



Date of Issue:  
06 August 2018

## SAFETY DATA SHEET PACKET

### Product Identifier

**SRM Number:** 186g  
**SRM Name:** pH Standards  
Potassium Dihydrogen Phosphate (186-I-g)  
Disodium Hydrogen Phosphate (186-II-g)

### SRM Description:

This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. A unit of SRM 186g consists of two components, each prepared to ensure high purity and uniformity:  $\text{KH}_2\text{PO}_4$ , Potassium Dihydrogen Phosphate (186-I-g) and  $\text{Na}_2\text{HPO}_4$ , Disodium Hydrogen Phosphate (186-II-g). However, neither SRM component is certified for purity of substance. A unit of SRM 186g consists of 30 g of potassium dihydrogen phosphate (186-I-g) and 45 g of disodium hydrogen phosphate (186-II-g), each contained in its respective clear glass bottle.

### SRM 186g Parts:

Potassium Dihydrogen Phosphate (186-I-g)  
Disodium Hydrogen Phosphate (186-II-g)

### Company Information

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200  
FAX: 301-948-3730  
E-mail: [SRMMSDS@nist.gov](mailto:SRMMSDS@nist.gov)  
Website: <https://www.nist.gov/srm>

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887 (International)

*This page intentionally left blank.*

# SAFETY DATA SHEET

## 1. SUBSTANCE AND SOURCE IDENTIFICATION

### Product Identifier

**SRM Number:** 186g  
**SRM Name:** pH Standards  
**SRM Part:** Potassium Dihydrogen Phosphate (186-I-g)  
**Other Means of Identification:** Not applicable.

### Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. SRM 186g consists of two components, each prepared to ensure high purity and uniformity:  $\text{KH}_2\text{PO}_4$ , Potassium Dihydrogen Phosphate (186-I-g) and  $\text{Na}_2\text{HPO}_4$ , Disodium Hydrogen Phosphate (186-II-g). However, neither SRM component is certified for purity of substance. A unit of SRM 186g consists of 30 g of potassium dihydrogen phosphate (186-I-g) and 45 g of disodium hydrogen phosphate (186-II-g), each contained in its respective clear glass bottle.

### Company Information

National Institute of Standards and Technology  
 Standard Reference Materials Program  
 100 Bureau Drive, Stop 2300  
 Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200  
 FAX: 301-948-3730  
 E-mail: SRMMSDS@nist.gov  
 Website: <https://www.nist.gov/srm>

Emergency Telephone ChemTrec:  
 1-800-424-9300 (North America)  
 +1-703-527-3887 (International)

## 2. HAZARDS IDENTIFICATION

**Note:** This SDS is for Potassium Dihydrogen Phosphate; see additional SDS for the classification for Disodium Hydrogen Phosphate

### Classification

**Physical Hazard:** Not classified.  
**Health Hazard:** Not classified.

### Label Elements

#### Symbol

No Symbol/Pictogram

#### Signal Word

No signal word.

#### Hazard Statement(s):

No hazard statements.

#### Precautionary Statement(s):

No precautionary statements

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients(s) with Unknown Acute Toxicity:** Not applicable.

---

### 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

---

**Substance:** Potassium dihydrogen phosphate

**Other Designations:** Potassium phosphate monobasic; potassium acid phosphate; potassium diphosphate; potassium orthophosphate.

Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the NIST Certificate of Analysis.

| Hazardous Component(s)         | CAS Number | EC Number (EINECS) | Nominal Mass Concentration (%) |
|--------------------------------|------------|--------------------|--------------------------------|
| Potassium dihydrogen phosphate | 7778-77-0  | 231-913-4          | 100                            |

---

### 4. FIRST AID MEASURES

---

**Description of First Aid Measures:**

**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

**Skin Contact:** Wash skin with soap and water for at least 15 minutes. Thoroughly clean and dry contaminated clothing before reuse.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

**Ingestion:** If a large amount is swallowed, get medical attention.

**Most Important Symptoms/Effects, Acute and Delayed:** May cause irritation.

**Indication of any immediate medical attention and special treatment needed, if necessary:** If any of the above symptoms are present, seek medical attention if needed.

