

Section 1 Identification of the chemical and the supplier

- 1.1 Product identification
- Product name: Anhydrous ammonia
- CAS No. 7664-41-7
- Formula NH₃
- Other means of identification. Ammonia; anhydrous ammonia; ammonia gas
- 1.2 Recommended use of the chemical and restrictions on use
- Industrial applications, as fertilizer, in the manufacture of fertilizers, as a refrigerant, as a neutralizing agent, in the manufacture of ice.
- 1.3 Distributor information

MACRO QUIMICA S.A. DE C.V.
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EMERGENCY (24 HRS)

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Section 2 Identification of hazards

- 2.1 Classification of the substance

Classification GHS-MEX

| Code | Indication of physical danger | Hazard class | Danger category |
|------|---|---|---|
| H280 | Contains gas under pressure; it can explode if heated | Gases under pressure | Compressed gas Liquid gas Dissolved gas |
| H314 | Causes severe skin burns and eye damage | Corrosion / skin irritation | 1A, 1B, 1C |
| H318 | Causes serious eye damage | Serious eye damage / eye irritation | 1 |
| H331 | Toxic if inhaled | Acute toxicity by inhalation. | 3 |
| H335 | it can irritate the respiratory tract | Specific toxicity in certain organs (single exposure); irritation of the respiratory tract | 3 |

- 2.2 Label elements

Labeled GHS-MX



Hazard pictograms

Word of warning

Indications of danger

Danger

H280 Contains gas under pressure; It can explode if it gets hot.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage
H331 Toxic if inhaled
H335 It can irritate the respiratory tract.

Prudence advice

Precautionary advice - prevention

P262 Avoid all contact with eyes, skin or clothing.
P280 Wear gloves / protective clothing / protective equipment for the face / eyes.

Prudence advice - response

P302 + P352

P304 + P340

P305 + P351 + P338

In case of skin contact, wash with plenty of water.

In case of inhalation, transport the person outdoors and keep them in a position that facilitates breathing.

In case of contact with the eyes: Rinse with water carefully for several minutes. Remove contact lenses when they are present and can be done easily. Continue with the washing.

Precautionary statements - storage

P403+P233

Store in a well ventilated place. Keep container tightly closed.

Precautionary advice - elimination

P502

Ask the manufacturer or supplier for information on recovery or recycling.

Hazardous ingredients for labeling:

Ammonia

2.3 Other dangers

It can release ammonia vapor, in concentrations of 16 to 25% by volume per weight in air, it is flammable, toxic by inhalation and corrosive. Take all precautions that are appropriate.

| Section 3 Composition / information on components | | | | |
|---|--------------------------|--------------|--------------------------------------|--|
| Name | Product identification | Content% NH3 | classification. GHS | |
| ANHYDROUS AMMONIA | CAS 7664-41-7 UN 1005 | > A 99.5 % | H280 H314 H318 H331 H335 | Contains gas under pressure; It can explode if it gets hot. Causes severe skin burns and eye damage. Causes serious eye damage Toxic if inhaled It can irritate the respiratory tract. |
| WATER | 7732-18-5 | < A 0.5% | | N/A |
| FATS AND OILS | N/D | < A 10ppm | | ND |

Section 4 First aid

4.1 Description of first aid

| | |
|------------------------------------|--|
| First aid by inhalation | Move the victim to fresh and ventilated air, keep him / her at rest, semi-sitting, if not breathing, apply artificial respiration. Obtain immediate medical attention. |
| First aid eye contact | Rinse immediately with water for a long time. Get immediate medical attention |
| First aid by contact with the skin | Remove the victim from the contaminated area, remove contaminated clothing, wash the affected area with plenty of water for a long time, burns should be covered with bandages that will remain moist all the time. Immediate medical attention must be obtained |
| First aid in case of ingestion | Wash your mouth immediately with plenty of water, and drink plenty of water. Call the doctor immediately. |

4.2 Symptoms and most important acute and chronic effects

Corrosive and cryogenic burns, compulsive cough, vomiting, danger of blindness, loss of consciousness, pulmonary edema, gastrointestinal disorders, risk of serious eye injuries.

