

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Sodium Borohydride
- English Name: Sodium Borohydride
- CAS Number: 16940-66-2
- Formula: NaBH₄
- Molecular Weight: 37.83 g/mol
- Product Characteristics: High-purity white crystalline powder, strong reducing agent. Soluble in water (slow reaction) and organic solvents. Stable under dry conditions, reacts with water and acids to release hydrogen gas.

2. Technical Specifications

| Item | Specification |
|--|--------------------------|
| Appearance | White crystalline powder |
| Purity (NaBH ₄) | ≥ 98.0% |
| Moisture Content | ≤ 0.5% |
| Sodium Metaborate (NaBO ₂) | ≤ 1.0% |
| Heavy Metals (Pb) | ≤ 0.001% |
| Iron (Fe) | ≤ 0.005% |
| Chloride (Cl ⁻) | ≤ 0.01% |
| Insoluble Matter in Water | ≤ 0.1% |
| pH Value (1% solution, 25°C) | 10-11 |
| Solubility (20°C) | ≥ 90 g/L (water) |

3. Product Advantages

- High purity and strong reducing activity for efficient chemical reactions.
- Versatile solubility in water and organic solvents.
- Stable under proper storage conditions.
- Effective for heavy metal removal in wastewater treatment.

4. Application Fields

- Organic Synthesis: Reduction of aldehydes, ketones, esters, carboxylic acids, nitro compounds.
- Wastewater Treatment: Removal of heavy metals (Pb, Cd, Hg) through precipitation.
- Electroplating: Nickel, cobalt, and precious metal plating baths.
- Paper Industry: Bleaching agent for pulp and paper.
- Hydrogen Generation: Controlled reaction with water or alcohols to produce hydrogen.

5. Usage Methods

- Organic Synthesis: Dissolve in dry solvent (THF, methanol) at 0-25°C, add to reaction system slowly.
- Wastewater Treatment: Add 50-200 ppm to wastewater, stir for 30 minutes, filter precipitates.
- Hydrogen Generation: Mix with 5-10% aqueous solution (cooled) to control hydrogen release.



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- Optimal Conditions: Use at 0-30°C; avoid contact with strong acids and oxidizing agents.

6. Packaging & Storage

- Packaging Specifications: 1 kg/bag (moisture-proof plastic bag), 25 kg/drum (HDPE, moisture-proof), 100 kg/drum (HDPE, moisture-proof).
- Storage Conditions: Store in cool, dry, well-ventilated warehouse. Keep container tightly closed. Avoid moisture, heat, and oxidizing agents. Temperature $\leq 30^{\circ}\text{C}$.
- Shelf Life: 18 months (unopened, under specified storage conditions).
- Transportation: Handle as UN1426. Transport in moisture-proof containers. Avoid collision and moisture.

7. Safety & Protection

- Wear chemical protective suit, nitrile gloves, chemical splash goggles, face shield, and respiratory protection during handling.
- Avoid contact with air, water, acids, and oxidizing agents. In case of contact, follow first aid measures immediately.
- Firefighting: Use dry sand, dry powder, or CO_2 ; do not use water.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch accompanied by COA.
- Provide technical support for application and formulation.

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