1. Identification of Substance

Trade name	**Weak Nitric Acid, 50% – 65%**
Designation	Chemical intermediate

2. Hazards Identification

Human Health

Skin contact Eye Contact Ingestion	Causes severe burns to all parts of the body.
Inhalation	Vapour is corrosive to the airways. Fluid buildup in the lungs can occur after severe exposure with consequential shortness of breath and may cause acute pulmonary oedema. Some lung effects may be delayed.
Long Term Effects	Not known
Fire and Thermal	Inhalation of decomposition gases can produce oxides of nitrogen and hydrogen with effects detailed above.
Environment	Spillage should be contained prior to neutralisation/recovery. See Section 6.
Other	Contact with combustible materials may cause fire. Reaction with most common metals liberates toxic oxides of nitrogen and hydrogen.

3. Composition/ Information on Ingredients

CAS Number	Nitric Acid	7697-37-2
	Demineralised water	7732-18-5
EC (EINECS) Number		231-714-2

Alternative names	Aqua fortis, Azotic acid
Molecular Formula	HNO3
Product description	A clear liquid varying in colour from 'water-white' to pale straw
Form	Liquid
Concentration	50% -70%
Classification	Corrosive

4. First Aid Measures

Product

IN ALL CASES OF CONTACT WITH NITRIC ACID SEEK IMMEDIATE MEDICAL ATTENTION

Skin contact	Continued washing of the affected area, with copious amounts of water, until medical help arrives.
Eye contact	Immediately irrigate all parts of the eye with eye wash solution or clean water, holding eyelids apart with assistance, if available. Continue irrigation until medical assistance arrives
Ingestion	Do not induce vomiting. Give large quantities of water or milk to drink. Never give liquids to an unconscious person.
Inhalation	Remove from source of exposure. Give oxygen if there is 'blueness' around the mouth. Apply artificial resuscitation if breathing stops. Keep under observation as symptoms may be delayed.

Fire and Decomposition Products

Skin contact	Wash affected areas as for exposure detailed above.
Inhalation	Remove from source of exposure to fumes/vapours. Keep warm and at rest even though no symptoms may be evident. See section on 'Inhalation' above.

5. Fire fighting Measures

If product is not directly involved in the Fire

Oxides of nitrogen may be evolved if the fire causes decomposition of the product. Keep in the fire: containers cool, where possible.

If product is involved in the fire:

Nitric acid is not combustible. Call the fire brigade. Avoid breathing fumes (toxic). Approach from upwind of the fire. Use a self-contained breathing apparatus if fumes are being entered. Fight the fire appropriate to the materials involved. Consider effects of reaction between other materials and nitric acid. Contain fire fighting water if contaminated. Inform the local authorities immediately if water containing nitric acid enters any drains or watercourse.

Extinguishing media

Fight the fire appropriate to the materials involved.

6. Accidental Release Measures

Spillages

Any spillage of nitric acid should be approached wearing appropriate levels of personal protection. Do not allow spillages to mix with combustible or organic substances. Absorb spillages with dry sand, earth, proprietary absorbents or other inert material. Depending on the degree or nature of contamination, dispose of by firstly neutralising with anhydrous sodium carbonate, a solution of sodium carbonate or lime. Take care to avoid contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses.

7. Handling and Storage

Handling

Basic personal protective equipment, (PPE), includes, PVC gloves, chemical goggles, Wellington boots or rubber boots and PVC overalls. Individuals should make a judgement as to whether equivalent items are suitable for use.
Provide adequate ventilation and do not breathe fumes. Do not exceed recommended exposure levels.

Storage

Bulk nitric acid is best stored in low-carbon stainless steels, e.g. 316L or 304L. Plastics are often used for storing and transporting smaller quantities. Keep away from heat, direct sunlight, reducing agents, combustible materials and substances mentioned in Section 10.

8. Exposure Controls/ Personal Protection

Hazardous Ingredients	**Workplace Exposure Limits**			
	Long term exposure limit (8 hr TWA reference period)		**Short-term exposure limit (15 min reference period)**	
	ppm	**mg/m^{-3}**	**ppm**	**mg/m^{-3}**
Nitric Acid	-	-	1	2.6

Precautionary/Engineering Measures

Local Exhaust Ventilation may be required to reduce exposure levels in certain circumstances
Personal Protection See Section 7.

9. Physical and Chemical Properties

Appearance:	Liquid. Evolves vapours at all strengths but vapours increase as the strength increases.
Colour:	Almost colourless through to pale yellow at higher strengths.
Odour:	Fumes are pungent and choking.
pH:	Highly acidic

Melting point:	-23oC (60%), -40oC (70%)
Boiling point:	118oC (60%), 120oC (70%)
Vapour pressure (Pascals):	733 (70%)
Liquid density:	1.36 at 60%, 1.42 at 70%
Solubility in water:	Soluble in water with evolution of heat.
Vapour density:	2 approx, (Air = 1)

10. Stability and Reactivity

Stability	Nitric acid is stable under normal conditions of storage, handling and use.
Materials to avoid	Contact with combustible materials, reducing agents, strong bases, organic materials, finely divided metals, chlorates and carbides.

Hazardous Reactions and Decomposition Products

Avoid close proximity to sources of heat or fire. Reaction with most common metals liberates toxic oxides of nitrogen and hydrogen. See also sections 3 and 9.

11. Toxicological Information

General	Nitric acid can be fatal if swallowed or inhaled in sufficient quantity. It will immediately cause corrosion of, and damage to the gastrointestinal tract. The severity of acute effects is such that significant repeated or prolonged exposure is unlikely.
Toxicity Data	Nitric acid LC50 (inhalation, rat) 244 ppm (NO_2)/30 m, 67 ppm (NO_2)/4 hrs Nitric acid LD50 (oral, rat) >90 mg/kg. May cause methaemoglobinaemia (see Section 3).

12. Ecological Information

Mobility	The NO_3^- ion is mobile.
Persistence/Degradability	Nitrogen follows the natural nitrification / denitrification cycle to give nitrogen or nitrogen oxides.

Bio-accumulation	The substance has a low potential for bio-accumulation.
Eco-toxicity	Large discharges may contribute to the acidification of water and be harmful to aquatic life.

13. Disposal Considerations

Disposal	Dispose of in a manner consistent with prevailing local, national or state regulations.

14. Transport Information

Air

ICA O/IATA Class	- primary : 8
	- subsidiary : None
UN packing group (air) :	II

Sea

IMDG Class	- primary : 8
	- subsidiary : None
UN packing group :	II
Proper Shipping Name :	UN 2031, NITRIC ACID

Road and Rail

UN No. and proper shipping name : UN 2031, NITRIC ACID

UN Classification :	Class 8. Corrosive
Packing Group:	II
Emergency Action Code: 2R	
ADR HIN:	80

UK TANKER REGULATIONS: DANGEROUS GOODS

Emergency Action Code:	2R

15. Regulatory Information

EU Directives & Regulations :	96/82/EC (Control of Major Accident Hazards involving Dangerous Substances) and 2003/105/EC (amendment)
EEC Classification	CORROSIVE
Risk Phrases	**R 35** Causes severe burns
Safety Phrases	**S 23** Do not breathe fumes **S 26** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice **S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection **S 45** In case of accident or if you feel unwell, seek medical advice immediately, (show the label where possible)

16. Other Information

The statements contained herein this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the user / manufacturer/ seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. M/s Amos Enterprise Ltd makes no Warranties expressed or implied in respect of the adequacy of this document for any particular purpose.