

## Safety Data Sheet

# Nitric acid titration solution

Version : V2.0.0.1

Report No. : BWB2026-2016-MSDS-US

Creation Date : 2025/09/09

Revision Date : 2025/09/19



\*Prepared according to American OSHA HCS-2024 (29 CFR 1910.1200)

## 1 Identification

### Product identifier

Product Name	Nitric acid titration solution
Cat No.	BWB2026-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

### Recommended use of the product and restrictions on use

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

### Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

### Emergency phone number

Emergency phone number	010-58103678
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## 2 Hazard(s) identification

### Hazard classification according to 29 CFR 1910.1200

Corrosive to metals	Category 1
Acute Toxicity - Oral	Category 3
Skin corrosion/irritation	Category 1C
Serious eye damage/irritation	Category 1
Acute Toxicity - Inhalation	Category 1
Sensitization - respiratory	Category 1
Specific target organ toxicity - single exposure	Category 1
Specific target organ toxicity - repeated exposure	Category 1

**Label elements**

Hazard pictograms	  
Signal word	<b>Danger</b>

**Hazard statements**

H290	May be corrosive to metals
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H370	Causes damage to organs(respiratory system)
H372	Causes damage to organs through prolonged or repeated exposure(respiratory system, teeth)

**Precautionary statements**

## ◆ Prevention

P234	Keep only in original packaging.
P260	Do not breathe gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or with adequate ventilation.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284	In case of inadequate ventilation wear respiratory protection.

## ◆ Response

P320	Specific treatment is urgent (see related instructions on the label).
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material-damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## ◆ Storage

P405	Store locked up.
P406	Store in a corrosion resistant/container with a resistant inner liner.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

## ◆ Disposal

**P501**

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards**

Not applicable.

**Hazard description**

## ◆ Physical and chemical hazards

May materially damage, or even destroy metals through chemical reaction.

## ◆ Health hazards

**Inhaled**

Inhalation of vapours may cause allergy or asthma symptoms or breathing difficulties if inhaled. Inhalation of vapours or aerosols (mists, fumes), generated by the product during the course of normal handling, may produce severely toxic effects; these may be fatal. Corrosive product can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. Corrosive product can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage.

**Ingestion**

Toxic effects may result from the accidental ingestion of the product.

**Skin Contact**

The product can cause severe skin burns following direct contact with the skin.

**Eye**

The product can produce severe chemical burns to the eye following direct contact. If timely and appropriate treatment is not available may cause permanent blindness.

## ◆ Environmental hazards

Please refer to 12th chapter of SDS.

**3 Composition/information on ingredients****Substance/mixture**

Mixture

Component	CAS No.	EC No.	Concentration (wt, %)
Nitric acid	7697-37-2	231-714-2	0.633
Water	7732-18-5	231-791-2	99.367

**4 First-aid measures****Description of first aid measures****General advice**

Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

**Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

**Skin contact**

Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable.

**Ingestion**

Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

**Inhalation**

Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

**Protecting of first-aiders**

Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

**| Most important symptoms/effects, acute and delayed**

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|---|--|
| 1 | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. |
|---|--|

**| Indication of any immediate medical attention and special treatment needed**

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|---|--------------------------|
| 1 | Treat symptomatically.   |
| 2 | Symptoms may be delayed. |

**5 Fire-fighting measures****| Extinguishing media**

<b>Suitable extinguishing media</b>	Small fire: CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam; Large fire: water spray, fog or alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers.
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<b>Unsuitable extinguishing media</b>	Large fire: avoid aiming straight or solid streams directly onto the product.
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**| Specific hazards arising from the substance or mixture**

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|---|---|
| 1 | Fire may produce irritating, poisonous or corrosive gases.                        |
| 2 | Development of hazardous combustion gases or vapor possible in the event of fire. |
| 3 | May expansion or decompose explosively when heated or involved in fire.           |

**| Special protective equipment and precautions for fire-fighters**

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| 1 | As in any fire, wear self-contained breathing apparatus ( MSHA/NIOSH approved or equivalent) and full protective gear. |
| 2 | Fight fire from a safe distance, with adequate cover.  |
| 3 | Prevent fire extinguishing water from contaminating surface water or the ground water system.                          |