---

### 5. FIRE FIGHTING MEASURES

---

**Fire and Explosion Hazards:** Negligible fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

**Extinguishing Media:**

Suitable: Use extinguishing agents appropriate for surrounding fire.

Unsuitable: None listed.

**Specific Hazards Arising from the Chemical:** None listed.

**Special Protective Equipment and Precautions for Fire-Fighters:** Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

**NFPA Ratings** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1

Fire = 0

Reactivity = 0

---

### 6. ACCIDENTAL RELEASE MEASURES

---

**Personal Precautions, Protective Equipment and Emergency Procedures:** Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

**Methods and Materials for Containment and Clean up:** Collect spilled material in appropriate container for disposal. Avoid generating dust.

---

### 7. HANDLING AND STORAGE

---

**Safe Handling Precautions:** Minimize dust generation. See Section 8, "Exposure Controls and Personal Protection".

**Storage:** Store the unused portion of this material in the original tightly-capped bottle in a dry environment at normal laboratory temperatures. Store and handling in accordance with all current regulations and standards. Keep separated from incompatible substances (See Section 10, "Stability and Reactivity").

---

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

---

**Exposure Limits:** No occupational exposure limits have been established for potassium dihydrogen phosphate. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. OSHA Particulates Not Otherwise Regulated (PNOR) exposure limits apply.

OSHA (PEL): 15 mg/m<sup>3</sup> (TWA, total dust)  
5 mg/m<sup>3</sup> (TWA, respirable fraction)

NIOSH (REL): 15 mg/m<sup>3</sup> (TWA, total dust)  
5 mg/m<sup>3</sup> (respirable fraction)

**Engineering Controls:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Personal Protection:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

**Respiratory Protection:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye/Face Protection:** Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

**Skin and Body Protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

| Descriptive Properties:                              | Potassium Dihydrogen Phosphate                         |
|--|--|
| <b>Appearance</b><br>(physical state, color, etc.):  | colorless to white, crystalline powder                 |
| <b>Molecular Formula:</b>                            | KH <sub>2</sub> PO <sub>4</sub>                        |
| <b>Molar Mass (g/mol):</b>                           | 136.09   |
| <b>Odor:</b>   | odorless   |
| <b>Odor threshold:</b>                               | not available  |
| <b>pH (solution):</b>                                | 4 to 4.5 (5 %)   |
| <b>Evaporation rate:</b>                             | not applicable   |
| <b>Melting point/freezing point (°C):</b>            | 253 (487.4 °F)   |
| <b>Relative Density (g/mL):</b>                      | 2.338 (water = 1)                                      |
| <b>Vapor Pressure (mmHg):</b>                        | not available  |
| <b>Vapor Density (air = 1):</b>                      | not available  |
| <b>Viscosity (cP):</b>                               | not applicable   |
| <b>Solubility(ies):</b>                              | water soluble (33 % at 25 °C);<br>insoluble in alcohol |
| <b>Partition coefficient (n-octanol/water):</b>      | not available  |
| <b>Particle Size:</b>                                | not available  |
| <b>Thermal Stability Properties:</b>                 |  |
| <b>Autoignition Temperature (°C):</b>                | not applicable   |
| <b>Thermal Decomposition (°C):</b>                   | not available  |
| <b>Initial boiling point and boiling range (°C):</b> | not applicable   |
| <b>Explosive Limits, LEL (Volume %):</b>             | not applicable   |
| <b>Explosive Limits, UEL (Volume %):</b>             | not applicable   |
| <b>Flash Point (°C):</b>                             | not applicable   |
| <b>Flammability (solid, gas):</b>                    | not available  |

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** Stable at normal temperatures and pressure.

**Stability:**   X   Stable        Unstable

**Possible Hazardous Reactions:** None listed.

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** Bases, and metals.

