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Safety Data Sheet

1. Product and company identification

Product name : PHOSPHORIC ACID 86%
Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
Name of section : Electronic materials division technical department
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SDS No. : GE00229

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable liquids : Out of category
Pyrophoric liquids : Out of category
Self-heating substances and mixtures : Out of category
Substances and mixtures which, in contact with water, emit flammable gases : Out of category

Human health hazard

Acute toxicity(oral) : Out of category
Acute toxicity(dermal) : Out of category
Acute toxicity(inhalation:dust, mists) : Category 4
Skin corrosion/irritation : Category 1C
Serious eye damage/eye irritation : Category 1
Specific target organ systemic toxicity(single exposure) : Category 1

Environmental hazard

Hazardous to the aquatic environment-acute hazard : Category 3
Hazardous to the aquatic environment-chronic hazard : Out of category

Pictogram or symbol

Signal word : Danger

Hazard statement	:	Harmful if inhaled
		Causes severe skin burns and eye damage
		Causes serious eye damage
		Causes damage to organs (respiratory organs)
		Harmful to aquatic life
Cautions		
Safety measurements	:	Do not breathe dust, mist, and vapor.
		Use only in a well-ventilated area.
		Avoid release to the environment.
		Do not eat, drink or smoke when using this product.
		Wear appropriate protective gloves, glasses, clothing, face shield, or mask.
		Wash protective equipment thoroughly after use.
		Wash hands thoroughly after handling.
First-aid measures	:	If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical treatment if you feel unwell.
		If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment.
		If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.
		If on skin : Remove contaminated clothing and the substance. Immediately get medical treatment.
		If exposed, get medical treatment.
Storage	:	Store locked up.
Disposal	:	Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

Substance/Mixture	:	Substance
Chemical name or commercial name		
	:	Phosphoric acid
Synonyms	:	Orthophosphoric acid
Ingredients and composition		
	:	Water solution contains 85-86% phosphoric acid
Chemical formula	:	H_3PO_4
CAS No.	:	7664-38-2
TSCA Inventory	:	Registered
EINECS No.	:	2316332
Dangerous and hazardous ingredients		
	:	Phosphoric acid

4. First aid measures

Inhalation	:	Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.
Skin contact	:	Wash the affected areas under running water.

Eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

Ingestion : Give the victim milk or dispersed magnesium oxide water solution gradually. Get medical attention immediately.

Anticipated acute and delayed symptoms

: Inhalation causes burning sensation of throat, throat ache, and cough. Skin and eyes contact causes redness, ache, and severe burning.

5. Fire fighting measures

Extinguishing media : This product is noncombustible.

Prohibited extinguishing media

: None

Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Protection for firefighters

: Firefighters should wear protective equipment.

6. Accidental release measures

Cautions for personnel : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Cautions for environment : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Removal measure : Absorb spill with diatomaceous earth or dry sand and place in container. Neutralize residue with calcium hydroxide solution or sodium carbonate solution and then flush with copious amounts of water.

7. Cautions of handling and storage

Handling

Engineering measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor.

Cautions for safety handling

: Use with an enclosed system or a local exhaust ventilation. Handle in a well-ventilated place. When outdoors, work is done from the windward.

Cautions : The substance is acidic. Avoid contact with alkaline substances.

Storage

Adequate storage condition

: Store in a dark, cool place and tightly closed.

Safety adequate container materials

: Glass, fluorine resin, stainless steel

Do not use many kinds of metals like carbon steel, low-alloy steel, nickel.

8. Exposure control/Personal protection

Engineering measures : Use with an enclosed system or a local exhaust ventilation.

