DATA SHEET

AMMONIA (NH_3)

Definition

Ammonia, at the normal temperature (25ºC) and pressure (101.3 kPa [kilopascals]), is a gas. As such, it is colourless and has a sharp, penetrating odour.

Anhydrous ammonia, which does not contain water, is not corrosive to most metals. However, in the presence of humidity, gaseous or liquid ammonia rapidly alters copper, zinc and many alloys. An explosive compound is formed when ammonia is combined with gold, silver and mercury.

Use

Ammonia is used primarily to make fertilizer, although it is also used in several other sectors of activity, such as in the chemical, plastics and food industries, as well as in the storage and wholesale food products sectors.

Ammonia is also used as a gas coolant in the industrial sector.

How ammonia enters the body

Ammonia enters the body primarily via the respiratory tract. The quantities absorbed in other ways are negligible. When ammonia is inhaled, most of the dose dissolves in the nose and throat. As a result, very little ends up in the blood.

EFFECTS OF AMMONIA ON HEALTH AS A FACTOR OF ITS CONCENTRATION IN THE ENVIRONMENT

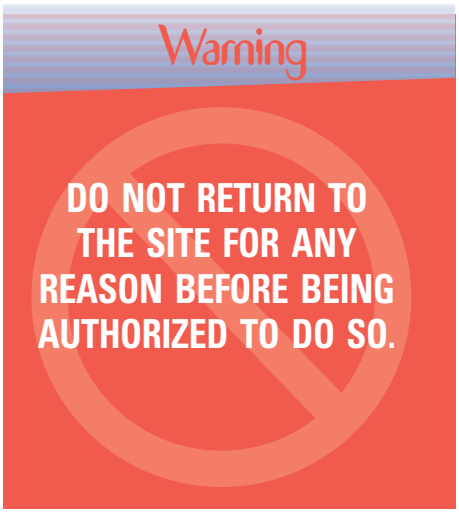
	PPM	
A few minutes	*5000 à 10 000*	*Death (pulmonary oedema)*
15 minutes	*2000 à 5000*	*Risk of death*
	700	*Instant irritation*
30 minutes	*300*	*IDLH: Immediately dangerous to life or health*
5 minutes	*100 -135*	*Moderate irritation, watery eyes, tolerance threshold*
	70	*Watery eyes, intolerable during long periods of exposure*
	35	*15-minute STEV*
	25	*8-hour TWAEV*
	17	*No risk, odour detectable*

FIRST-AIDERS

Emergency intervention

What to do in the event of an ammonia leak

1. Take rapid action.
2. Follow the establishment's emergency measures plan and the procedure for evacuating injured persons.
3. Evacuate the contaminated zone.
4. Call 911.
5. Protect yourself by one the following means, as applicable:
   - Use the recommended respiratory device.
   - Wear eye protection.
   - Wear the recommended protective clothing.



First aid and emergency medical care

First-aiders must learn about the risks specific to ammonia by undergoing training complementary to the basic course required by the CSST.

1 *Inhalation*

- Transport the victim immediately to a place with uncontaminated fresh air.

If the victim is conscious and breathing,

- settle him or her in a comfortable, semi-seated position,
- administer oxygen (if it is available and you have the necessary training), and
- monitor the victim for shock.

If the victim is unconscious or not breathing,

- begin cardiopulmonary resuscitation (CPR).

2 *Skin contact*

- Decontaminate the victim in an emergency drench shower for 20 to 30 minutes, at a warm temperature (between 21ºC and 30ºC).
- Remove the victim's clothing while he or she is in the shower, and carefully cut away any piece of clothing stuck to the skin.
- Dispose of the clothing, using the two-bag technique.

3 *Eye contact*

- Rinse the victim's eyes copiously with warm water (between 21ºC and 30ºC), using an eye douche, for 15 to 20 minutes.
- If the victim is wearing contact lenses, remove them carefully.

4 *Ingestion*

- If the victim is conscious, have him or her drink water or milk.

IN ALL CASES

The first-aider must

- ensure the victim is comfortable (warm, resting);
- obtain medical care as quickly as possible since, in the case of face burns, there is a risk of a laryngeal or pulmonary oedema;
- report the accident to the immediate supervisor and to health services or personnel services.

Reference

Robert Lauwerys, *Toxicologie industrielle et intoxications professionnelles*, 3rd edition, Paris-Milan-Barcelona-Bonn, Masson, 1992, p. 384.

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CSST, *Systèmes de réfrigération fonctionnant à l'ammoniac – Condensé du programme de gestion préventive FRIGO*, Bibliothèque nationale du Québec, 1999.

CSST, *Risques et mesures de prévention reliés à l'utilisation de l'ammoniac comme réfrigérant*, Training course for trainers, intended for hygienists and occupational health nurses, 1999.

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Santé au travail