**Fire/Explosion Information:** See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Miscellaneous decomposition products.

**Hazardous Polymerization:**        Will Occur   X   Will Not Occur

---

## 11. TOXICOLOGICAL INFORMATION

---

**Route of Exposure:**   X   Inhalation        Skin   X   Ingestion

**Symptoms Related to the Physical, Chemical and Toxicological Characteristics:** Exposure may cause irritation.

**Potential Health Effects (Acute, Chronic and Delayed):**

**Inhalation:** Acute: mild irritation of mucous membranes, with sore throat and cough; chronic: no data available.

**Skin Contact:** Acute: prolonged contact may cause irritation; chronic: dermatitis.

**Eye Contact:** Acute: mild irritation; chronic: no data available.

**Ingestion:** Acute: large doses may cause nausea, diarrhea, cramps; chronic: same symptoms as acute exposure; bone and joint pain are also possible.

**Numerical Measures of Toxicity:**

**Acute Toxicity:** Not classified.

Rat, Oral LD50: 3200 mg/kg

Rabbit, Skin LD50: >4640 mg/m<sup>3</sup>

**Skin Corrosion/Irritation:** Not classified. No data available.

**Serious Eye damage/Eye irritation:** Not classified. No data available.

**Respiratory Sensitization:** Not classified; no data available.

**Skin Sensitization:** Not classified; no data available.

**Germ Cell Mutagenicity:** Not classified; no data available.

**Carcinogenicity:** Not classified.

**Listed as a Carcinogen/Potential Carcinogen**        Yes   X   No

Potassium dihydrogen phosphate is not listed by IARC, NTP or OSHA as a carcinogen.

**Reproductive Toxicity:** Not classified.

Rat, Oral TDLo: 6846 mg/kg (pregnant 1 d to 22 d)

**Specific Target Organ Toxicity, Single Exposure:** Not classified; no data available.

**Specific Target Organ Toxicity, Repeated Exposure:** Not classified; no data available.

**Aspiration Hazard:** Not classified; no data available.

---

## 12. ECOLOGICAL INFORMATION

---

**Ecotoxicity Data:**

Invertebrate: Polychaete worm (*Capitella capitata*) LC50: 2400 µg/L (28 d), static

Mollusk: Zebra mussel, adult, length 1.5-2.0 cm (*Dreissena polymorpha*) LC50: 137 000 µg/L (24 h) fresh water at 10 °C, pH 7, static

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse effects:** No data available.

---

### **13. DISPOSAL CONSIDERATIONS**

---

**Waste Disposal:** Dispose of waste in accordance with all applicable federal, state, and local regulations.

---

### **14. TRANSPORTATION INFORMATION**

---

**U.S. DOT and IATA:** Not regulated by DOT or IATA.

---

### **15. REGULATORY INFORMATION**

---

**U.S. Regulations:**

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH: No.

CHRONIC HEALTH: No.

FIRE: No.

REACTIVE: No.

PRESSURE: No.

**State Regulations:**

California Proposition 65: Not listed.

**U.S. TSCA Inventory:** Listed.

**TSCA 12(b), Export Notification:** Not listed.

**Canadian Regulations:**

WHMIS Information: Not provided for this material.

---

## 16. OTHER INFORMATION

---

**Issue Date:** 06 August 2018

**Sources:** ChemADVISOR, Inc., SDS *Potassium Phosphate Monobasic*, 09 December 2015.

Hazardous Substances Data Bank, National Library of Medicine, *Monopotassium Dihydrogen Phosphate* CAS# 7778-77-0, available at <https://toxnet.nlm.nih.gov/> (accessed Aug 2018).

29 CFR Occupational Health and Safety Office (OSHA) 1910.1000, *Limits for Air Contaminants*, Table Z-1; available at [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9992](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992) (accessed Aug 2018).

Center for Disease Control (CDC) NIOSH Pocket Guide to Chemical Hazards, *Particulates not otherwise regulated*; available at <https://www.cdc.gov/niosh/npgd/npgd0480.html> (accessed Aug 2018).

