



Safety Data Sheet

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

Product identifier:

Product name: Nitric acid (60%)

Product code (SDS NO): 5448E-3

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

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e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

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 apparatus)

Specific target organ toxicity – repeated exposure: Category 1(respiratory apparatus; teeth)

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

May be corrosive to metals

Fatal if inhaled

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs after single exposure(respiratory apparatus)

Causes damage to organs through prolonged or repeated exposure(respiratory apparatus; teeth)

Harmful to aquatic life

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.

Keep only in original container.

Do not breathe dust/fume/gas/mist/vapors/spray.

In case of inadequate ventilation 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 or face protection.
Wear eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

Absorb spillage to prevent material damage.
Get medical advice/attention if you feel unwell.
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.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Nitric acid
Content (%):60
Chemical formula:HNO₃
Chemicals No, Japan:1-394
CAS No.:7697-37-2
MW:63.01
ECNO:231-714-2

Ingredient name:Water
Content (%):40
Chemical formula:H₂O
CAS No.:7732-18-5
MW:18.02
ECNO:231-791-2

Note : The figures shown above are not the specifications of the product. The content of products may exceed the figures shown above.

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

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. Do NOT induce vomiting.

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

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

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

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

Evacuate non-essential personnel to safe area.

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**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Absorb spillage to prevent material damage.

Collect spillage.

7. Handling and storage**Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

(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 or face protection.

Wear eye protection/face protection.



When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

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

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

(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.

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Nitric acid)

ACGIH(1992) TWA: 2ppm;

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

OSHA-PEL

(Nitric acid)

TWA: 2ppm, 5mg/m³

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.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Irritant odor

pH data is not available.

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.



Flammability (gases, liquids and solids) data is not available.
Flash point data is not available.
Auto-ignition temperature data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Vapor pressure data is not available.
Relative vapor density (Air=1) data is not available.
Density and/or relative density: 1.38
Kinematic viscosity data is not available.
Solubility:
 Solubility in water: Soluble
n-Octanol/water partition coefficient data is not available.
No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Turns brown on exposure to light.

Possibility of hazardous reactions

(Nitric acid)

Decomposes on warming. This produces toxic and irritating fumes and gases including nitrogen oxides. The substance is a strong oxidant. It reacts violently with combustible and reducing materials, such as turpentine, charcoal and alcohol. The substance is a strong acid. It reacts violently with bases and is corrosive to metals. This produces flammable/explosive gas (hydrogen). Reacts violently with organic compounds. (ICSC 0183)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Bases, Reducing agents, Combustible materials, Metals, Organic compounds

Hazardous decomposition products

Nitrogen oxides, Hydrogen

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)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Nitric acid)

human severe damage (ACGIH 7th, 2001)

Serious eye damage/irritation

[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.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.



Reproductive toxicity data is not available.

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.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

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

Persistence and degradability data is not available.

Bioaccumulative potential

(Nitric acid)

log Pow=-0.21 (ICSC, 2006)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data 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.: 2031

Proper Shipping Name :

NITRIC ACID, other than red fuming, with more than 20% but less than 65% nitric acid

Class or division : 8

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 more than 20% but less than 65% nitric acid

Class or division : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 2031

Proper Shipping Name :

NITRIC ACID, other than red fuming, with more than 20% but less than 65% nitric acid

Class or division : 8

Hazard labels : Corrosive

Packing group : II

Special provisions No.: A212

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

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

15. Regulatory Information

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

US major regulations

TSCA

Nitric acid; Water

Other regulatory information

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

16. Other information

GHS classification and labelling

Corr. Met. 1: H290 May be corrosive to metals

Acute Tox. 1: H330 Fatal if inhaled

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 1: H370 Causes damage to organs after single exposure

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

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>

Supplier's data/information

**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).