



上海海关工业品与原材料检测技术中心

Technical Center for Industrial Products and Raw Materials Inspection and Testing of Shanghai Customs District

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安全数据单（化学品安全技术说明书）委托审核 检测/鉴定报告

报检号: 9250543937

日期: 2025/12/10

委托单位: 上海尖精化工有限公司

供应商 / 生产单位: SHANGHAI TOPFINE CHEMICAL CO.,LTD.

申报品名: SODIUM OCTABORATE TETRAHYDRATE

申请单位 MSDS 或 SDS 编号: (英文 MSDS)

依据: GB/T 16483-2008 化学品安全技术说明书 内容和项目顺序;

联合国《全球化学品统一分类和标签制度》(第十修订版)

委托审核结果:

项目	结果	项目	结果
1.化学品及企业标识	符合	9.理化特性	符合
2.危险性概述	符合	10.稳定性和反应性	符合
3.成分/组成信息	符合	11.毒理学信息	符合
4.急救措施	符合	12.生态学信息	符合
5.消防措施	符合	13.废弃处置	符合
6.泄漏应急处理	符合	14.运输信息	符合
7.操作处置与储存	符合	15.法规信息	符合
8.接触控制/个体防护	符合	16.其他信息	符合

意见:

该产品的安全数据单（化学品安全技术说明书或 MSDS 或 SDS）经整改后符合 GB/T16483-2008 的要求。本报告的有效期至 2026 年 12 月 9 日。若生产单位发现该产品有新的危险特性，应立即公告并及时修订安全数据单。

委托单位对所提供的安全数据单（包含样品名称、成分、纯度及其他基本理化性质、健康和环境危险性质）的真实性负责。委托单位承担因安全数据单信息错误造成的一切可能后果。

主任检验员:

国家化学品分类鉴别与评估重点实验室

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识别码: 7nhuiq



Sodium Octaborate Tetrahydrate

Chemical Safety Data Sheet (MSDS) Version: 1.0 | Date: 2024-11-28 | Issued by:
Shanghai Topfine Chemical Co., Ltd.



1. Chemical Product and Company Identification

1.1 Product Identification

Product Name:	Sodium Octaborate Tetrahydrate
Brand:	NW
CAS Registry Number:	12280-03-4
Synonyms:	Sodium octaborate; Instant boron; Foliar fertilizer; Sodium octaborate tetrahydrate

1.2 Recommended Uses and Restrictions on Use

Identified Uses:	For research purposes only.
Restricted Uses:	Not for use as a drug, household medicine, or in food/feed applications.

1.3 Supplier Details

Manufacturer/Supplier:	Shanghai Topfine Chemical Co., Ltd.
Address:	3rd Floor, South Building, Building 1, No. 456 Fute North Road, Pudong New Area, Shanghai
Telephone:	+86-021-58589995
Fax:	+86-021-58589995
Email:	(Please contact the supplier for official email)

1.4 Emergency Contact

24-Hour Emergency Number:	+86-021-58589995
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合格03

2. Hazards Identification

2.1 GHS Classification

Reproductive Toxicity: Category 1B (H360: May damage fertility or the unborn child)

Serious Eye Irritation: Category 2 (H319: Causes serious eye irritation)

2.2 GHS Label Elements

Pictogram

DANGER



Signal Word

Hazard Statements

H319:

Causes serious eye irritation

H360:

May damage fertility or the unborn child

Precautionary Statements

Prevention (P):

P201:

Obtain special instructions before use.

P202:

Do not handle until all safety precautions have been read and understood.

P264:

Wash hands thoroughly after handling.

P280:

Wear protective gloves/protective clothing/eye protection/face protection.

Response (P):

P305+P351+P338:

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

P308+P313:

IF exposed or concerned: Get medical advice /attention.

Storage (P):

P405:

Store locked up.

P403+P233:

Store in a well-ventilated place. Keep container tightly closed.

Disposal (P):

P501:

Dispose of contents/container to an approved waste disposal plant.



2.3 Unclassified Hazards

No additional hazards identified (HNOC or non-GHS covered hazards).