**6 Accidental release measures****| Personal precautions, protective equipment and emergency procedures**

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|---|---|
| 1 | Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.                    |
| 2 | Do not touch or walk through spilled material.  |
| 3 | Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.                 |
| 4 | Use personal protective equipment, do not breathe gas/mist/vapour/spray.  |
| 5 | Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. |
| 6 | Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.                                   |

**| Environmental precautions**

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|---|---|
| 1 | Prevent further leakage or spillage if safe to do so. |
| 2 | Discharge into the environment must be avoided.       |

**| Methods and materials for containment and cleaning up**

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|---|---|
| 1 | Do not touch or cross spills.   |
| 2 | It is recommended that emergency personnel wear a self-contained breathing apparatus with positive pressure |

	and wear anti-corrosion clothing.
3	Transfer to a tank truck or special collector with a corrosion-resistant pump.
4	Do not touch broken containers and spills before putting on appropriate protective clothing.
5	Cut off the source of the leak as much as possible.
6	Keep leaks in a ventilated place.
7	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
8	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
9	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

## 7 Handling and storage

### Precautions for safe handling

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.
4	Keep away from heat/sparks/open flames/ hot surfaces.

### Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

## 8 Exposure controls/personal protection

### Control parameters






#### ◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Nitric acid	Australia	2	5.2	4	10
	Canada - Ontario	2	-	4	-
	European Union	-	-	1	2.6
	New Zealand	2	5.2	4	10
	USA - ACGIH	2	-	4	-
	USA - NIOSH	2	5	4	10

### Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

### Personal protection equipment

<b>General requirement</b>	    
<b>Eye protection</b>	Must wear appropriate anti-corrosion goggles.
<b>Hand protection</b>	Must wear acid and alkali resistant chemical protective gloves.
<b>Respiratory protection</b>	Must wear appropriate personal dust proof gas mask.
<b>Skin and body protection</b>	Must wear acid and alkali resistant chemical protective clothing.

## 9 Physical and chemical properties and safety characteristics

### Physical and chemical properties

<b>Appearance (physical state, color, etc.)</b>	colorless liquid
<b>Odor</b>	Pungent odor ( Nitric acid )
<b>Odor threshold</b>	No information available ( Nitric acid )
<b>pH</b>	< 1 ( Nitric acid )
<b>Melting point/freezing point(°C)</b>	-41.6 ( Nitric acid )
<b>Initial boiling point and boiling range(°C)</b>	121 ( Nitric acid )
<b>Flash point(Closed cup, °C)</b>	No information available ( Nitric acid )
<b>Evaporation rate</b>	No information available ( Nitric acid )
<b>Flammability</b>	No information available ( Nitric acid )
<b>Upper/lower explosive limits[% (v/v)]</b>	Upper limit : No information available ( Nitric acid ); Lower limit : No information available ( Nitric acid )
<b>Vapor pressure</b>	6.4kPa ( 20°C ,Nitric acid )
<b>Vapor density(Air = 1)</b>	2.2 ( Nitric acid )
<b>Relative density(Water=1)</b>	1.4 ( Nitric acid )
<b>Solubility</b>	500000mg/L ( 20 °C,Nitric acid )
<b>n-octanol/water partition coefficient</b>	-0.21 ( Nitric acid )
<b>Auto-ignition temperature(°C)</b>	No information available ( Nitric acid )
<b>Decomposition temperature(°C)</b>	No information available ( Nitric acid )
<b>Kinematic viscosity</b>	No information available ( Nitric acid )

## 10 Stability and reactivity

### Stability and reactivity

<b>Reactivity</b>	Contact with incompatible substances can cause decomposition or other chemical reactions.
<b>Chemical stability</b>	Stable under proper operation and storage conditions.
<b>Possibility of hazardous reactions</b>	In contact with active metals (alkali metals, Na, Ca etc.) causes a reaction and release hydrogen.
<b>Conditions to avoid</b>	Incompatible materials, heat, flame and spark.
<b>Incompatible materials</b>	Alkali, sodium, calcium, and other active metal, halogen, metal oxide, nonmetal oxide, acyl halide and metal phosphide.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### | Acute toxicity

Acute toxicity	No information available
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### | Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP	OSHA Carcinogen List
Nitric acid	Not Listed	Not Listed	Not Listed
Water	Not Listed	Not Listed	Not Listed

