

CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

Sodium Cyanide

NaCN

CAS No.: 143-33-9

Physical Properties

Exposure Limits

White hygroscopic crystals with an almond-like odor.
Vapor pressure at 20 °C: negligible
Melting point: 564 °C

OSHA PEL: NE
ACGIH TLV: NE

Hazardous Characteristics

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin?	Sensitizer?	Self-reactive?	Incompatible with:
4	0	3	Yes	No	No	Acids, weak oxidizing agents, as well as stronger oxidizing agents.*

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

***Reactivity Hazards**

Sodium cyanide is readily oxidized, even by weak oxidizing agents, and usually with explosive consequences, especially so with stronger oxidizing agents. In acidic environments sodium cyanide hydrolyzes to form HCN, a severely toxic, flammable, colorless gas with an almond-like odor. Aqueous solutions of sodium cyanide are strongly alkaline and are corrosive to metals such as aluminum and zinc. See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? No

Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace?* No

Typical symptoms of acute exposures:

Is absorbed through the skin where it causes redness and irritation. If absorbed, inhaled, or ingested can cause death; non-fatal exposures cause impaired mental function that can be permanent as well as other immediate symptoms such as labored breathing if inhaled, and sore throat and stomach ache if ingested. In the eyes causes pain and blurred vision.

Principal target organ(s) or system(s):

Sodium cyanide inhibits cellular respiration.

Storage Requirements

Store with other poisons in a cool, dry, well-ventilated and locked location.

Additional Remarks

Before using, handling, or storing sodium cyanide, make sure that the specific and requisite means for first aid treatment described in the MSDS are on hand and readily available, and that co-workers are competent to administer them. Sodium cyanide is hygroscopic; HCN, the source of the almond-like odor of sodium cyanide, arises from the hydrolysis of the sodium cyanide.

Notes

ReadMe

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed*. For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

Reproductive Toxins

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at <http://www.sis.nlm.nih.gov> and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed.* See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*, Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

Abbreviations

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m³—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

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