3 Composition/Information on Ingredients

material		
Common name:		Sodium octaborate; quick-dissolving boron; foliar fertilizer; Sodium octaborate tetrahydrate
Molecular formula:		B ₈ H ₈ Na ₂ O ₁₇
Molecular weight:		412.52
CAS No. :		12280-03-4
EC-NO:		No data available
component	classify	Concentration Range
Sodium Octaborate Tetrahydrate	No data available	≥98% (Boron content:20-22%)
Water	No data available	≤2%

4.First-Aid Measures

4.1 General Advice

Immediately show this MSDS to the attending physician.

Do not give any medication without medical supervision.

4.2 Specific First-Aid Actions

Exposure Route First-Aid Measures

Inhalation Move victim to fresh air. If breathing is difficult, give oxygen (by qualified personnel). Seek medical attention immediately.

Skin Contact Remove contaminated clothing. Wash skin thoroughly with soap and running water for at least 15 minutes. Seek medical help if irritation persists.

Eye Contact Hold eyelids apart. Rinse eyes continuously with running water (or physiological saline) for 15-20 minutes. Remove contact lenses (if applicable) and continue rinsing. Seek emergency medical attention immediately.

Ingestion Do NOT induce vomiting. Rinse mouth with water. Give 1-2 glasses of water to dilute (if victim is conscious and able to swallow). Seek medical attention immediately (bring this MSDS).

4.3 Symptoms of Overexposure

Possible symptoms: Eye redness, pain, or blurred vision; skin rash/irritation; nausea, dizziness (if ingested/inhaled in large amounts); long-term exposure may affect reproductive health.

5. Fire-Fighting Measures

5.1 Suitable Extinguishing Media

Use water spray, dry chemical powder, foam, or carbon dioxide (CO₂).

Avoid using straight water jets (may disperse dust and increase fire risk).



5.2 Hazardous Combustion Products

No toxic fumes identified under normal combustion conditions. Possible decomposition products: Boron oxides, sodium oxides (if burned at high temperatures).

5.3 Advice for Firefighters

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing.

Ensure adequate ventilation to prevent dust accumulation (dust may be combustible in high concentrations).

6. Accidental Release Measures

6.1 Personal Precautions

Wear appropriate PPE: SCBA (if dust/vapor is present), nitrile gloves, chemical-resistant clothing, and safety goggles.

Restrict access to the spill area; keep unauthorized personnel away.

6.2 Environmental Precautions

Do NOT allow spillage to enter sewers, rivers, lakes, or soil.

Contain runoff to prevent environmental contamination.

6.3 Spill Clean-Up Methods

Spill Size Clean-Up Procedure

Small Spill Sweep up with a dry, clean broom; collect in a sealable, labeled plastic container. Dispose of as hazardous waste.

Large Spill Construct earthen dikes or use absorbent materials (e.g., vermiculite, sand) to contain the spill. Transfer to a dedicated waste container using explosion-proof equipment. Do NOT flush with water.

7. Handling and Storage

7.1 Safe Handling Precautions

Operate in a well-ventilated area (local exhaust ventilation recommended for dust control).

Avoid generating dust (use gentle handling to prevent inhalation).

Wash hands thoroughly with soap and water after handling; do not eat, drink, or smoke in the work area.

Use grounding equipment to prevent static electricity (if handling in powder



form).

7.2 Safe Storage Conditions

Store in a cool, dry, well-ventilated warehouse (temperature: 15-30°C; relative humidity: $\leq 75\%$).

Keep container tightly closed when not in use.

Store away from incompatible materials (e.g., strong acids, oxidizing agents).

Label clearly with product name, hazard symbols, and expiry date.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits (OELs)

No official OELs established for sodium octaborate tetrahydrate.

Boron (as B): Refer to local OELs (e.g., China MAC: 1 mg/m³; US ACGIH TLV-TWA: 1 mg/m³).



8.2 Engineering Controls

Install local exhaust ventilation to control dust/vapor levels.

Use dust-collection systems to minimize airborne particles.

8.3 Personal Protective Equipment (PPE)

Body Part PPE Requirements

Eyes/Face Chemical splash goggles or face shield (compliant with EN 166 or ANSI Z87.1).

Skin Nitrile gloves (minimum thickness: 0.1 mm; compliant with EN 374) and chemical-resistant apron.

Respiratory Dust mask (N95 or equivalent, compliant with EN 149) for dust exposure; use SCBA for high concentrations.

Body Flame-retardant, chemical-resistant coveralls (compliant with EN 14126).