4.2 Indications of the need to receive immediate medical attention and, if necessary, special treatment

Any.

Section 5 Fire measures

5.1 Suitable extinguishing media

Dew or mist of water, or use dry chemical powder, carbon dioxide as an extinguishing agent.

5.2 Specific hazards of the chemical.

Anhydrous Ammonia is not a fuel, however, ammonia vapors (16 to 25%) are formed and when mixed with air they can ignite or cause an explosion.

5.3 Special measures to be followed by fire fighting groups

You must keep a reasonable distance, take the necessary precautions and even if necessary use self-contained breathing apparatus and encapsulated chemical protection suit.

Section 6 Measures to be taken in case of accidental spillage or accidental leakage.

6.1 Personal precautions, protective equipment and emergency procedures

Personnel performing the cleanup should stay away from low areas where ammonia vapors may accumulate. Keep away from flames, hot surfaces and sources of ignition. Do not allow it to come in contact with eyes, skin or clothing. Do not inhale the gas. If the spill is small, allow it to evaporate or absorb the vapors with water. If there is a large spill, use water fog. It is NOT recommended to neutralize with acid.

6.2 Precautions relating to the environment

Combat the vapors with water mist, avoid falling into drains and superficial and deep water.

6.3 Methods and materials for the containment and cleaning of spills or leaks

Absorbent materials can be used if there is a possibility, put containment barricades to contain the spill. Use adequate ventilation.

Section 7 Handling and storage.

7.1 Precautions that must be taken to ensure safe handling.

Maintain adequate ventilation at all times. It must be handled with caution, it is contained in pressure vessels.

7.2 Conditions of safe storage including any incompatibility.

Containers that contain it must be designed specifically for ammonia, hermetically sealed.

Store away from strong acids, oxidizing agents, halides, metals such as copper and nickel and their alloys

Section 8 Exposure controls / personal protection.

8.1 Control parameters.

| Country | Agent or substance | No Cas | LMPE-PPt | LMPE-CT ó pico | Reference |
|---------|--------------------|-----------|----------|----------------|-------------------|
| Mexico | Anhydrous ammonia | 7664-41-7 | 25 ppm | 35 ppm | NOM-010-STPS-2014 |

- At a time of exposure of 8hr.

8.2 Appropriate technical controls.

The product must be used in closed systems and under adequate conditions and always with good ventilation.

8.3 Individual protection measures such as personal protective equipment EPP.

Use safety glasses or goggles, rubber gloves, nitrile or neoprene cotton clothing, rubber apron or suit against chemical agents, ammonia vapor mask (preferred full face) and safety shoes.



In case of emergency or oxygen-deficient locations, use self-contained breathing apparatus and level A protective suit.

Section 9 Physical and chemical properties.

| | | | |
|---------------------------------|---|---|--|
| Appearance | Clear colorless liquid | Vapor pressure | 125 psi |
| Odor | Very spicy characteristic | Vapor density | 0.59 (aire 1) |
| Umbral of smell | Varies according to the conditions of use | Relative density | 0.618 g/ml |
| pH (dilution to 10%) | Greater than 12 | Solubility. | In water = miscible in any proportion. |
| Melting point | -77.7°C | Partition coefficient n-octanol / water | < 1 |
| Initial point and boiling range | -33.3°C | Autoignition temperature | 630°C |
| Flashpoint | Undetermined | Decomposition temperature | No relevant data |
| Evaporation rate | No data available | Viscosity | Undetermined |
| Inflammability | Does not apply | Molecular weight | 17.03 g/mol |
| Upper explosive limits. | 16 a 25% (vapors) | Other relevant information | No additional information |

Section 10 Stability and reactivity.

10.1 Reactivity.

This material is not reactive under normal environmental conditions

10.2 Chemical Stability.

It is stable under normal environmental conditions in both handling and storage.

