



Safety Data Sheet

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

Product identifier:

Product name: Polyphosphoric acid

SDS No. : 6307E-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

FAX: +81-6-6946-1607

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

2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****HEALTH HAZARDS**

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 4

Acute toxicity (Inhalation): Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

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

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

Label elements

Signal word: Danger

HAZARD STATEMENT

Harmful if swallowed

Harmful in contact with skin

Toxic if inhaled

Causes severe skin burns and eye damage

Causes damage to organs (respiratory organs)

Harmful to aquatic life

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.

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

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

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



IF exposed or concerned: Call a POISON CENTER/doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
Take off contaminated clothing and wash it 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: Call a POISON CENTER/doctor/physician if you feel unwell.
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:****Substance**

Ingredient name: Polyphosphoric Acid

Content (%): (As Phosphoric acid) 83 (min)

Chemical formula: $H_n + 2P_nO_{3n+1}$

Chemicals No, Japan: 1-422

CAS No.: 8017-16-1

ECNO: 232-417-0

Note : The figures shown above are not the specifications of the product.

Supplementary information concerning ingredients

Orthophosphoric acid (CAS No. 7664-38-2) $\geq 1.0\%$

4. First-aid measures**Descriptions of first-aid measures****IF INHALED**

Remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN (or hair)

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

Wash with plenty of soap and water.

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/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

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 resistant or flame 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

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, hot surfaces, sparks, open flames and other ignition sources. 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.
Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

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

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Orthophosphoric acid)

ACGIH(1992) TWA: 1mg/m³;

STEL: 3mg/m³ (URT, eye & skin irr)

OSHA-PEL

(Orthophosphoric acid)

TWA: 1mg/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: Viscous liquid

Color: Colorless

Odor: Odourless

Melting point/Freezing point: 38°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

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

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

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

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

Vapor pressure data is not available.



Density and/or relative density: 2.06 (25°C)
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Hygroscopic (absorbs moisture from the air).

Possibility of hazardous reactions

(As phosphoric acid)

The substance is a medium strong acid. Reacts violently with bases. The substance violently polymerizes under the influence of azo compounds and epoxides. On combustion, forms toxic fumes of phosphorus oxides. Decomposes on contact with alcohols, aldehydes, cyanides, ketones, phenols, esters, sulfides or halogenated organics. This produces toxic fumes. Attacks many metals. This produces flammable/explosive gas (hydrogen). (ICSC 1008)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Alcohols, Aldehydes, Cyanides, Ketones, Phenols, Esters, Sulfides, Halogenated organics, Metals

Hazardous decomposition products

Phosphorus oxides, Hydrogen

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid) rat LD50=2,000mg/kg(SIDS (2011))

Acute toxicity (Dermal)

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)

rabbit LD50=1,071mg/kg(SIDS (2011))

Acute toxicity (Inhalation)

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)

Category 3

Irritant properties

Skin corrosion/irritation

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)

Category 1

Serious eye damage/irritation

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)

**Category 1**

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]

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)respiratory organs

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

12. Ecological Information**Ecotoxicity****Aquatic toxicity**

Harmful to aquatic life

Hazardous to the aquatic environment (Acute)

[Company proprietary data]

(Polyphosphoric Acid)

(As phosphoric acid)

Category 3

Water solubility

(Phosphoric acid)

very good (ICSC, 2000)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

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.

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

14. Transport Information

UN No. or ID No.: 2922

UN Proper Shipping Name :

CORROSIVE LIQUID, TOXIC, N.O.S.

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 6.1

Packing group : III

ERG GUIDE No.: 154

Special provisions No.: 223; 274

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN No.: 2922
Proper Shipping Name :
CORROSIVE LIQUID, TOXIC, N.O.S.
Class or division : 8
Subsidiary hazard(s) : 6.1
Packing group : III
Special provisions No.: 223; 274

IATA Dangerous Goods Regulations

UN No.: 2922
Proper Shipping Name :
CORROSIVE LIQUID, TOXIC, N.O.S.
Class or division : 8
Subsidiary hazard(s) : 6.1
Hazard labels : Corrosive & Toxic
Packing group : III
Special provisions No.: A3; A803

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Z
Orthophosphoric acid

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Orthophosphoric acid; Polyphosphoric Acid

Other regulatory information

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

16. Other information

GHS classification and labelling

Acute Tox. 4: H302 Harmful if swallowed
Acute Tox. 4: H312 Harmful in contact with skin
Acute Tox. 3: H331 Toxic if inhaled
Skin Corr. 1: H314 Causes severe skin burns and eye damage
STOT SE 1: H370 Causes damage to organs
Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2021 TLVs and BEIs. (ACGIH)

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 2019).