### Key of Acronyms:

|        |   |       |   |
|--------|---|-------|---|
| ACGIH  | American Conference of Governmental Industrial Hygienists             | NIOSH | National Institute for Occupational Safety and Health |
| ALI    | Annual Limit on Intake  | NIST  | National Institute of Standards and Technology        |
| CAS    | Chemical Abstracts Service  | NRC   | Nuclear Regulatory Commission                         |
| CEN    | European Committee for Standardization                                | NTP   | National Toxicology Program                           |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | OSHA  | Occupational Safety and Health Administration         |
| CFR    | Code of Federal Regulations   | PEL   | Permissible Exposure Limit                            |
| CPSU   | Coal Mine Dust Personal Sample Unit                                   | RCRA  | Resource Conservation and Recovery Act                |
| DOT    | Department of Transportation  | REL   | Recommended Exposure Limit                            |
| EC50   | Effective Concentration, 50 %   | RM    | Reference Material                                    |
| EINECS | European Inventory of Existing Commercial Chemical Substances         | RQ    | Reportable Quantity                                   |
| EPCRA  | Emergency Planning and Community Right-to-Know Act                    | RTECS | Registry of Toxic Effects of Chemical Substances      |
| IARC   | International Agency for Research on Cancer                           | SARA  | Superfund Amendments and Reauthorization Act          |
| IATA   | International Air Transport Association                               | SCBA  | Self-Contained Breathing Apparatus                    |
| IDLH   | Immediately Dangerous to Life and Health                              | SRM   | Standard Reference Material                           |
| ISO    | International Organization for Standardization                        | STEL  | Short Term Exposure Limit                             |
| LC50   | Lethal Concentration, 50 %  | TDLo  | Toxic Dose Low  |
| LD50   | Lethal Dose, 50 %   | TLV   | Threshold Limit Value                                 |
| LEL    | Lower Explosive Limit   | TPQ   | Threshold Planning Quantity                           |
| MSDS   | Material Safety Data Sheet  | TSCA  | Toxic Substances Control Act                          |
| NFPA   | National Fire Protection Association                                  | TWA   | Time Weighted Average                                 |
| MSHA   | Mine Safety and Health Administration                                 | UEL   | Upper Explosive Limit                                 |
|        |   | WHMIS | Workplace Hazardous Materials Information System      |

**Disclaimer:** Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail [srmmsds@nist.gov](mailto:srmmsds@nist.gov); or via the Internet at <https://www.nist.gov/srm>.



## SAFETY DATA SHEET

---

### 1. SUBSTANCE AND SOURCE IDENTIFICATION

---

**Product Identifier**

**SRM Number:** 186g  
**SRM Name:** pH Standards  
**SRM Part:** Disodium Hydrogen Phosphate (186-II-g)  
**Other Means of Identification:** Not applicable.

**Recommended Use of This Material and Restrictions of Use**

This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. SRM 186g consists of two components, each prepared to ensure high purity and uniformity:  $\text{KH}_2\text{PO}_4$ , Potassium Dihydrogen Phosphate (186-I-g) and  $\text{Na}_2\text{HPO}_4$ , Disodium Hydrogen Phosphate (186-II-g). However, neither SRM component is certified for purity of substance. A unit of SRM 186g consists of 30 g of potassium dihydrogen phosphate (186-I-g) and 45 g of disodium hydrogen phosphate (186-II-g), each contained in its respective clear glass bottle.

**Company Information**

National Institute of Standards and Technology  
 Standard Reference Materials Program  
 100 Bureau Drive, Stop 2300  
 Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200  
 FAX: 301-948-3730  
 E-mail: SRMMSDS@nist.gov  
 Website: <https://www.nist.gov/srm>

Emergency Telephone ChemTrec:  
 1-800-424-9300 (North America)  
 +1-703-527-3887 (International)

---

### 2. HAZARDS IDENTIFICATION

---

**Note:** This SDS is for Disodium Hydrogen Phosphate; see additional SDS for the classification for Potassium Dihydrogen Phosphate.