9. Physical and Chemical Properties

Property	Data	Remarks
Appearance/Physical State	White crystalline powder	
Odor	Odorless	
pH Value (1% aqueous solution)	7.0-9.0	Slightly alkaline
Melting Point	~300°C (decomposes)	Decomposes before melting
Solubility in Water	Soluble	~20 g/L at 20°C
Vapor Pressure	Negligible	At 25°C
Density	~1.7 g/cm ³	Bulk density
Flash Point	Not flammable	No flash point detected

10. Stability and Reactivity

10.1 Chemical Stability

Stable under normal storage and handling conditions (see Section 7.2).

10.2 Incompatible Materials

Strong acids (e.g., hydrochloric acid, sulfuric acid) – may release toxic boron compounds.

Oxidizing agents (e.g., potassium permanganate) – may cause decomposition.

10.3 Hazardous Reactions

No hazardous reactions occur under recommended use conditions.

High temperatures (>300°C) may cause decomposition, releasing boron oxides.

11. Toxicological Information

11.1 Acute Toxicity

Oral LD₅₀ (rat): >2000 mg/kg (low acute toxicity).

Dermal LD₅₀ (rabbit): >5000 mg/kg (non-irritating to intact skin).

Inhalation LC₅₀ (rat): >5 mg/L/4h (low inhalation risk).



11.2 Chronic Toxicity

Reproductive Toxicity: Category 1B (animal studies show potential damage to fertility; no human data available).

Carcinogenicity: Not classified as a carcinogen (IARC, NTP, OSHA: No listing).

11.3 Skin/Eye Irritation

Skin: Non-irritating (4-hour rabbit dermal test).

Eyes: Irritating (rabbit eye test – causes redness and tearing; reversible with rinsing).

12. Ecological Information

12.1 Ecotoxicity

Aquatic Toxicity: Low toxicity to fish (LC₅₀, rainbow trout: >100 mg/L/96h).

Terrestrial Toxicity: No adverse effects on soil microorganisms at recommended doses.

12.2 Environmental Fate

Biodegradability: Not biodegradable (persists in soil for 1-2 years).

Bioaccumulation: Low bioaccumulation potential (log K_{oc}: ~2.0; no biomagnification).

12.3 Environmental Precautions

Do not release into water bodies or soil. Dispose of waste in compliance with local regulations.

13. Disposal Considerations

13.1 Waste Disposal Methods

Product Waste: Classified as hazardous waste (per China GB 18999). Dispose of via licensed hazardous waste treatment facilities.

Contaminated Packaging: Rinse with water (collect rinse water for disposal); dispose of as solid waste (if non-hazardous after rinsing).

Regulatory Compliance: Follow local, provincial, and national laws (e.g., China's "Solid Waste Pollution Prevention and Control Law").



14. Transport Information

14.1 UN/IMDG/IATA Classification

Regulation	UN Number	Hazard Class	Packing Group	Proper Name	Shipping Name
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DOT (US)	N/A	Non-hazardous	N/A	Sodium octaborate tetrahydrate	
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IMDG Code	N/A	Non-hazardous	N/A	Sodium octaborate tetrahydrate	
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IATA	N/A	Non-hazardous	N/A	Sodium octaborate tetrahydrate	
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14.2 Transport Precautions

Avoid moisture during transport; use waterproof packaging.

Do not mix with incompatible materials (e.g., acids, oxidizers) in the same shipment.

15. Regulatory Information

15.1 Chinese Regulations

Complies with:

"Regulations on the Safety Administration of Hazardous Chemicals" (State Council Decree No. 591).

"Specifications for classification and labelling of chemicals – Part 1: General Rules" (GB30000.1-2024)

"Limit of harmful solvents in emulsifiable concentrate pesticides"(HG/T 4576-2013).

15.2 International Regulations

REACH (EU): Not listed in the Candidate List of Substances of Very High Concern (SVHC).

GHS Compliance: Meets GHS Rev. 11(2025) classification requirements.

16. Other Information

Disclaimer: This MSDS is based on current scientific and technical data. The supplier assumes no liability for damages resulting from improper use, storage, or handling of the product. Users must conduct their own risk assessments before use.

Revision History: Version 1.0 (initial release; no previous revisions).

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Note: GHS pictograms referenced in Section 2.2 comply with ISO 7010. For a printable PDF with embedded pictograms, contact the supplier at +86-021-58589995.

