

# Disodium Phosphate Food Grade MSDS

## 1. Product Name and Identification

**Product Name:** [Disodium Phosphate Food Grade \(DSP\)](#)

**Chemical Name:** Disodium hydrogen phosphate

**Chemical Formula:** Na<sub>2</sub>HPO<sub>4</sub>

**CAS Number:** 7558-79-4

**EC Number:** 231-448-7

**Molecular Weight:** 141.96 g/mol

**Product Use:** Food additive, emulsifier, buffering agent, nutritional supplement, baking powder component

**Supplier Information:** [Company Name, Address, Phone Number, Emergency Contact Information]

## 2. Composition/Ingredients

**Component:** Disodium Phosphate (Anhydrous)

**Concentration:** ≥ 98%

**CAS Number:** 7558-79-4

**EINECS Number:** 231-448-7

**Impurities:** May contain trace amounts of monosodium phosphate and trisodium phosphate

**Water Content:** ≤ 1.0% (anhydrous grade)

**Heavy Metals:** ≤ 10 ppm (as Pb)

**Arsenic:** ≤ 3 ppm

## 3. Hazards Identification

### GHS Classification:

- Not classified as hazardous under normal handling conditions
- Eye Irritation (Category 2B) - potential mechanical irritation from dust
- GRAS (Generally Recognized as Safe) for food use

**Signal Word:** None required

### Hazard Statements:

- May cause mechanical eye irritation if dust contacts eyes
- Dust inhalation may cause temporary respiratory discomfort

### Precautionary Statements:

- Avoid breathing dust particles
- Wash hands thoroughly after handling

- Use eye protection when dust generation is possible
- Maintain adequate ventilation

## 4. First Aid Measures

### **Inhalation:**

- Move person to fresh air and maintain comfortable breathing position
- If coughing or throat irritation occurs, provide water to drink
- No specific treatment required for normal dust exposure
- Seek medical advice if respiratory symptoms persist

### **Skin Contact:**

- Wash affected area with soap and plenty of water
- Remove dust-contaminated clothing and wash before reuse
- No adverse skin effects expected from normal contact
- If skin dryness occurs, apply appropriate moisturizer

### **Eye Contact:**

- Flush eyes immediately with clean water for 15 minutes
- Remove contact lenses if present and easy to remove after initial flushing
- Hold eyelids open to ensure thorough irrigation
- Seek medical attention if irritation continues

### **Ingestion:**

- Rinse mouth with water
- Give water or milk to drink if person is conscious
- No specific treatment needed for small amounts
- Contact medical professional if large quantities consumed or discomfort occurs

## 5. Handling and Storage

### **Handling Precautions:**

- Follow good industrial hygiene practices
- Minimize dust formation during transfer operations
- Avoid prolonged skin contact with dusty material
- Use clean, dry handling equipment
- Prevent contamination from foreign materials

### **Storage Requirements:**

- Store in original container in cool, dry location
- Keep tightly sealed to prevent moisture absorption
- Maintain storage temperature between 15-30°C
- Protect from excessive humidity and direct sunlight
- Keep separate from strong acids and incompatible materials
- Ensure proper ventilation in storage areas

## 6. Exposure Controls/Personal Protection

### Exposure Limits:

- OSHA PEL: 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction)
- ACGIH TLV: 10 mg/m<sup>3</sup> (inhalable particles), 3 mg/m<sup>3</sup> (respirable particles)
- No specific substance exposure limits established

### Engineering Controls:

- Provide adequate general ventilation
- Use local exhaust ventilation for dusty operations
- Install dust collection systems for bulk handling
- Maintain clean work environment through regular housekeeping

### Personal Protective Equipment:

- **Respiratory:** N95 dust mask for dusty conditions
- **Eye Protection:** Safety glasses with side shields when dust is present
- **Skin Protection:** Work gloves for handling comfort (not safety requirement)
- **Body Protection:** Standard work clothing adequate

## 7. Physical and Chemical Properties

**Appearance:** White crystalline powder or granules

**Odor:** Odorless

**pH:** 8.0-9.0 (1% aqueous solution)

**Melting Point:** Decomposes before melting

**Decomposition Temperature:** >250°C

**Density:** 1.679 g/cm<sup>3</sup>

**Bulk Density:** 0.9-1.2 g/cm<sup>3</sup>

**Solubility:** Highly soluble in water (71.2 g/100 mL at 20°C)

**Solubility:** Insoluble in alcohol

**Hygroscopicity:** Moderately hygroscopic

**Particle Size:** 80-200 mesh (typical food grade)

## 8. Stability and Reactivity

**Chemical Stability:** Stable under recommended storage and handling conditions

**Conditions to Avoid:**

- Strong acidic conditions (pH < 5)
- Temperatures above 200°C for extended periods
- High humidity environments for prolonged storage

**Incompatible Materials:**

- Strong mineral acids
- Heavy metal salts (calcium, magnesium, iron)
- Strong reducing agents
- Aluminum compounds under certain conditions

**Hazardous Decomposition Products:**

- Sodium oxide (at high temperatures)
- Phosphorus pentoxide (at decomposition temperature)
- Water vapor

**Hazardous Reactions:** Forms precipitates with certain metal ions; gradual conversion to other phosphate forms in acidic conditions

## 9. Toxicological Information

**Acute Toxicity:**

- Oral LD50 (rat): >5,000 mg/kg (practically non-toxic)
- Dermal toxicity: Expected to be non-toxic based on chemical properties
- Inhalation: Nuisance dust effects only

**Health Effects:**

- **Acute:** No significant adverse effects expected from normal exposure
- **Chronic:** No known chronic health effects from occupational use
- **Carcinogenicity:** Not listed by IARC, NTP, or OSHA
- **Reproductive:** No known reproductive or developmental effects

**Target Organs:** None identified

**Food Safety Information:**

- GRAS status for food applications
- Essential nutrient component (sodium and phosphorus)
- Widely used in food processing without adverse effects

- Contributes to daily phosphorus intake when consumed

**Medical Considerations:**

- Individuals on sodium-restricted diets should be aware of sodium content
- Generally well-tolerated in normal food applications

## 10. Disposal Considerations

**Waste Disposal Methods:**

- Dispose according to local, state, and federal environmental regulations
- Can typically be disposed as non-hazardous waste
- Small amounts may be dissolved and discharged to wastewater treatment where permitted
- Consider use as fertilizer component if appropriate

**Container Disposal:**

- Empty containers can be recycled through appropriate programs
- Rinse containers thoroughly before recycling
- No special container disposal requirements
- Follow standard waste management practices

**Environmental Considerations:**

- Environmentally acceptable compound in normal quantities
- Provides beneficial nutrients (sodium and phosphorus) for plant growth
- Biodegradable and does not persist in environment
- Not expected to bioaccumulate

**Regulatory Information:**

- Not classified as hazardous waste
- May contribute to nutrient content in wastewater
- Check local phosphate discharge regulations for large quantities
- Generally exempt from special disposal requirements

**Document Prepared:** September 4, 2025

**Document Version:** 1.0

**Next Review Date:** September 4, 2028

**Emergency Contact:** [Insert 24-hour emergency response number]

**Food Safety Compliance:** Meets FDA food additive regulations and FCC specifications

**Regulatory Compliance:** This document complies with OSHA HCS 2012 and GHS requirements

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