Nitric acid solution

51155-1L

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SECTION 1. IDENTIFICATION

Product name	:	Nitric acid solution
Number	:	000000021293
Product Use Description	:	Laboratory chemicals
Manufacturer or supplier's details	:	Honeywell International Inc. 115 Tabor Road Morris Plains, NJ 07950-2546
For more information call	:	1-800-368-0050 +1-231-726-3171(Monday-Friday, 9:00am-5:00pm)
In case of emergency call	:	**Medical: 1-800-498-5701 or +1-303-389-1414**
	:	**Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
	:	
	:	(24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Color	:	colourless
Odor	:	weak

Classification of the substance or mixture

Classification of the substance or mixture	:	Corrosive to metals, Category 1 Acute toxicity, Category 4, Inhalation Skin corrosion, Category 1A Serious eye damage, Category 1

GHS Label elements, including precautionary statements

Symbol(s) :

Signal word : Danger

Hazard statements : May be corrosive to metals.
Causes severe skin burns and eye damage.
Harmful if inhaled.

Precautionary statements : **Prevention:**
Keep only in original container.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Store in corrosive resistant stainless steel container with a resistant inner liner.

Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : HNO3

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Water	7732-18-5	>=70.00 - <90.00 %
Nitric acid	7697-37-2	>=20.00 - <30.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Move out of dangerous area. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation : Remove to fresh air. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician immediately.

Skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

Ingestion : Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician immediately.

Notes to physician

Indication of immediate : Health injuries may be delayed. Medical supervision for

medical attention and special treatment needed, if necessary	minimum 48 hours.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Foam Carbon dioxide (CO2) Dry powder
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	May intensify fire; oxidizer. Contact with metals liberates hydrogen gas. Cool closed containers exposed to fire with water spray. In case of fire hazardous decomposition products may be produced such as: nitrogen oxides (NOx)
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and protective suit. No unprotected exposed skin areas.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Do not use a solid water stream as it may scatter and spread fire. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. The product itself does not burn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Immediately evacuate personnel to safe areas. Wear personal protective equipment. Unprotected persons must be kept away. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Ensure adequate ventilation. Do not breathe vapours or spray mist.

Do not get in eyes, on skin, or on clothing.

Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Methods and materials for containment and cleaning up	:	Ventilate the area. With acids neutralization takes place under development of heat. Neutralise with the following product(s): lime Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling	:	Wear personal protective equipment. Use only in well-ventilated areas. When diluting, add acids to water, never the other way around. On dilution or dissolving in water, considerable heating always occurs. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Conditions for safe storage, including any incompatibilities	:	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible substances. Do not store near combustible materials. Store in a place accessible by authorized persons only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing.

Engineering measures : Use with local exhaust ventilation.

Eye protection : Face-shield
Safety goggles

Hand protection : Impervious gloves
Gloves must be inspected prior to use.
Replace when worn.

Skin and body protection : Wear suitable protective equipment.
Wear as appropriate:
Complete suit protecting against chemicals

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hygiene measures : General industrial hygiene practice.
Take off all contaminated clothing immediately.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Nitric acid	7697-37-2	TWA : Time weighted average	(2 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Nitric acid	7697-37-2	STEL : Short term exposure limit	(4 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended

Nitric acid	7697-37-2	STEL : Short term exposure limit	10 mg/m3 (4 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Nitric acid	7697-37-2	REL : Recommended exposure limit (REL):	5 mg/m3 (2 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Nitric acid	7697-37-2	PEL : Permissible exposure limit	5 mg/m3 (2 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Nitric acid	7697-37-2	STEL : Short term exposure limit	10 mg/m3 (4 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Nitric acid	7697-37-2	TWA : Time weighted average	5 mg/m3 (2 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Color : colourless

Odor : weak

Odor threshold	:	Note: no data available
pH	:	Note: acidic
Melting point/range	:	Note: no data available
Boiling point/boiling range	:	ca. 100 °C
Flash point	:	Note: Not applicable
Flammability	:	Not applicable
Lower explosion limit	:	Note: Not applicable
Upper explosion limit	:	Note: Not applicable
Vapor pressure	:	23 hPa
Vapor density	:	Note: no data available
Density	:	1.147 g/cm3 at 20 °C
Water solubility	:	Note: completely miscible
Partition coefficient: n-octanol/water	:	Note: no data available
Ignition temperature	:	Note: Not applicable
Auto-ignition temperature	:	Note: not auto-flammable
Viscosity, dynamic	:	Note: no data available

