Nitric Acid MSDS

1. Product Identification

Item	Information
Product Name	Nitric Acid
Chemical Name	Nitric Acid
Chemical Formula	HNO_3
CAS Number	7697-37-2
EC Number	231-714-2
Product Type	Strong inorganic acid
Recommended Use	Fertilizer, chemical processing, metal treatment, laboratory and industrial applications
Supplier	ATDM

2. Hazard Identification

Nitric Acid is a **highly corrosive and strongly oxidizing chemical**.

Main hazards include:

- Causes severe skin burns and eye damage.
- May cause serious respiratory irritation.
- Strong solutions may intensify combustion because of their oxidizing properties.
- Reacts strongly with many organic materials, reducing agents, bases, and incompatible metals.
- Corrosive vapors may damage respiratory tissues.
- Contact with some metals may generate hazardous gases.

Workers must handle the product only with suitable protective equipment and ventilation.

3. Composition / Information on Ingredients

Component	CAS Number	Typical Concentration
Nitric Acid	7697-37-2	Approx. 50–68%
Water	7732-18-5	Balance

Actual concentration may vary according to the supplied grade.

4. First-Aid Measures

Eye Contact

Immediately rinse the eyes with clean water for at least 15 minutes.

Remove contact lenses when easy to do.

Continue rinsing and seek urgent medical attention.

Skin Contact

Immediately remove contaminated clothing.

Wash the affected skin with plenty of water for at least 15 minutes.

Seek medical attention for burns or persistent irritation.

Inhalation

Move the affected person to fresh air immediately.

Keep the person at rest and monitor breathing.

Seek urgent medical attention, especially after significant vapor exposure.

Ingestion

Rinse the mouth carefully.

Do not induce vomiting.

Never give anything by mouth to an unconscious person.

Seek immediate medical attention.

5. Fire-Fighting Measures

Nitric Acid itself does not normally burn. However, its strong oxidizing properties may increase the intensity of a fire involving combustible materials.

Suitable extinguishing media should match the surrounding fire.

Firefighters should:

- Wear full protective clothing.
- Use self-contained breathing apparatus.
- Avoid direct contact with acid vapors.
- Cool exposed containers with water spray when safe.
- Prevent contaminated firefighting water from entering drains or waterways.

Heating may release toxic nitrogen oxide fumes.

6. Accidental Release Measures

Evacuate unnecessary personnel from the affected area.

Provide adequate ventilation and wear suitable chemical protective equipment.

Keep the spill away from combustible materials, organic substances, metals, and incompatible chemicals.

Prevent the product from entering drains, soil, or natural waterways.

Only trained personnel should handle significant spills using approved chemical-spill procedures.

Do not use incompatible absorbents such as combustible organic materials.

7. Handling and Storage

Safe Handling

- Handle in well-ventilated areas.
- Avoid inhaling fumes or mist.
- Avoid skin and eye contact.

- Wear suitable protective equipment.
- Keep away from incompatible chemicals.
- Use corrosion-resistant transfer equipment.
- Never mix with other chemicals unless the process specifically requires it.

Storage

Store Nitric Acid in a cool, dry, secure, and well-ventilated location.

Keep containers tightly closed and clearly labeled.

Store away from:

- Organic materials
- Flammable substances
- Reducing agents
- Alkalis
- Reactive metals
- Incompatible chemicals

Use only approved corrosion-resistant storage systems.

8. Exposure Controls / Personal Protection

Engineering controls should include adequate ventilation and, where necessary, local exhaust systems.

Recommended PPE includes:

Eye Protection

Use chemical safety goggles and suitable face protection.

Hand Protection

Wear chemical-resistant gloves suitable for strong acids.

Body Protection

Use acid-resistant protective clothing, footwear, and apron where required.

Respiratory Protection

Where ventilation cannot adequately control fumes, use suitable respiratory protection according to workplace risk assessment and applicable regulations.

9. Physical and Chemical Properties

Property	Typical Information
Appearance	Clear to pale yellow liquid
Odor	Sharp, irritating
Chemical Formula	HNO_3
Molecular Weight	63.01 g/mol
Solubility in Water	Completely miscible
pH	Strongly acidic
Boiling Point	Depends on concentration
Density	Depends on concentration
Flammability	Non-flammable
Oxidizing Properties	Strong oxidizer

Exact physical values depend on concentration and product grade.

10. Stability and Reactivity

Nitric Acid remains stable under recommended storage conditions.

However, it reacts strongly with many substances.

Avoid contact with:

- Bases
- Reducing agents
- Organic materials
- Combustible substances
- Certain metals
- Sulfides
- Carbides
- Reactive chemicals

Hazardous decomposition can release nitrogen oxides.

11. Toxicological Information

Exposure may affect the skin, eyes, respiratory system, and gastrointestinal tract.

Acute Effects

- Severe skin burns
- Serious eye injury
- Respiratory irritation
- Coughing
- Breathing difficulty
- Tissue damage after ingestion

Severe inhalation exposure may cause delayed respiratory complications.

12. Ecological Information

Large releases may alter the pH of soil and water.

Acidification can harm aquatic organisms and damage local ecosystems.

Prevent uncontrolled release into:

- Surface water
- Groundwater
- Soil
- Drainage systems

Dispose of contaminated materials according to applicable environmental regulations.

13. Disposal Considerations

Dispose of Nitric Acid and contaminated materials through authorized chemical-waste procedures.

Do not discharge concentrated product directly into drains, waterways, or soil.

Only qualified personnel should perform neutralization or treatment.

Follow local and national hazardous-waste regulations.

14. Transport Information

Nitric Acid is generally regulated as dangerous goods during transportation.

Transport requirements may depend on concentration.

Typical classification information may include:

Item	Typical Information
UN Number	UN 2031
Proper Shipping Name	Nitric Acid
Hazard Class	Class 8, with additional oxidizing classification depending on concentration
Main Hazard	Corrosive / Oxidizing
Packing Group	Depends on concentration

Always confirm the exact transport classification for the supplied concentration before shipment.

15. Regulatory Information

Nitric Acid must comply with applicable national and international chemical handling, labeling, workplace safety, environmental, and dangerous-goods transportation regulations.

Customers should check the regulations that apply in the destination country.

16. Other Information

This MSDS provides general safety information for **Nitric Acid**.

Because concentration and product specifications can change hazard classifications and transport requirements, customers should always use the current supplier-issued SDS for the exact grade they purchase.

ATDM supplies and exports Nitric Acid for industrial B2B customers and can provide relevant technical and safety documentation according to the supplied product specification.