Control parameters
ACGIH(2015) : 1mg/m3(TLV-TWA)
3mg/m3 (TLV-STEL)
Protective equipment
Respiration protective equipment
: If necessary, wear a chemical cartridge respirator with acidic gases.
Hands protective equipment
: Acid resistant gloves
Eyes protective equipment
: Safety goggles
Skin and body protective equipment
: Protective clothing, protective boots

9. Physical and chemical properties

Appearance	: Liquid
Color	: Colorless
Odor	: Odorless
pH	: Strong acidity
Boiling point	: 158℃
Melting point	: 21℃
Flash point	: Noncombustible
Auto-ignition point	: Noncombustible
Explosion characteristics	
Explosion limit	: Noncombustible
Vapor pressure	: 2.2hPa(25℃)
Density	: 1.69g/cm3(15℃)
Solubility	
Solubility in solvents	: Water ; Miscible
log Pow	: Not available

10. Stability and reactivity

Stability	: Stable under normal conditions.
Reactivity	: May react with alkaline substances.
Incompatible conditions	: Light, heat
Incompatible materials	: Alkaline substances, Oxidizing substances
Hazardous decomposition products	: Phosphorus oxide

11. Toxicological information

Acute toxicity : Oral : Out of category
Dermal : Out of category
Inhalation(vapor) : Not possible to classify because of insufficient data.
Harmful if inhaled(dust, mist)(category 4)

(as phosphoric acid)

rat oral LD50=about 2000mg/kg

rabbit skin LD50=2975mg/kg

rat inhalation LC50=0.9615mg/L/4H(mist)

Skin corrosion/irritation : Causes severe skin burns and eye damage(category 1C)

The result of applying 85% solution of this substance to the rabbit, there is a report that the corrosion was observed within 4 hours. On the other hand, result of the occlusion application of 75% solution of this substance for 4.5 hours, corrosion was not observed. In addition, although more detailed information is unknown, there is the description that 75% solution causes severe burns to the skin. Based on the above results, it was classified into category 1C.

Serious eye damage/eye irritation

: Causes serious eye damage(category 1)

Result of the application of this substance(75-85%) to the eyes of rabbit, there is the description that corrosion was observed. In addition, this substance is classified into Category 1C in the skin corrosion/irritation. Based on the results, it was classified into category 1.

Respiratory sensitization or Skin sensitization

: Respiratory sensitization : Not possible to classify because of insufficient data.

Skin sensitization : Not possible to classify because of insufficient data.

Mutagenicity : Not possible to classify because of insufficient data.

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure

: Cause damage to organs (respiratory organs)(category 1)

This substance is respiratory irritation to humans and experimental animals. Although there were some cases in humans, inhalation causes hoarseness, breathing difficulties, wheezing (by laryngeal edema) by severe exposure. In the most serious case, may cause noncardiogenic pulmonary edema. There is the report that nausea, vomiting, abdominal pain, bloody diarrhea, esophagus, irritation or burns of the stomach by oral administration. Based on the results, it was classified into category 1(respiratory organs).

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of insufficient data.

Aspiration hazard : Not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Fish toxicity : Harmful to aquatic life(category 3)

Chronic aquatic toxicity : Out of category

(as phosphoric acid)

Fish(Oryzias latipes) LC50=75.1mg/L/96H(No pH adjustment)

Crustacea(Daphnia magna) EC50>376mg/L/48H(pH adjustment)

Persistence and degradability

	:	Not available
Bioaccumulative potential	:	Not available
Mobility in soil	:	Not available

13. Disposal consideration

Residual disposal	:	Add alkali such as calcium hydroxide, sodium carbonate gradually to neutralize and then flush in a drain with a large amount of water. Or entrust approved waste disposal companies with the disposal.
Containers	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class	:	Class 8(Corrosive substances) P. G. Ⅲ
UN number	:	1805

Marine regulation information

UN No.	:	1805
Proper shipping name	:	PHOSPHORIC ACID, SOLUTION
Class	:	8
Sub risk	:	-
Packing group	:	Ⅲ
Marine pollutant	:	Not applicable

Aviation regulation information

UN No.	:	1805
Proper shipping name	:	Phosphoric acid, solution
Class	:	8
Sub risk	:	-
Packing group	:	Ⅲ

15. Regulatory information

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

16. Other information

References

Handbook of dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association.(2000-2001)

Dangerous Properties of Industrial Materials,6th ed. N.I.Sax Van Nostrand Reinhold Company(1984)

Handbook of Dangerous Substances Springer-Verlag Tokyo(1991)

Handbook of 16817 Chemical Products, The Chemical Daily Co.(2017)

Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa(2000)

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253, and it has the same required elements on the Material Safety Data Sheet(MSDS) which is prepared based on JIS Z7250:2010.