Section 1 - Product and Company Identification

Product name：Nitric acid(69~70%)
Other names：--
Product use：production of fertilizer and explosives; organic synthesis (Dye、medicine、explosive、nitrocellulose、nitrate)；metallurgy；photogravure technique；Steel etching，Ore flotation；Urea resin esters；Rubber chemicals；Nuclear fuel re-processing Etc.
Supplier's name：San Fu Chemical Co., Ltd., Shan Hua Plant
Supplier's address：1,Sec.1,Huanyuan E..Rd.,Liuying Dist.,Tainan, Taiwan 736.
Supplier's phone：886-6-6231821 Emergency phone：886-6-6231821
FAX.：886-6-6231822

Section 2 - Hazards Identification

Classification：

1.	Oxidizing Liquid	Category 3
2.	Metal Corrosion	Category 1
3.	Skin Corrosion /Irritation	Category 1
4.	Serious Eye Damage/Eye Irritation	Category 1
5.	Toxic Substances to Specific Organ System	Repeat Exposure Category 2

The Most Important Hazards and effect

Label element：

- Hazard symbol： Corrosion, Flame, Health Hazard

- Signal word：Danger

Hazard statement：

1. May intensify fire; oxidant
2. May cause metal corrosion
3. Cause Severe skin burns and eye damage
4. Cause serious eye injury
5. long expose may cause harm to the lungs

Precautionary statement：

1. Place the containers in well ventilated area
2. Do not inhale gas/vapor/fog
3. In case of contact with eyes, flush with plenty of water, and seek medical attention immediately.
4. Wear goggles/masks

Others Hazard：/

Section 3 - Composition/Information On Ingredients

pure substance：

Chemical name：Nitric acid
Synonyms：Nitric acid、Hydrogen nitrate、Aqua fortis、Azotic acid

CAS No.：07697-37-2
Ingredient contributing to the hazard(%)：69~70%

Section 4 - First Aid Measures

The First-aid Information：

- Inhalation：
  1. Determine own safety before rescue, best rescue with 2 person。
  2. Remove source of harm or moved exposed person to fresh air.
  3. If having difficulties in breathing, oxygen is provided by trained officers under doctor's direction。
  4. If not necessary，do not move the subject/patient。
  5. The symptoms of lung injury will show after 48 hours of exposed to the hazard.
  6. Seek medical attention immediately.
- Skin Contact：
  1. Avoid direct contact to the chemical，wear gloves.
  2. Use warm water to gently wash contaminated area of the skin for at least 20 – 30 min. Do not stop during the process.
  3. Remove contaminated cloths, shoes, and leather products.
  4. Seek medical attention immediately.
- Eye Contact：
  1. Immediately lift lower and upper eyelids and gently flush eyes with plenty of warm water for at least 30min.
  2. Seek medical attention immediately.
- Ingestion：
  1. If patient is about to lose consciousness, already lose consciousness or having seizures, do not oral fed patient.
  2. Let patient gargle with water thoroughly.
  3. Do not induce vomiting.
  4. Let patient drink 240-300 ml of water，if there is milk, drink water first than milk.
  5. If patient continue vomiting, lean the body forward to prevent swallowing the vomits, repeat gargling.
  6. Seek medical attention immediately.

The Most Important Symptoms and Hazardous Effects： burn、corrosion of skin and esophagus

Protection of First-aiders：Wear class C equipment to do first aid in a safety zone

Notes to a Physician：

1. Avoid gastric lavage and lead to vomiting.
2. Delay occurrence of the symptoms

Section 5 - Fire Fighting Measures

Extinguishing Media：

This is non-inflammable chemical，select appropriate fire extinguishing media to the surrounding fire.

Specific Hazards when Fire-fight：

Concentrated Nitric Acid is strong oxidant，itself is not flammable，but with other reducing agent

and flammable organic reaction maybe cause heat that will induce flame or explosion.
Specific Fire-fighting Procedure： Spray water mist to the container and building that is exposed to the fire/flame.
Specific Protection of Firefighters： To wear full-body chemical-protective clothing and self-contained breathing apparatus in pressure demand. (If necessary, plus anti-Semitic fire coat aluminum coating)

Section 6 - Accidental Release Measures

Personal Precautions： 1. Restrict access to area until completion of clean up. 2. Ensure clean up is conducted by trained personnel only. 3. Must wear proper personal protection equipment.
Environmental Precautions： 1. Keep the leaked area ventilated. 2. Remove all sources of ignition. 3. Inform Government Safety and environmental protection-related units
Methods for Cleaning up： 1. DO NOT touch spilled or leaked material. 2. Prevent leakage of materials into the sewer, drainage and closed area. 3. Stop leak if without risk. 4. Use sand and soil and other agent that is non-reactive to the material for containment. 5. Small spill：Absorb with sand and soil or other agent that is non-reactive to the material. Agent used to adsorb the material also become harmful; place them in proper covered disposal containers with labels. Other small spill can flushed with large amount of water. 6. Large Spill：Contact fire department, emergency unit and supplier for help 7. Wash leakage area with water, but do not allow water to seep into containers. 8. Large leak may need to spray water mist to stop the vapor.

