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1. Product and Company Identification


- A. Product name : Sodium Pyro Phosphate (Deca Hydrate)
- B. Relevant identified uses of the substance or mixture and uses advised against
- ☐ Recommended Use : pH buffer, increasing water holding capacity, dispersant, emulsifier, detergent, shampoo, tooth paste, medicine.
 - ☐ Usage Limits : No data available
- C. Details of the supplier of the safety data sheet
- ☐ Company : Youngjin co. Ltd.
 - ☐ Address : 38, Ojeong-ro, Ojeong-gu, Bucheon-si, Gyeonggi, Korea
 - ☐ Department : Quality Control Department
 - ☐ Telephone : 82-32-674-4221

2. Hazards Identification

- A. Hazards Identification Classification
- Skin corrosive or irritative substance : classification 2
 - Severe eye damage or Eye irritative substance : classification 2
- B. Warning marks
- ☐ Pictorial symbol



- ☐ Signal word: Warning
- ☐ Hazardous expression
 - H315 Causes irritation on skin
 - H319 Causes severe irritation to eyes.
- ☐ Precaution expression
 - P264 Wash thoroughly after handling
 - P280 Wear protective gloves/protective clothing/ eye protection/face protection.
- ☐ Respond
 - P302+P352 IF ON SKIN: Rinse skin with much water and soap.

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P321 IF ON SKIN: Remove substance immediately.

P332+P313 If skin irritation is caused, take medical advice and treatment.

P362+P364 Take off contaminated clothing and wash before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If irritation to eyes continues, take medical advice and treatment.

○ Storage

P403+P233 Store container in well-ventilated place and keep it securely airtight.

○ Disposal

P501 Dispose of contents/container as general industrial waste.

C. NFPA Rating (0-4 level)

Health : 1, Fire : 0, Reactivity : 1

3. Composition, Information on Ingredients

Chemical Name	Idiomatic name	Percent (%)	CAS No.
Sodium Pyro Phosphate (Deca Hydrate)	Sodium Pyro Phosphate (Deca Hydrate)	100%	13472-36-1

4. First Aid Measures

A. Eye Contact


- If on eyes, rinse eyes carefully more than 20 minutes with water. If possible remove contact lenses.
- If irritation continues, take medical advice and treatment.

B. Skin Contact

- Remove and contaminated clothing and shoes.
- If exposed, rinse skin with much water until chemicals do not remain at all. (for 15~20 minutes)
- If substance is hot, soak affected area in much cold water or wash out to remove heat.
- Take medical treatment from occupational medical personnel.

C. Inhalation

- Move victim to well-ventilated place.

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- If victim is not breathing, perform artificial respiration.
- If breathing is hard, supply oxygen.
- Keep victim warm and at rest.

D. Ingestion

- Do not put anything to eat in unconscious victim's mouth
- Take medical treatment from occupational medical personnel.

E. Other medical notices.

- Let medical personnel recognize the material and take protective measure.

5. Explosion / Fire Fighting Measures

A. Appropriate (and inappropriate) Extinguishing Media

- Appropriate:

Great fire : Water spray/mist, normal foam.

Small fire: dry sand, desiccant, alcohol resistant foam, water spray, normal foam, CO₂.


- Inappropriate : High-pressure water (inappropriate)

B. Specific Hazards in Presence of Chemical Substances

- While burning, thermal decomposition or combustion may generate irritative and highly hazardous gas.
- If boiled, container may explode.
- Nonflammable, but material can decompose and generate corrosive and toxic fume if boiled.

C. Precaution and Protective equipments for Fire Fighting

- Keep proper distance while extinguishing.
- Be cautious, substance may be transported in molten state.
- Leakage may cause contamination.
- Dig a ditch to dispose fire fighting water and keep material not dispersed.
- If not dangerous, move container from fire area.
- Fire involving Tanks; Extinguish fire in maximum range or use unmanned fire apparatus.
- Fire involving Tanks; After extinguish, cool down container with water spray for considerable time
- Fire involving Tanks; Step back immediately if pressure relief device makes loud sound or tank discolors.
- Fire involving Tanks; Do not approach tank in flames.
- Fire involving Tanks; In case of great fire, if it is impossible to use unmanned fire apparatus,

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step back and leave it burn.

- Rescuer should use appropriate protective equipment.