**Classification**

**Physical Hazard:** Not classified.  
**Health Hazard:** Not classified.

**Label Elements**
**Symbol**

No Symbol/Pictogram

**Signal Word**

No signal word.

**Hazard Statement(s):**

No hazard statements.

**Precautionary Statement(s):**

No precautionary statements

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients(s) with Unknown Acute Toxicity:** Not applicable.

---

### 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

---

**Substance:** Disodium hydrogen phosphate

**Other Designations:** Sodium phosphate dibasic; disodium phosphate; disodium phosphoric acid

Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the NIST Certificate of Analysis.

| Hazardous Component(s)      | CAS Number | EC Number<br>(EINECS) | Nominal Mass Concentration<br>(%) |
|-----------------------------|------------|-----------------------|-----------------------------------|
| Disodium hydrogen phosphate | 7558-79-4  | 231-448-7             | 100                               |

---

### 4. FIRST AID MEASURES

---

**Description of First Aid Measures:**

**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

**Skin Contact:** Wash skin with soap and water for at least 15 minutes. Thoroughly clean and dry contaminated clothing before reuse.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

**Ingestion:** If a large amount is swallowed, get medical attention.

**Most Important Symptoms/Effects, Acute and Delayed:** Irritation.

**Indication of any immediate medical attention and special treatment needed, if necessary:** If any of the above symptoms are present, seek medical attention if needed.

---

### 5. FIRE FIGHTING MEASURES

---

**Fire and Explosion Hazards:** Negligible fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

**Extinguishing Media:**

Suitable: Use extinguishing agents appropriate for surrounding fire.

Unsuitable: None listed.

**Specific Hazards Arising from the Chemical:** None listed.

**Special Protective Equipment and Precautions for Fire-Fighters:** Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

**NFPA Ratings** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1

Fire = 0

Reactivity = 0

---

### 6. ACCIDENTAL RELEASE MEASURES

---

**Personal Precautions, Protective Equipment and Emergency Procedures:** Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

**Methods and Materials for Containment and Clean up:** Collect spilled material in appropriate container for disposal. Avoid generating dust.

---

### 7. HANDLING AND STORAGE

---

**Safe Handling Precautions:** Minimize dust generation. See Section 8, "Exposure Controls and Personal Protection".

**Storage:** Store the unused portion of this material in the original tightly-capped bottle in a dry environment at normal laboratory temperatures. Store and handling in accordance with all current regulations and standards. Keep separated from incompatible substances (See Section 10, "Stability and Reactivity").

---

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

---

**Exposure Limits:** No occupational exposure limits have been established for disodium hydrogen phosphate. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. OSHA Particulates Not Otherwise Regulated (PNOR) exposure limits apply.

OSHA (PEL): 15 mg/m<sup>3</sup> (TWA, total dust)

OSHA (PEL) 5 mg/m<sup>3</sup> (TWA, respirable fraction)

NIOSH (REL): 10 mg/m<sup>3</sup> (TWA, total dust, 8 h)

NIOSH (REL): 5 mg/m<sup>3</sup> (TWA, respirable fraction)

**Engineering Controls:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Personal Protection:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

**Respiratory Protection:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye/Face Protection:** Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

