BASF Chemical Emergency Medical Guidelines

N-Methylpyrrolidone (C_5H_9NO) A 1

Information and recommendations for first responders

- **Patients exposed only to N-Methylpyrrolidone vapor do not pose a significant risk of secondary contamination. Patients whose clothing or skin is contaminated with liquid N-Methylpyrrolidone (boiling point 202°C, 395.6°F, respectively) can secondarily contaminate rescue and medical personnel by direct contact or evaporation of N-Methylpyrrolidone.**
- **N-Methylpyrrolidone is irritating when it comes in contact with the skin, eyes, nose and throat and at high exposures may cause systemic effects.**
- **There is no antidote to be administered to counteract the effects of N-Methylpyrrolidone. Treatment consists of supportive measures.**

1. Substance information

N-Methylpyrrolidone (C_5H_9NO), CAS 872-50-4.

Synonyms: N-Methylpyrrolidinone, 1-Methyl-2-pyrrolidone, NMP.

N-Methylpyrrolidone is, at room temperature, a clear, colorless liquid with a boiling point of 202°C, 395.6°F, respectively. The liquid is poorly flammable. N-Methylpyrrolidone has a fish-like odor. It is miscible with water and common organic solvents. Carbon monoxide and nitrogen oxides may be released in a N-Methylpyrrolidone fire.
N-Methylpyrrolidone is a slightly volatile organic solvent for chemicals and resins in the microelectronics and pharmaceutical industries. It replaces other solvents, e.g. for paint stripping and lube oil extraction; it is used as a solvent for pesticides, coatings, adhesives, dyes, pigments, polymers, and polyurethane foam cleanup.

2. Routes of exposure

Inhalation **Most exposures occur by inhalation.** N-Methylpyrrolidone is readily absorbed by the lungs.

Skin/eye contact It is readily absorbed through the skin.

Ingestion N-Methylpyrrolidone is absorbed by the gut. Ingestion is uncommon in occupational settings but may be aspirated.

3. Acute health effects

Systemic Acute exposure to high concentrations of N-Methylpyrrolidone may produce headache, nausea and vomiting. High exposures may cause adverse effects including central nervous depression and alterations in the liver, kidneys and blood cells.

Respiratory N-Methylpyrrolidone may irritate the nose and throat.

Dermal Irritation of the skin may be caused by direct contact to liquid N-Methylpyrrolidone. Prolonged or repeated contact with skin may cause burning pain, redness, inflammation, and blisters.

Ocular Eye contact to vapor or liquid N-Methylpyrrolidone may cause irritation with burning discomfort, spasmodic blinking or involuntary closing of the eyelids, redness, and tearing.

4. Actions

Rescuer self-protection	**If the zone which has to be entered by the rescuer is suspected of containing N-Methylpyrrolidone, pressure-demand, self-contained breathing apparatus and chemical-protective clothing shall be worn; do not use equipment that is contaminated itself.** Patients whose clothing or skin is contaminated with liquid N-Methylpyrrolidone may secondarily contaminate rescue and medical personnel by direct contact.
Patient recovery	Patients should be removed from the contaminated zone immediately. Patients who are unable to walk may be removed on backboards or stretchers; if these are not available, carefully remove/transport patients with appropriate action to a safe zone, taking into account your self-protection Immediate priorities must follow the "**A, B, C's**" of resuscitation: **A) Airway** (make sure the airway is not blocked by the tongue or by a foreign body) **B) Breathing** (check to see if the patient is breathing, provide ventilation with use of appropriate barrier devices, e.g. with a pocket face mask, if breathing is absent) **C) Circulation** (start CPR in any unresponsive person with absent or abnormal breathing)
Decontamination	Patients exposed to N-Methylpyrrolidone require decontamination. Patients who are able and cooperative may assist with their own decontamination. If the exposure involved N-Methylpyrrolidone and if clothing is contaminated, remove and double-bag the clothing. **Irrigate exposed or irritated eyes with plain water or saline for at least 20 minutes**. Remove contact lenses if present and easily removable without additional trauma to the eye. Continue other basic care during flushing. **Flush exposed skin and hair with plain water for at least 15 minutes**. Protect eyes during flushing of skin and hair. Continue other basic care during flushing. Following ingestion rinse mouth and afterwards administer 5 mL/kg BW up to 200 mL of water for dilution if the patient can swallow and has a strong gag reflex. Induced emesis is not recommended due to the potential for esophageal irritation and aspiration.
Further actions	**Each potentially exposed person should seek medical advice and treatment.**

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