

Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Nitric acid (1.42)

Product code (SDS NO): 37325jis_E2-3

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Oxidizing liquids: Category 3

Corrosive to metals: Category 1

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 1

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1 (respiratory system)

Specific target organ toxicity – repeated exposure: Category 1 (respiratory system, tooth)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H272–May intensify fire; oxidizer

H290–May be corrosive to metals

H330–Fatal if inhaled

H314–Causes severe skin burns and eye damage

H318–Causes serious eye damage

H370–Causes damage to organs after single exposure

H372–Causes damage to organs through prolonged or repeated exposure

H402–Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Keep/Store away from clothing/combustible materials.

Keep only in original container.

Nitric acid (1.42),JUNSEI CHEMICAL CO., LTD.,37325jis_E2-3,10/03/2020

- Do not breathe vapors.
- Wear respiratory protection.(as specified by the manufacturer/supplier or the competent authority.)
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not eat, drink or smoke when using this product.

Response

- In case of fire: Use appropriate media other than water for extinction.
- Absorb spillage to prevent material damage.
- Get medical advice/attention if you feel unwell.
- Immediately call a POISON CENTER or doctor/physician.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Wash contaminated clothing before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.

Disposal

- Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

- Oxidizing material. Organic or combustible material may catch fire in contact with it.

3. Composition/information on ingredients**Mixture/Substance selection:****Mixture**

Ingredient name:Nitric acid
Content (%):69~70
Chemical formula:HNO₃
Chemicals No, Japan:1-394
CAS No.:7697-37-2
MW:63.01
ECNO:231-714-2

Ingredient name:Water

Content (%):Residual quantity of the ingredient mentioned above
Chemical formula:H₂O
CAS No.:7732-18-5
MW:18.02
ECNO:231-791-2

4. First-aid measures**Descriptions of first-aid measures****General measures**

- Get medical attention/advice if you feel unwell.
- Immediately call a POISON CENTER or doctor/physician.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Give nothing to drink. Do NOT induce vomiting.

Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Sore throat. Burning sensation. Shortness of breath. Laboured breathing.

Burns in mouth and throat. Abdominal pain. Vomiting. Shock or collapse.

(Symptoms when skin and/or eye contact)

Pain. Redness of the eyes. Yellow staining of the skin. Severe burns.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

In case of fire, use CO₂, water in large amounts to extinguish.

Not combustible but enhances combustion of other substances.

Unsuitable extinguishing media

Foam.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

NO direct contact of the substance with water.

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures**Personnel precautions, protective equipment and emergency procedures**

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

※Do NOT absorb in saw-dust or other combustible absorbents.

Use clean non-sparking tools to collect absorbed material.
All equipment used when handling the product must be grounded.
Cautiously neutralize remainder with sodium carbonate. Then wash away with plenty of water.

Preventive measures for secondary accident

Absorb spillage to prevent material damage.
Collect spillage.
Stop leak if you can do it without risk.
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Prevent entry into waterways, sewers, basements or confined areas.
Do not get water inside containers.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)
Do not breathe vapors.
(Protective measures against fire and explosion)
Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Keep/Store away from clothing/combustible materials.
(Exhaust/ventilator)
Exhaust/ventilator should be available.
(Safety treatments)
Avoid contact with skin.
Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.
Fire or Explosion : Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars etc.).
Reaction with water may generate much heat which will increase the concentration of fumes in the air.
Reaction with water or moist air will release toxic, corrosive or flammable gases.

Any incompatibilities

Bases, Reducing agents, Metals, Combustible substances containing organic compounds should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.
Keep cool. Protect from sunlight.
Store locked up.

(Incompatible storage condition)

The product may corrode metal. Do not keep in a metal container.

Container and packaging materials for safe handling

Keep only in original container.
Store in corrosion resistant/specified container with a resistant inner liner.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

(Nitric acid)

JSOH(1982) 2ppm; 5.2mg/m³

ACGIH(1992) TWA: 2ppm;

STEL: 4ppm (URT & eye irr; dental erosion)

OSHA-PEL

(Nitric acid)

TWA: 2ppm, 5mg/m³

NIOSH-REL

(Nitric acid)

TWA: 2ppm; STEL: 4ppm

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves. Recommended material(s): viton

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear chemical safety goggle.

Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Irritant odor

Odor threshold: 0.75~2.50mg/m³ (as HNO₃)

pH: pH ≤ 2 (Strong acidic)

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Melting point/Freezing point data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

Flammability (gases, liquids and solids) data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Critical temperature data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air – mixture at 20°C (Air = 1) data is not available.