Section 7 - Handling and Storage

Handling： 1. Prevent the release of vapor or droplets into the air of the workplace. 2. Maintain the ventilation of the area. 3. Slowly add acid while diluting the solution to prevent splashing. 4. Use it with possible minimum amount and specific ventilated area. 5. Labeled the container. Secure and cover the container when not in use to prevent damage. 6. Empty containers may contain residue, which is hazardous.
Storage： 1. Stored in cool, dried and well ventilated area. Avoid direct contact with the sun light and other heat source. 2. Should leak the air of the container and check the air pressure at least once a week. 3. Storage area should be build with anti-corrosive materials, lighting and ventilation equipment. 4. Store limited amount，regularly check whether the container has damage or leak. 5. Storage area should have ready-to-use fire-fighting equipment and agent.

Section 8 - Exposure Controls & Personal Protection

Engineering measures：
1. Confined process, local exhaust.
2. Independent exhaust system using anti-corrosive materials

Control parameters			
TWA	STEL	Ceiling	Biological standards
2ppm	4ppm	--	--

Personal protective equipment：Choose the right protective equipment in accordance with the working environment and the concentration of the hazardous substances.

- Respiratory Protection：
  1. Below 25 ppm：Wear continuous-flow mode respirator with oxygen contained breathing apparatus, anti-nitric acid chemical filtered tank , portable power gas and air purifier, mask with anti-nitric filtered tank and NIOSH approved full-face piece self-contained breathing apparatus.
  2. Unknown concentration：Wear a NIOSH approved full-face piece self-contained breathing apparatus and positive pressure mode.
  3. Escape：mask with anti-nitric filtered tank、self-contained breathing apparatus and positive pressure mode.
- Hand Protection： Impervious gloves，best made with Responder
- Eye Protection： Full covered Gas-tight chemical-safety goggles.
- Skin and Body Protection： Full body rubber (Responder) made protective suite, and boots.

Hygiene measures：
1. Cultivate proper habits, prohibit eating and drinking in the working area, wash hand after finishing the work.
2. Take off contaminated work cloths as soon as the work is done, wash before wearing or disposal, and should inform the laundry staff about the hazardous agent.
3. Prohibit smoking, eating and drinking in the work area.
4. After dealing with the material，should wash hand completely.
5. Maintain cleanliness in the work area.

Section 9 - Physical & Chemical Properties

Appearance：Liquid	Odor：Spice, smell of suffocation Olfactory Threshold：0.75-2.5ppm (detected)
Color：Transparent	Melting Point: -41℃ (70%) Aqueous solution
pH value：1.0(0.1M solution)	Boiling point/boiling range：122℃(70%)
Flammability: --	Flash point：--
Decomposition temp：--	Test method：--
Auto ignition temp：460℃	Explosion properties：--
Vapor pressure：5.5 mmHg@20℃(70%)	Vapor density：2.17
Density：1.41(70%)	Solubility：Immiscible (water)
log Kow：--	Evaporation Rate：--

Section 10 - Stability & Reactivity Data

Stability：stable
Possible hazardous reactions under specific conditions： 1. Most of the metal, metal oxidizers and metal powder (such as Antimony, bismuth, aluminum, manganese, magnesium, titanium) May result in violent reaction or explosion and heat. May release nitrogen oxides. 2. Organic substances (such as Anhydride, Alcohol, Amine, Aldehyde, Ether, Hydrocarbon, Nitryl aromatic family, Alkane): may result fierce explosive response or spontaneous combustion 3. Organic solid (Such as paper, cloth, charcoal, Sawdust, All kinds of sulfides, Non-metal hydride and carbide): will cause instant or delayed explosion, violent reaction or spontaneous combustion. 4. Reductant：Cause fierce explosive reactions.
Conditions to avoid：Light
Materials to avoid： 1. Most of the metal, metal and metal oxide powder (such as Antimony, bismuth, aluminum, manganese, magnesium, titanium) 2. Organic substances (such as Anhydride, Alcohol, Amine, Aldehyde, Ether, Hydrocarbon, Nitryl aromatic family, Alkane) 3. Organic solid (Such as paper, cloth, charcoal, Sawdust, All kinds of sulfides, Non-metal hydride and carbide): will cause instant or delayed explosion, violent reaction or spontaneous combustion. 4. Reductant
Hazardous decomposition products：Nitric Oxide.