6. Accidental Release Measures

A. Require measures and protection to protect human body

- Do not breathe dust, fume, mist.
- Clear spilth immediately, follow precaution of Personal Protection section.
- If not dangerous, stop any leakage.
- Do not touch broken container or leaked material without appropriate protective clothing.
- Take notice of material and condition to avoid.

B. Required measures to protect environment

- Prevent of inflow into waterway, drain, basement, or closed space.

C. Purification or removal method

- Sweep up spilth dustlessly and dispose as general industrial waste.
- If substance is dissolved in water, use inert material(eg. dry sand or earth) to absorb and put in chemical waste container.
- In case of powdery leakage, use plastic sheets to stop spreading and keep dry condition.
- Use clean shovel to move leakage to clean and dry container. Then, close container loosely and move it away from leakage site.


7. Handling & Storage

A. Safe handling

- Avoid breathing dust, fume, mist.
- Wash thoroughly after handling.
- Follow all precautions of MSDS/LABEL though container is emptied. Product residues can rest.
- Avoid contact with eyes, skin and clothing.
- Keep container airtight.
- Use appropriate ventilation.

B. Safe Storage

- Store container in well-ventilated place and securely airtight.
- Store in cool and dry place.
- Take notice of material and condition to avoid.

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8. Exposure Controls & Personal Protection

A. Chemical Exposure Limits, Biological Exposure Limit

- Korean Regulation : No data available
- ACGIH Regulation : No data available
- Biological Exposure Limit : No data available

B. Engineering Controls

- Install local exhaust ventilation, use process isolation or other ways to comply tolerable standard.

C. Personal Protective Equipment

Use personal protective equipment that is appropriate to exposed material's physical & chemical properties and authorized by Korean Occupational Safety and Health Act.

○ Respiratory Protection

- If exposure concentration is lower than $50\text{mg}/\text{m}^3$, half facepiece equipped with appropriate filter.
- If exposure concentration is lower than $125\text{mg}/\text{m}^3$, use loose-fitting hood/helmet powered air-purifying respirator or supplied air respirator equipped with appropriate filter.
- If exposure concentration is lower than $250\text{mg}/\text{m}^3$, full facepiece or half facepiece powered air-purifying respirator or half facepiece supplied air respirator / pressure demand respirator equipped with appropriate filter.
- If exposure concentration is lower than $5000\text{mg}/\text{m}^3$, use full facepiece or helmet/hood type, pressure demand supplied air respirator with appropriate filter.
- If exposure concentration is lower than $50000\text{mg}/\text{m}^3$, use self-contained breathing apparatus (SCBA) or pressure demand self-contained breathing apparatus(SCBA) equipped with appropriate filter

○ Eyes Protection : Wear dust-proof safety goggles.

○ Hands Protection : Wear appropriate chemical-resistant gloves.


○ Body Protection : Wear higher than Type 5 Chemical Protection. (Protective Apron and chemical-resistant rubber boots)

9. Physical & Chemical Properties

A. Appearance: White solid crystal.

B. Odor: None.

C. Odor Threshold : None

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- D. PH: 1% solution pH 9.9~10.7
- E. Melting point/Freezing point: 990°C
- F. Initial Boiling point and Boiling point range: 93.8°C
- G. Flash point: No data available.
- H. Evaporation Rate: No data available.
- I. Flammability (solid, gas): nonflammable
- J. Low & Upper limit of Flammable or Explosion Range: N/A.
- K. Vapor Pressure: No data available.
- L. Solubility: 109000 mg/L (20°C)
- M. Vapor Density: N/A
- N. Specific Gravity: 1.773 g/cm³ (21°C)
- O. n-Octanol/water partition coefficient: No data available.
- P. Auto-ignition Temp.: No data available.
- Q. Decomposition Temp.: No data available.
- R. Viscosity: No data available.
- S. Molecular Weight and Molecular Formular: 449.06 / Na₄P₂O₇·10H₂O

10. Stability & Reactivity

- A. Chemical stability and Possibility of hazardous reactions
- Stable in condition of normal temperature and pressure.
 - If boiled, container may explode.
 - May burn partly, does not ignite easily.
 - Fire causes irritative, corrosive, toxic gas from material.
 - Inhalation of substance may be hazardous
- B. Conditions to Avoid : Ignition sources like heat, spark, and fire.
- C. Materials to Avoid : inflammable material.
- D. Hazardous Decomposition Products : No data available.

