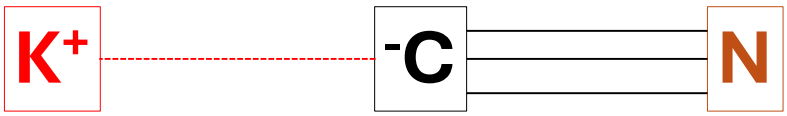
Chemical of the Week – Part 2

Hazard Profile	
Chemical Name and Pseudonyms	Potassium cyanide, Potassium salt of hydrocyanic acid, Cyanide of potassium
UN Number	1680 (solid), 3413 (in solution)
Chemical Formula	KCN
Hazards	Toxic. Forms flammable gas on contact with water or humidity. Corrosive to metal.
NFPA Hazard Class (H-F-R-Ⓞ)	4 – 0– 1 –
PPE Considerations	CPC or SFPC with SCBA based on assignment
Fire Fighting Considerations	Use extinguishing method for nearby combustible materials. Avoid water if possible. Contain water runoff.
Decontamination	Ventilation or water
Detection and Monitoring	Colorimetric, spectroscopy, PID electrochemical sensor
Chemical and Physical Properties	
Physical State	White granular solid
Vapor Pressure	0 mm/Hg
Boiling Point	2957°F
Vapor Density	-
Specific Gravity	1.55
Miscibility	72%
Flash Point	-
LEL/UEL	- / -%
Autoignition Temp	-
pH	-
Toxicity	
IDLH	25 mg/m^3
LC50	-
LD50	4 mg/kg (oral)
AEGL1/AEGL 2/AEGL (10 Min)	5.6/ -4572 mg/m^3
Emergency Response Planning Guide (ERPG) 1/2/3	- / - / -
Protective Action Criteria (PAC) 1/2/3	5.3 / 19 / 40 mg/m^3
PEL/REL/STEL	5 / 5/ - mg/m^3
Radioactive (Yes/No)	No
Medical	
Toxicological Considerations	Toxic inhalation by all routes. Environmental toxin

Signs/Symptoms of Exposure	Respiratory/skin/eye irritation, CNS s/s, headache, confusion, nausea & vomiting
Medical Treatment	Fresh air, water flush, treat symptomatically, consider antidote kit

Other Information

Dissolution in water releases some poisonous hydrogen cyanide gas. The amount is not hazardous except in an enclosed space. If the water is acidic, dangerous amounts of hydrogen cyanide form at once.
Contact with acid releases highly flammable hydrogen cyanide gas. Moisture may cause this material to volatilize as hydrogen cyanide. When heated to decomposition, it emits very toxic fumes of cyanide and nitrogen oxides. Reacts with strong oxidizers such as nitrates and chlorates, nitrogen trichloride; perchloryl fluoride; sodium nitrate; acids; alkaloids; chloral hydrate; iodine.
Can react violently with oxidizing agents: fusion with metal chlorates, perchlorates, nitrates, or nitrites can cause explosions. A mixture with perchloryl fluoride may explode above 100°C. A mixture with nitrite salts may cause an explosion. Incompatible with iodine.

Chemical Structure