing cyanide compounds. Source: seton.com

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**(U) For comments or questions on the content or dissemination of this document, please contact the DHS/I&A Production Branch at [IA.Feedback@hq.dhs.gov](mailto:IA.Feedback@hq.dhs.gov).**

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# Reference Aid

## (U) Cyanide: Production Indicators



**Federal Bureau of Investigation**



**Homeland Security**

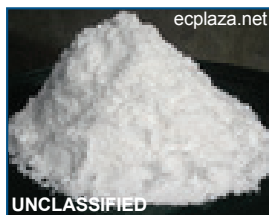
Office of Intelligence and Analysis

## (U) Background Information

### (U) What are cyanides?

(U//FOUO) Cyanides are among the most likely compounds terrorists would use in a chemical attack because of their toxicity, availability, and ease of crude dissemination. They can exist in multiple forms:

- Sodium cyanide (NaCN) - white/yellow solid.
- Potassium cyanide (KCN) - white/yellow solid.
- Hydrogen cyanide (HCN) - colorless gas with almond-like odor.
- Cyanogen chloride (CNCl) - colorless gas/liquid with acrid, choking odor.



(U) Sodium cyanide powder.



(U) Sodium cyanide briquette.

### (U) What are cyanides used in commercially?

- Steel production
- Synthetic fiber production
- Dye and pigment manufacturing
- Chemical synthesis
- Gold and silver extraction
- Photography
- Plastics
- Jewelry
- Mining
- Pesticides
- Metal Cleaning
- Electroplating

### (U) How can cyanides be used in attacks?

(U//FOUO) Salts and liquids: Added to food, beverages, or water supplies, placed on surfaces as a skin contact poison, or disseminated in mail.

(U//FOUO) Gases: Using an improvised chemical device to disseminate in an indoor location such as in public transportation or other public venues.



(U) Subway/metro.



(U) Restaurant.



(U) Movie theater or auditorium.

## (U) Indicators of Illicit Production

### (U) Hydrogen cyanide gas



(U) Improvised chemical device.

(U//FOUO) An improvised chemical device, designed to release hydrogen cyanide gas by mixing several chemical components, could look like the device above, with all the components contained in a small vessel. This type of device would be most effective in a small enclosed space.

1. Paint can with holes
2. A strong acid
3. Cyanide salt
4. Potassium permanganate
5. Blasting cap

### (U) Sodium cyanide salt

(U//FOUO) Sodium cyanide can be produced using sodium carbonate (washing soda), charcoal, and ferric oxide.



(U) Sodium carbonate.



(U) Charcoal.



(U) Ferric oxide.

### (U) Potassium cyanide salt

(U//FOUO) Potassium cyanide salt can be produced using potassium ferrocyanide and potassium carbonate.



(U) Potassium ferrocyanide.



(U) Potassium carbonate.

(U) Additional Indicators

- Gloves
- Goggles
- Masks
- Unusual odors
- Chemical burns
- Chemical/laboratory equipment
- Recipes for cyanide

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