11. Toxicological Information

- A. Information about possible exposure route : No data available.
- B. Health effect
- Acute oral toxicity:
 - ORAL : LD₅₀ > 2000mg/kg Rat (analogue material)

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※ Data Source : Hazard Identification and Risk Assessment, KOSHA, 2009

- SKIN : LD₅₀ > 2000mg/kg Rat (analogue material)

※ Data Source : Hazard Identification and Risk Assessment, KOSHA, 2009

- Inhalation : No data available.

○ Skin corrosivity or irritation : (analogue material) Moderate irritation on human skin.

○ Severe eye damage or irritation : No data available.

○ Respiratory sensitization : No data available.

○ Skin sensitization : No data available.

○ Carcinogenesis

- Occupational Safety and Health Act : No data available

- Ministry of Employment and Labor : No data available

- IARC : No data available

- OSHA : No data available

- ACGIH : No data available

- NTP : No data available

- EU CLP: No data available

○ Gamete Mutagenicity :

- Microbial reverse mutation assay came out negative. (analogue material: CAS No.7722-88-5)

※ Data Source : Hazard Identification and Risk Assessment, KOSHA, 2009

○ Reproductive toxicity : No data available

○ Specific target organ toxicity (single exposure) : (analogue material: CAS No.7722-88-5)

- Causes cough and nasal and pharynx irritation on human.

○ Specific target organ toxicity (repeated exposure) : (analogue material: CAS No.7722-88-5)

- NOAEL 250 mg/kg (Rat)

※ Data Source : Hazard Identification and Risk Assessment, KOSHA, 2009

○ Aspiration Hazard : No data available

12. Ecological Information

A. Aquatic & Eco-toxicity:


- Fish : No data available

- Crustacean : No data available

- Birds : No data available

B. Residue property and degradability

- Residue property : No data available

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- Degradability : No data available.
- C. Bioaccumulative potential
 - Bioaccumulation : No data available.
 - Biodegradation : No data available.
- D. Movement in soil : No data available.
- E. Ozone Layer Hazard : Not applicable.
- F. Other hazardous effect : No data available

13. Disposal Considerations


- A. Disposal method
 - Store and transport waste as general industrial waste.
 - Put contents in polyethylene bag or similar bag and bury in managed landfills.
 - Dispose of container as general industrial waste.
- B. Disposal Considerations
 - Consider precautions in Waste Control Act(if specified).

14. Transport information

- A. UN Number : No data available.
- B. UN proper shipping name : N/A
- C. UN hazardous ranking : This product is NOT classified as dangerous for IATA Transport
- D. Un package group : N/A
- E. Marine pollutant : N/A
- F. Special precautions:
 - In case of fire : N/A
 - in case of leakage : N/A

15. Regulatory Information

- A. Regulation by Occupational Safety and Health Act : N/A
- B. The Chemicals Control Act : N/A
- C. Dangerous Material Safety Management Regulation : N/A
- D. Waste Control Act : General industrial waste.
- E. Other regulation by Korea and foreign acts

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- Korean Regulation

Persistent organic pollutants control acts : N/A

- Foreign Regulation

U.S.A management information(OSHA Regulation) : N/A

U.S.A management information(CERCLA Regulation) : N/A

U.S.A management information(EPCRA 302 Regulation) : N/A

U.S.A management information(EPCRA 304 Regulation) : N/A

U.S.A management information(EPCRA 313 Regulation) : N/A

U.S.A management information(Rotterdam Protocol) : N/A

U.S.A management information(Stockholm Protocol) : N/A

U.S.A management information(Montreal Protocol) : N/A

EU classification information(Classification) : N/A

EU classification information(Risk Phases) : N/A

EU classification information(Safety Phrases) : N/A

16. Other Information

A. Data Source :

Korean Occupational Safety and Health Act.

NCIS(Chemicals Information System), KISchem(Korea Information System for Chemical Safety Management), Ministry of Public Safety and Security - Industrial Poisoning Manual, Hazard Identification and Risk Assessment, KOSHA, 2009(Specific target organ toxicity (repeated exposure))

Hazard Identification and Risk Assessment, KOSHA, 2009(Gamete Mutagenicity)

Hazard Identification and Risk Assessment, KOSHA, 2009(Skin)

Hazard Identification and Risk Assessment, KOSHA, 2009(Oral)

The Chemical Database, The Department of Chemistry at the University of Akron

B. Date of establishment : June, 3, 1996.

C. Revision Number and recent revision date : Rev. No.6 / October, 11, 2018.

D. Others : No data available.