**SDS #:** 552
**Revision Date:** December 3, 2018

1/20/2025: File reviewed; more current MSDS/SDS not available. CAS

# Safety Data Sheet (SDS)

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

## Nitric Acid 9 M - 15.8 M (Concentrated)

**Signal Word**
**DANGER**

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261
Chemtrec Emergency Phone Number: (800) 424-10054

## SECTION 2 — HAZARDS IDENTIFICATION

Pictograms

Hazard class: Oxidizing liquids (Category 3). May intensify fire; oxidizer (H272). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Corrosive to metals (Category 1). May be corrosive to metals (H290).

Hazard class: Skin corrosion or irritation (Category 1). Causes severe skin burns and eye damage (H314). Do not breathe mist, vapors or spray (P260).

Avoid contact with acetic acid and readily oxidized substances.

Industrial exposure to nitric acid vapors and mists is listed as a known human carcinogen by IARC (IARC-1).

## SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

| Component Name | CAS Number | Formula | Formula Weight | Concentration |
|---|---|---|---|---|
| Nitric acid | 7697-37-2 | $HNO_3$ | 63.01 | 40-70% |
| Water | 7732-18-5 | $H_2O$ | 18.00 | 30-60% |
| Concentrate is 70% (15.8 M) | | | | |

## SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.
**If inhaled:** Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).
**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338).
**If on skin or hair:** Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).
**If swallowed:** Rinse mouth. Do NOT induce vomiting (P301+P330+P331).

## SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution, but a strong oxidizer.
Dangerous fire risk in contact with acetic acid, combustible or organic materials.

**NFPA Code**
H-4

| | |
|---|---|
| When heated to decomposition, may emit toxic fumes. | F-0 |
| In case of fire: Use a tri-class dry chemical fire extinguisher. Take any precautions to avoid mixing with combustibles (P221+P370+P378). | R-0<br>OX |

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material, neutralize with sodium bicarbonate or calcium hydroxide, and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

## SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #3. Store with amides, nitrates, nitrites and azides.
Store in a dedicated acid cabinet and away from any source of water; if an acid cabinet is not available, store in a Flinn Saf-Cube™. Never store with acetic acid. Keep and store away from clothing and combustible materials (P220). Take any precautions to avoid mixing with combustibles (P221). Use only in a hood or well-ventilated area (P271).

## SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, eye protection, and face protection (P280). Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271).
Exposure guidelines: (as nitric acid) PEL 5 mg/m$^3$ (OSHA); TLV 5.2 mg/m$^3$ STEL 10 mg/m$^3$ (ACGIH)

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Transparent, colorless or yellow, fuming liquid. | Boiling point: 82.6 °C |
| Suffocating, acrid odor. | pH: <1> |
| Soluble: Miscible with water, considerable heat is released. | Specific gravity: 1.41 |
| | Melting point: -41.6 °C |
| Viscosity: 0.746 mPa.s at 25 °C | Vapor pressure: 63.1 mm Hg at 25 °C |

## SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with bases, alcohols, alkali and other earth metals, metals, plastics, hydrogen peroxide, organic materials, amines, acetic acid, and other readily oxidized substances. Corrodes metals and most plastics. Produces heat and fumes when diluted with water. Shelf life: Fair, product may turn yellow due to release of nitrogen dioxide on exposure to light. See Section 7 for further information.

## SECTION 11 — TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Acute effects: Eye, skin, mucous membrane irritation. | ORL-HUM $LDL_0$: 430 mg/kg |
| Chronic effects: Dental erosion, chronic bronchitis. | IHL-RAT $LC_{50}$: 244 ppm/0.5 hr |
| Target organs: Eyes, skin, respiratory system, teeth. | SKN-RBT $LD_{50}$: N.A. |

## SECTION 12 — ECOLOGICAL INFORMATION

May be harmful to aquatic organisms.

## SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #24b is one option.

## SECTION 14 — TRANSPORT INFORMATION

Shipping name: Nitric acid. Hazard class: 8, Corrosive. UN number: UN2031.

## SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-714-2), RCRA code D001, D002, D003.

## SECTION 16 — OTHER INFORMATION

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N.A. = Not available, not all health aspects of this substance have been fully investigated.
N/A = Not applicable

**Consult your copy of the Flinn Science Catalog/Reference Manual for additional information about laboratory chemicals.**

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