### | Others

Nitric acid titration solution	
Skin corrosion/irritation	Causes severe skin burns and eye damage(Category 1C)
Serious eye damage/irritation	Causes serious eye damage(Category 1)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled(Category 1)
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Causes damage to organs(respiratory system)(Category 1)
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure(respiratory system, teeth)(Category 1)
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

## 12 Ecological information

### | Acute aquatic toxicity

Acute aquatic toxicity	No information available
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### | Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
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### | Persistence and degradability

Persistence and degradability	No information available
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### | Bioaccumulative potential

Bioaccumulative potential	No information available
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### | Mobility in soil

Mobility in soil	No information available
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## 13 Disposal considerations


### | Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot

	and ignition source of fire. Return to supplier for recycling if possible.
<b>Disposal recommendations</b>	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### Label and Mark

<b>Transporting Label</b>	
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### IMDG-CODE

<b>UN number</b>	2031
<b>UN proper shipping name</b>	NITRIC ACID other than red fuming, with less than 65% nitric acid
<b>Transport hazard class</b>	8
<b>Transport subsidiary hazard class</b>	None
<b>Packing group</b>	II
<b>Marine pollutant ( Yes or no )</b>	No

### IATA-DGR

<b>UN number</b>	2031
<b>UN proper shipping name</b>	NITRIC ACID other than red fuming, with less than 65% nitric acid
<b>Transport hazard class</b>	8
<b>Transport subsidiary hazard class</b>	None
<b>Packing group</b>	II

### UN-ADR

<b>UN number</b>	2031
<b>UN proper shipping name</b>	NITRIC ACID other than red fuming, with less than 65% nitric acid
<b>Transport hazard class</b>	8
<b>Transport subsidiary hazard class</b>	6.1
<b>Packing group</b>	II

### Transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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- ◆ Transport in bulk in accordance with the IGC Code

	Not Available
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### Others

<b>Precautions for transport</b>	Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing.
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The transport unit must be placarded and marked in accordance with relevant transporting requirements.

## 15 Regulatory information

### International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Nitric acid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- [A] China Inventory of Existing Chemical Substances(IECSC)  
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)  
 [C] United States Toxic Substances Control Act Inventory(TSCA)  
 [D] Canadian Domestic Substances List(DSL)  
 [E] New Zealand Inventory of Chemicals(NZIoC)  
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)  
 [G] Korea Existing Chemicals Inventory(KECL)  
 [H] Australian. Inventory of Industrial Chemical (AIICS)  
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)  
 [J] Thailand Existing Chemicals Inventory(TECI)  
 [K] Mexico National Inventory of Chemical Substances (INSQ)  
 [L] Russia Inventory of Existing Substances(DRAFT)  
 [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

### List of Chemical Substances under International Conventions

Component	A	B	C
Nitric acid	×	×	×
Water	×	×	×

- [A] The Montreal Protocol on Substances that Deplete the Ozone Layer  
 [B] Stockholm Convention on Persistent Organic Pollutants (POPs)  
 [C] Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

### US chemical inventory

Component	A	B	C	D	E	F	G	H
Nitric acid	×	✓	✓	✓	✓	✓	✓	×
Water	×	×	×	×	×	×	×	×

- [A] US Clean Air Act (CAA)- Section 112, Hazardous Air Pollutants  
 [B] US SARA 302- Extremely Hazardous Substance List  
 [C] US CERCLA- Hazardous Substances List  
 [D] US Massachusetts Right-to-Know Substance List  
 [E] US New Jersey Right to Know Hazardous Substance List  
 [F] US Pennsylvania Right to Know Hazardous Substance List  
 [G] US New York City Right-to-Know Hazardous Substance List  
 [H] US California Proposition 65 List

Note:

- “✓” Indicates that the substance included in the regulations.  
 “×” No data or not included in the regulations.

## 16 Other information

**Information on revision**

Creation Date	2025/09/09
Revision Date	2025/09/19
Reason for revision	-

**Reference**

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

**Abbreviations and acronyms**

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC <sub>50</sub>	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD <sub>50</sub>	Lethal Dose 50%	NTP	National Toxicology Program
EC <sub>50</sub>	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC <sub>x</sub>	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P <sub>OW</sub>	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor	HCS	Hazard Communication Standard

**Disclaimer**

This Safety Data Sheet (SDS) was prepared according to OSHA HCS -2024. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.