Viscosity, kinematic	:	Note: no data available
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	63.01 g/mol
Bulk density	:	Note: Not applicable
Corrosivity	:	Note: Corrosive to metals

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Gives off hydrogen by reaction with metals. Hazardous polymerisation does not occur.
Conditions to avoid	:	Keep away from heat. Keep away from combustible material. Keep away from reducing agents. Protect from moisture.
Incompatible materials	:	As oxidising agent, attacks organic substances such as wood, paper, fats. Corrosive in contact with metals Gives off hydrogen by reaction with metals. Reactions with organic substances. Flammable materials Incompatible with bases.
Hazardous decomposition products	:	In case of fire hazardous decomposition products may be produced such as: nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	Note: no data available Toxicity is determined by the corrosivity of the product.
Acute inhalation toxicity	:	LC50: 2500 ppm Exposure time: 1 h Species: Rat Method: OECD Test Guideline 403
Acute dermal toxicity	:	Note: Toxicity is determined by the corrosivity of the product.
Skin irritation	:	Species: Rabbit Result: Corrosive
Eye irritation	:	Note: no data available
Sensitisation	:	Note: no data available
Repeated dose toxicity	:	Note: Not classified due to data which are conclusive although insufficient for classification.
Genotoxicity in vitro	:	Note: Not classified due to data which are conclusive although insufficient for classification.
Carcinogenicity	:	Species: not specified Note: no data available
Reproductive toxicity	:	Species: not specified Note: Not classified due to data which are conclusive although insufficient for classification.

Further information : Note: Causes severe burns.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish : Note: no data available

Toxicity to daphnia and other aquatic invertebrates : Note: no data available

Toxicity to algae : Note: no data available

Elimination information (persistence and degradability)

Biodegradability : Note: Not applicable
The methods for determining biodegradability are not applicable to inorganic substances.

Further information on ecology

Ecotoxicology Assessment

Results of PBT assessment
Not applicable

Additional ecological information : Neutralisation will reduce ecotoxic effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 2031
Proper shipping name : Nitric acid

	Class		8
	Packing group		II
	Hazard Labels		8
IATA	UN/ID No.	:	UN 2031
	Description of the goods	:	Nitric acid
	Class	:	8
	Packaging group	:	II
	Hazard Labels	:	8
	Packing instruction (cargo aircraft)	:	855
	Packing instruction (passenger aircraft)	:	851
	Packing instruction (passenger aircraft)	:	Y840
IMDG	UN/ID No.	:	UN 2031
	Description of the goods	:	Nitric acid
	Class	:	8
	Packaging group	:	II
	Hazard Labels	:	8
	EmS Number	:	F-A, S-B
	Marine pollutant	:	no
	IMDG Code segregation group		1 – ACIDS,

SECTION 15. REGULATORY INFORMATION

Inventories

US. Toxic Substances Control Act	:	On TSCA Inventory
Australia. Industrial Chemical (Notification and Assessment) Act	:	On the inventory, or in compliance with the inventory
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	:	All components of this product are on the Canadian DSL
Japan. Kashin-Hou Law List	:	On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)	:	On the inventory, or in compliance with the inventory
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	:	On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances (IECSC)	:	On the inventory, or in compliance with the inventory
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	:	On the inventory, or in compliance with the inventory

National regulatory information

SARA 302 Components	:	The following components are subject to reporting levels established by SARA Title III, Section 302:
	:	Nitric acid 7697-37-2
SARA 313 Components	:	The following components are subject to reporting levels established by SARA Title III, Section 313:
	:	Nitric acid 7697-37-2
SARA 311/312 Hazards	:	Acute Health Hazard
CERCLA Reportable Quantity	:	4000 lbs
California Prop. 65	:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK	:	Nitric acid	7697-37-2
New Jersey RTK	:	Nitric acid	7697-37-2
Pennsylvania RTK	:	Nitric acid	7697-37-2

SECTION 16. OTHER INFORMATION

		HMIS III	NFPA
Health hazard	:	3	3
Flammability	:	1	1
Physical Hazard	:	0	
Instability	:		0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group