Density and/or relative density: ca. 1.42 g/ml

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

When exposed to light it slowly becomes reddish.

Possibility of hazardous reactions

Decomposes on warming. This produces toxic and irritating fumes and gases.

This product reacts violently with combustible and reducing materials, such as turpentine,charcoal and alcohol.This product is a strong acid. It reacts violently with bases and is corrosive to metals.

This produces flammable/explosive gas.

Reacts violently with organic compounds.

Conditions to avoid

Contact with incompatible materials.

Heat. Light.

Incompatible materials

Bases, Reducing agents, Metals, Combustible substances containing organic compounds

Hazardous decomposition products

Nitrogen oxides, Hydrogen gas

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Nitric acid) vapor: rat LC50=49ppm/4hr (JSOH, 1982)

Labor standard law, Japan; Toxic

Nitric acid

Irritant properties

Skin corrosion/irritation

[GHS Cat. based on pH]

pH <= 2, accordingly Skin corrosion/irritation: Category 1

[GHS Cat. Japan, base data]

(Nitric acid) human : severe damage (ACGIH 7th, 2001)

Serious eye damage/irritation

[GHS Cat. based on pH]

pH <= 2, accordingly Serious eye damage/eye irritation: Category 1

[GHS Cat. Japan, base data]

(Nitric acid) human : non recoverable corneal opacity to blindness (ACGIH 7th, 2001)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[GHS Cat. Japan, base data]

(Nitric acid)

Reverse-mutation assay in bacteria (Ames test) : Negative (SIDS, 2010 et al.)

Carcinogenic effects data is not available.

Reproductive toxicity

Teratogenic effects

[GHS Cat. Japan, base data]

(Nitric acid)

The teratogenicity and ferotoxicity does not occur and there is only a slight ossification inhibition of cranial bone in embryo in the drinking water administration test to pregnancy rat. (IUCLID, 2000)

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Nitric acid) respiratory apparatus (SIDS, 2010)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Nitric acid) respiratory apparatus; teeth (SIDS, 2010)

Aspiration hazard data is not available.

Additional data

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H402-Harmful to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Nitric acid) Fish (Gambusia affinis) LC50=72mg/L/96hr (SIDS, 2010)

Water solubility

(Nitric acid) miscible (ICSC, 2006)

Persistence and degradability data is not available.

Bioaccumulative potential

(Nitric acid) log Pow=-0.21 (ICSC, 2006)

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information**UN No., UN CLASS**

UN No.: 2031

Proper Shipping Name :

NITRIC ACID, other than red fuming, with at least 65%, but not more than 70% nitric acid

Class or division : 8

Subsidiary hazard(s) : 5.1

Packing group : II

ERG GUIDE No.: 157

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2031

Proper Shipping Name :

NITRIC ACID, other than red fuming, with at least 65%, but not more than 70% nitric acid

Class or division : 8

Subsidiary hazard(s) : 5.1

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 2031

Proper Shipping Name :

NITRIC ACID, other than red fuming, with at least 65%, but not more than 70% nitric acid

Class or division : 8

Subsidiary hazard(s) : 5.1

Hazard labels : Corrosive & Oxidizer

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Environmental hazards

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Nitric acid

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y

Nitric acid

Non Noxious Liquid ; Cat. OS

Water

US major regulations

Chemicals listed in TSCA Inventory

Nitric acid; Water

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

16. Other information**GHS classification and labelling**

H272–Ox. Liq. 3: H272 May intensify fire; oxidizer
H290–Corr. Met. 1: H290 May be corrosive to metals
H330–Acute Tox. 1: H330 Fatal if inhaled
H314–Skin Corr. 1: H314 Causes severe skin burns and eye damage
H318–Eye Dam. 1: H318 Causes serious eye damage
H370–STOT SE 1: H370 Causes damage to organs after single exposure
H372–STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
H402–Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
IATA Dangerous Goods Regulations (60th Edition) 2019
Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2019 TLVs and BEIs. (ACGIH)
<http://monographs.iarc.fr/ENG/Classification/index.php>
JIS Z 7253 : 2019
JIS Z 7252 : 2019
2019 Recommendation on TLVs (JSOH)
Supplier's data/information
Chemicals safety data management system "GHS Assistant" (<https://www.asahi-ghs.com/>)
NITE Chemical Risk Information Platform (NITE–CHRIP)
https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop
GHS Classification Guidance for Enterprises 2013 Revised Edition (Aug. 2013, METI)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).