**Skin and Body Protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

| Descriptive Properties:                                     | Disodium Hydrogen Phosphate                |
|---|--|
| <b>Appearance</b><br>(physical state, color, etc.):         | translucent colorless, white powder        |
| <b>Molecular Formula:</b>                                   | Na <sub>2</sub> HPO <sub>4</sub>           |
| <b>Molar Mass (g/mol):</b>                                  | 141.96                                     |
| <b>Odor:</b>  | odorless                                   |
| <b>Odor threshold:</b>                                      | not available                              |
| <b>pH (solution):</b>                                       | 9.1 (1 %)                                  |
| <b>Evaporation rate:</b>                                    | not applicable                             |
| <b>Melting point/freezing point (°C):</b>                   | not available                              |
| <b>Relative Density</b><br>as Specific Gravity (water = 1): | 2.066 at 16 °C                             |
| <b>Vapor Pressure (mmHg):</b>                               | not available                              |
| <b>Vapor Density (air = 1):</b>                             | not applicable                             |
| <b>Viscosity (cP):</b>                                      | not applicable                             |
| <b>Solubility(ies):</b>                                     | water: 12.5 %<br>alcohol: slightly soluble |
| <b>Partition coefficient (n-octanol/water):</b>             | not available                              |
| <b>Particle Size:</b>                                       | not available                              |
| <b>Thermal Stability Properties:</b>                        |  |
| <b>Autoignition Temperature (°C):</b>                       | not applicable                             |
| <b>Thermal Decomposition (°C):</b>                          | not available                              |
| <b>Initial boiling point and boiling range (°C):</b>        | not available                              |
| <b>Explosive Limits, LEL (Volume %):</b>                    | not applicable                             |
| <b>Explosive Limits, UEL (Volume %):</b>                    | not applicable                             |
| <b>Flash Point (°C):</b>                                    | not applicable                             |
| <b>Flammability (solid, gas):</b>                           | not available                              |

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** Stable at normal temperatures and pressure.

**Stability:**   X   Stable        Unstable

**Possible Hazardous Reactions:** None listed.

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** Acids, metals.

**Fire/Explosion Information:** See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Thermal decomposition will produce oxides of sodium and oxides of phosphorus.

**Hazardous Polymerization:**        Will Occur   X   Will Not Occur

---

## 11. TOXICOLOGICAL INFORMATION

---

**Route of Exposure:**   X   Inhalation   X   Skin        Ingestion

**Symptoms Related to the Physical, Chemical and Toxicological Characteristics:** Exposure may cause irritation.

**Potential Health Effects (Acute, Chronic and Delayed):**

**Inhalation:** Acute: mild irritation of mucous membranes, with sore throat and cough; chronic: no data available.

**Skin Contact:** Acute: mild irritation and redness; chronic: dermatitis.

**Eye Contact:** Acute: mild irritation with redness and pain; chronic: no data available.

**Ingestion:** Acute: pain and burning in the mouth, abdominal pain, nausea, vomiting, diarrhea, and cramps.

**Numerical Measures of Toxicity:**

**Acute Toxicity:** Not classified.

Rat, Oral LD50: 17 000 mg/kg

**Skin Corrosion/Irritation:** Not classified.

Rabbit, Skin (mild): 500 mg (4 h)

**Serious Eye damage/Eye irritation:** Not classified.

Rabbit, Eye (mild): 500 mg (24 h)

**Respiratory Sensitization:** Not classified; no data available.

**Skin Sensitization:** Not classified; no data available.

**Germ Cell Mutagenicity:** Not classified; no data available.

**Carcinogenicity:** Not classified.

**Listed as a Carcinogen/Potential Carcinogen**        Yes   X   No

Disodium hydrogen phosphate is not listed by IARC, NTP or OSHA as a carcinogen.

**Reproductive Toxicity:** Not classified; no data available.

**Specific Target Organ Toxicity, Single Exposure:** Not classified; no data available.

**Specific Target Organ Toxicity, Repeated Exposure:** Not classified; no data available.

**Aspiration Hazard:** Not classified; no data available.

---

## 12. ECOLOGICAL INFORMATION

---

**Ecotoxicity Data:**

Invertebrate: Water flea (*Daphnia magna*) LC50: 1154 mg/L (25 h) fresh water 21 °C to 25 °C, static

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse effects:** No data available.

