1. Product Identification

**Synonyms:** Phosphinic acid, sodium salt, monohydrate; Chemical NA-47  
**CAS No.:** 7681-53-0 (Anhydrous); 10039-56-2 (Monohydrate)  
**Molecular Weight:** 105.99  
**Chemical Formula:** NaH₂PO₂.H₂O  
**Product Codes:** 3740

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hypophosphite</td>
<td>7681-53-0</td>
<td>90 - 100%</td>
</tr>
</tbody>
</table>

Yes

3. Hazards Identification

**Emergency Overview**

WARNING! DECOMPOSITION PRODUCES TOXIC FLAMMABLE PHOSPHINE GAS. STRONG REDUCING AGENT. MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES,
AND RESPIRATORY TRACT.

J.T. Baker SAF-T-DATA\textsuperscript{tm} Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

Ingestion:
Not considered a toxic hazard but the ingestion of appreciable amounts may cause gastrointestinal disturbance. Nausea, vomiting and diarrhea may be experienced.

Skin Contact:
May cause irritation, especially on moist or sensitive areas. May cause moderate inflammation after prolonged contact.

Eye Contact:
May cause irritation, redness and pain.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
Asthma, skin conditions, respiratory conditions.

4. First Aid Measures

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.
5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard. When heated, may form spontaneously flammable phosphine.

Explosion:
Sodium hypophosphite explodes when titrated with chlorates or other oxidizing agents. A thermal explosion will occur if sodium hypophosphite is heated under confinement.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

7. Handling and Storage

Store in a cool, dry, ventilated area away from sources of heat, moisture, and incompatible substances. Isolate from oxidizing materials. Keep away from all sources of heat, ignition and sparks because even residues of sodium hypophosphite can decompose to form flammable, explosive phosphine gas. Do not cut, grind, weld, or drill on or near this container, even when empty, because an explosion can result. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**
Wear protective gloves and clean body-covering clothing.

**Eye Protection:**
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

### 9. Physical and Chemical Properties

**Appearance:**
White crystals.

**Odor:**
Odorless.

**Solubility:**
100 g in 100 g of water.

**Specific Gravity:**
No information found.

**pH:**
No information found.

**% Volatiles by volume @ 21C (70F):**
0

**Boiling Point:**
Not applicable.

**Melting Point:**
200C (392F) Decomposes, loses water

**Vapor Density (Air=1):**
No information found.

**Vapor Pressure (mm Hg):**
No information found.

**Evaporation Rate (BuAc=1):**
No information found.

### 10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**
Can decompose to form flammable, explosive phosphine gas.

**Hazardous Polymerization:**
Will not occur.
Incompatibilities:
Heat, fire. Contact with strong oxidizers may cause an explosion. Sodium hypophosphite decomposes in hot alkaline solution an liberates toxic and flammable phosphine gas. Self-reactive explosions can occur when hot sodium hypophosphite solution is evaporated.

Conditions to Avoid:
No information found.

11. Toxicological Information

For Monohydrate: Oral rat LD50: 7640 mg/kg.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC</th>
</tr>
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<tbody>
<tr>
<td>Sodium Hypophosphite (7681-53-0)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information
Chemical Inventory Status - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
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<tr>
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Chemical Inventory Status - Part 2

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<tr>
<th>Ingredient</th>
<th>Korea</th>
<th>DSL</th>
<th>NDSL</th>
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<tbody>
<tr>
<td>Sodium Hypophosphite (7681-53-0)</td>
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<td>Yes</td>
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Federal, State & International Regulations - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>RQ</th>
<th>TPQ</th>
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<tbody>
<tr>
<td>Sodium Hypophosphite (7681-53-0)</td>
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<td>No</td>
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Federal, State & International Regulations - Part 2

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CERCLA</th>
<th>261.33</th>
<th>TSCA- 8(d)</th>
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</thead>
<tbody>
<tr>
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<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Chemical Weapons Convention: No  TSCA 12(b): No  CDTA: Yes
SARA 311/312: Acute: Yes  Chronic: No  Fire: Yes  Pressure: No
Reactivity: Yes  (Pure / Solid)

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:
Health: 1  Flammability: 1  Reactivity: 2

Label Hazard Warning:
WARNING! DECOMPOSITION PRODUCES TOXIC FLAMMABLE PHOSPHINE
GAS. STRONG REDUCING AGENT. MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:
Avoid breathing dust.
Keep container tightly closed.
Use with adequate ventilation.
Wash thoroughly after handling.
Avoid contact with eyes, skin and clothing.
Keep away from heat, sparks and flame.

Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

Product Use:
Laboratory Reagent.

Revision Information:
No Changes.

Disclaimer:
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Prepared by: Environmental Health & Safety
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