Section 11 - Toxicological Information

Route of exposure：Inhalation, Skin, Eye, Ingestion
Symptoms： Stimulated sense, sense of suffocation, difficulty in breathing.
Immediate Toxicity： 1. Skin： 1.1 Dilute solution may stimulate the skin minimally and cause yellow-greed mark. Contaminated area may harden but no injuries. 1.2 Concentrate nitric acid can cause severe pain and burn, contaminated area may leave scar and result permanent damage. 1.3 If the contaminated area is too large and did not immediately wash may be fatal. 2. Inhalation： 2.1 Vapor and droplet may cause suffocation, Burning throat or cough、Chest pain and breathing difficulties. The above-mentioned symptoms may be minor and appear after few hours. 2.2 Some serious symptoms may be no symptoms and appear in 24 hours of breathing difficulties and skin (Cyanosis), Progress can be quickly and as a result of bronchial pneumonia or pulmonary edema and death. 3. Eye： 3.1 Vapor will irritate the eyes and stimulate tears 3.2 Expose to vapor too long, will severely irritate and damage the eyes. 3.3 Concentrated nitric acid will cause instant sever eye damage lead to blindness , and may not be able to recover

4. Ingestion：
   4.1 Corrode and burn the mouth, throat, esophagus and stomach; Symptoms include difficulty swallowing, nausea, vomiting, diarrhea, prostration, or even death.
   4.2 Inhalation will cause lungs cause serious injury and death, the symptoms of breathing difficulties. May be delayed for several hours.
- LD_{50}: --
- LC_{50}: --

Specific effects：
1. Could cause lung or airway edema and lead to pneumonia and chronic bronchitis.
2. Will damage teeth enamel.
3. 21150mg/Kg (Pregnant1-21days rodent，ingest) caused embryo toxic.

Section 12 - Ecological Information

Ecotoxicology：
- LC_{50}(fish)：--
- EC_{50}(Aquatic Invertebrates)：--
- Bioconcentration factor (BCF)：--

Persistence and degradability：
1. The acid in the water will be neutralized by the rigid mineral (Ca, Mg). The nitrate root ion will remain exist for a long period of time but the ion will be the nutrient for the plant.
2. The quantity of the nitrate in the water will irritate the growth of the plankton and water plants.

- Half-Life (Air)：--
- Half-Life (Water surface)：--
- Half-Life (Groundwater)：--
- Half-Life (Soil)：--

Bioaccumulative potential：Expect no accumulation in the body.

Mobility in soil：
If released in the soil, the large amount of acid will transfer and infiltrate to the groundwater layer.

Other adverse effects：--

Section 13 - Disposal Considerations

Methods of disposal：
1. Under conditions that meet national and local regulations.
2. Follow the storage condition to manage the dispose.
3. Consider to manage with Hygiene Bury method.

Section 14 - SDS Transport Information

UN classification number：2031

Proper D.O.T Shipping Name：Nitric acid, with the exception of red smoke, with not more than 70% nitric acid

Hazard Class：Category 8 Corrosive substances 、Category 5.1 Oxidizing substances

Packing Group：II

Marine pollution：No
Specific precautionary transport measures and conditions：--

Section 15 - Regulatory Information

Regulations：

1. Occupational Safety and Health Act
2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals
3. Standards of Specific Chemical Substances Hazard Prevention
4. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplac
5. Road Traffic Safety Regulations
6. Industrial Waste Storage and Disposal Regulations
7. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.
8. Assessment and Classification Administration of Hazardous Chemicals

Section 16 - Other Information

Literature references	1. CHEMINFO Database，CCINFO Disc，2005-3 2. RTECS Database，TOMES PLUS Disc，Vol.65，2005 3. HSDB Database，TOMES PLUS Disc，Vol.65，2005 4. ChemWatch Database，2005-11	
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	Name：X.Z.Lin	
Issue date	Dec-17th 2025	Revision：**6**
Re-revision date	Dec-16th 2028	
Remarks	Symbols Explanations: "--" No information is available at this time. "/" Not applicable to this substance.	

■ This information above has consulted national or international papers and manufacturer or supplier's provided information. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Users should make their own determination of the suitability of the information for their particular purposes.