---

### 13. DISPOSAL CONSIDERATIONS

---

**Waste Disposal:** Dispose of waste in accordance with all applicable federal, state, and local regulations.

---

### 14. TRANSPORTATION INFORMATION

---

**U.S. DOT and IATA:** Not regulated by DOT or IATA.

---

### 15. REGULATORY INFORMATION

---

**U.S. Regulations:**

CERCLA Sections 102a/103 (40 CFR 302.4): 5000 lbs (2270 kg) final RQ.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH: No.

CHRONIC HEALTH: No.

FIRE: No.

REACTIVE: No.

PRESSURE: No.

**State Regulations:**

California Proposition 65: Not listed.

**U.S. TSCA Inventory:** Listed.

**TSCA 12(b), Export Notification:** Not listed.

**Canadian Regulations:**

WHMIS Information: Not provided for this material.

---

## 16. OTHER INFORMATION

---

**Issue Date:** 06 August 2018

**Sources:** ChemADVISOR, Inc., MSDS *Sodium Phosphate, Dibasic*, 21 March 2014.

Hazardous Substances Data Bank, National Library of Medicine, *Disodium Hydrogen Phosphate* CAS# 7558-79-4, available at <https://toxnet.nlm.nih.gov/> (accessed Aug 2018).

29 CFR Occupational Health and Safety Office (OSHA) 1910.1000, *Limits for Air Contaminants*, Table Z-1; available at [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9992](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992) (accessed Aug 2018).

Center for Disease Control (CDC) NIOSH Pocket Guide to Chemical Hazards, *Particulates not otherwise regulated*; available at <https://www.cdc.gov/niosh/npg/npgd0480.html> (accessed Aug 2018).

### Key Acronyms

|        |   |       |   |
|--------|---|-------|---|
| ACGIH  | American Conference of Governmental Industrial Hygienists             | NIOSH | National Institute for Occupational Safety and Health |
| ALI    | Annual Limit on Intake  | NIST  | National Institute of Standards and Technology        |
| CAS    | Chemical Abstracts Service  | NRC   | Nuclear Regulatory Commission                         |
| CEN    | European Committee for Standardization                                | NTP   | National Toxicology Program                           |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | OSHA  | Occupational Safety and Health Administration         |
| CFR    | Code of Federal Regulations   | PEL   | Permissible Exposure Limit                            |
| CPSU   | Coal Mine Dust Personal Sample Unit                                   | RCRA  | Resource Conservation and Recovery Act                |
| DOT    | Department of Transportation  | REL   | Recommended Exposure Limit                            |
| EC50   | Effective Concentration, 50 %   | RM    | Reference Material                                    |
| EINECS | European Inventory of Existing Commercial Chemical Substances         | RQ    | Reportable Quantity                                   |
| EPCRA  | Emergency Planning and Community Right-to-Know Act                    | RTECS | Registry of Toxic Effects of Chemical Substances      |
| IARC   | International Agency for Research on Cancer                           | SARA  | Superfund Amendments and Reauthorization Act          |
| IATA   | International Air Transport Association                               | SCBA  | Self-Contained Breathing Apparatus                    |
| IDLH   | Immediately Dangerous to Life and Health                              | SRM   | Standard Reference Material                           |
| ISO    | International Organization for Standardization                        | STEL  | Short Term Exposure Limit                             |
| LC50   | Lethal Concentration, 50 %  | TDLo  | Toxic Dose Low  |
| LD50   | Lethal Dose, 50 %   | TLV   | Threshold Limit Value                                 |
| LEL    | Lower Explosive Limit   | TPQ   | Threshold Planning Quantity                           |
| MSDS   | Material Safety Data Sheet  | TSCA  | Toxic Substances Control Act                          |
| NFPA   | National Fire Protection Association                                  | TWA   | Time Weighted Average                                 |
| MSHA   | Mine Safety and Health Administration                                 | UEL   | Upper Explosive Limit                                 |
|        |   | WHMIS | Workplace Hazardous Materials Information System      |

**Disclaimer:** Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail [srmmsds@nist.gov](mailto:srmmsds@nist.gov); or via the Internet at <https://www.nist.gov/srm>.