10.3 Possibility of dangerous reactions.

It can form potentially explosive atmospheres in air, May react violently with oxidizing materials.

10.4 Conditions to avoid.

Avoid excessive heating.

10.5 Incompatible materials.

Incompatibility with strong acids, oxidizing agents, halides, metals such as copper and nickel and their alloys

10.6 Hazardous decomposition products.

Under normal conditions of use and storage, decomposition should not occur in hazardous products. In case of fire, corrosive vapors of nitrogen oxides, ammonia (gas) and toxic fumes of carbon monoxide can be generated.

Section 11 Toxicological informacion.

11.1 Information on the probable income routes.

- No data available for this product
- 11.2 Symptoms related to physical, chemical and toxicological characteristics.
No data available for this product
- 11.3 Immediate, delayed effects as well as chronic effects produced by a short, long or medium term exposure.
The effects are immediate due to corrosion, and can be permanent in extreme cases according to the time and amounts of exposure
It produces burns by corrosion in contact with the skin and eyes, the severity depends on the time and amounts of exposure.
In the respiratory tract produces irritation, compulsive cough, spasms, drowning, pulmonary edema
By ingestion. Produces burns to mouth, esophagus and stomach.
- 11.4 Numerical toxicological measurements.
By ingestion the estimate by acute exposure ETA is 350
- 11.5 Interactive effects.
No data available for this product
- 11.6 When specific chemical data are not available.
No data available for this product
- 11.7 Mixtures.
Does not apply
- 11.8 Information about the mixture or its components
Does not apply.
- 11.7 Otra información.
Does not apply

Section 12 Eco toxicological information.

- 12.1 Toxicity.
Ammonia CAS: 7664-41-7 LC50 101 mg/l aquatic invertebrates 48hr
- 12.2 Presence and degradability.
It is expected to be easily biodegradable.
- 12.3 Bioaccumulation potential.
No data available on bioaccumulation.
- 12.4 Mobility in the soil.
Because it is a water-soluble material, it can be dispersed in aqueous media.
- 12.5 Other adverse effects.
It can be very toxic to aquatic organisms.

Section 13 Information regarding the disposal of products.

All waste must be handled and disposed of in accordance with municipal, state and federal regulations. Containers that are still empty may contain traces of material, therefore care must be taken to manage them.

Section 14 Information related to transportation.

| | |
|---|---|
| UN Number | UN 1005 |
| Official transportation designation of the United Nations | Ammonia Anhydrous |
| Hazard class in transportation | 2.3 |
| Packing group | N/A |
| Environmental risks | Dangerous for the aquatic environment |
| Environmental precautions for the user | Environmental restrictions must be met |

UN Number
Official transportation designation of the United Nations
Clase de peligros en el transporte
Division

UN 1005
Ammonia Anhydrous
2
2.3



Section 15 Regulatory information.

This safety data sheet has been in accordance with the NOM-018-STPS-2015.

Section 16 Other information including those related to the preparation and updating of safety data sheets.

The information is considered correct, but is not exhaustive and will be used only as guidance, which is based on current knowledge of Anhydrous Ammonia and is applicable to the appropriate safety precautions for the product..

Classification according to the degree of risk:

| | |
|----------------|---|
| Health | 3 |
| Inflammability | 1 |
| Reactivity | 0 |

Review date.

June 30, 2023

Next revision.

In a year or when a change occurs

Main bibliographic sources

| | |
|---------------------|---|
| NOM-018-STPS-2015 | Harmonized system for the identification and communication of hazards and risks by hazardous chemical substances in work centers. |
| NMX-R-019-SCFI-2011 | Harmonized System of Classification and Communication of Hazards of Chemical Products |
| NOM-010-STPS-2014 | Limits of Exposure to Chemical Substances Contaminants of the Work Environment (NOM-010-STPS-2014) |
| GRENA 2016 | Chemical emergency response guide |