

Safety Data Sheet (MSDS)

(According to GB/T 16483, GB/T 17519, and GHS Standards)

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: 1,4-Dioxane (Dioxane)
- Product Number: DOX-20260314
- Brand: TECHPURE
- CAS-No.: 123-91-1
- Synonyms: 1,4-Dioxane; p-Dioxane

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
- RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI)PILOT FREE TRADE ZONE.
- Telephone : +86-021-50350029
- Fax : +86-021-50350029

1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions

- Identified Uses: Industrial solvent, chemical synthesis intermediate, laboratory reagent.
- Uses Advised Against: Food contact, medicinal purposes, unventilated enclosed space use.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Flammable liquids (Category 2)
- Acute toxicity - Inhalation (Category 3)
- Skin irritation (Category 2)
- Eye irritation (Category 2)
- Carcinogenicity (Category 2B)
- Aquatic toxicity (Category 2)

2.2 GHS Label Elements

- Hazard Pictogram: Flame; Irritant; Carcinogen; Environment
- Signal Word: Warning
- Hazard Statements: H225 (Highly flammable liquid and vapor); H332 (Harmful if inhaled); H315 (Causes skin irritation); H319 (Causes serious eye irritation); H351 (Suspected of causing cancer); H401 (Toxic to aquatic life)



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- Precautionary Statements: P210 (Keep away from heat/sparks); P260 (Do not breathe vapor); P280 (Wear protective gloves/eye/respiratory protection); P304+P340 (If inhaled: Remove to fresh air); P391 (Collect spillage)

2.3 Physical & Chemical Hazards: Flammable vapor; forms explosive mixtures with air (1.9-22.5% v/v); may form peroxides upon storage. 2.4 Health Hazards: Harmful if inhaled; skin/eye irritation; long-term exposure may cause cancer (IARC Group 2B). 2.5 Environmental Hazards: Toxic to aquatic life; moderately biodegradable. 2.6 Other Hazards: Peroxide formation risk without inhibitor.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance
- Active Component: 1,4-Dioxane (CAS 123-91-1)
- Concentration: $\geq 99.5\%$
- Additive: 2,6-Di-tert-butyl-4-methylphenol (BHT) (50-100 ppm, peroxide inhibitor)
- Impurities: $\leq 0.5\%$ (Water, ethylene glycol)

SECTION 4: First Aid Measures

- Inhaled: Move to fresh air; give oxygen if needed; seek medical attention.
- Skin Contact: Rinse with running water for 15 minutes; remove contaminated clothing.
- Eye Contact: Rinse with plenty of water for 15 minutes; consult a doctor.
- Swallowed: Do not induce vomiting; rinse mouth with water; seek medical attention.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Dry powder, CO₂, foam, water spray.
- Unsuitable Extinguishing Media: None.
- Special Hazards: Vapors are heavier than air; toxic fumes (CO) when burned; peroxides may explode at high temperature.
- Advice for Firefighters: Wear self-contained breathing apparatus and full protective clothing.

SECTION 6: Accidental Release Measures

- Personal Precautions: Evacuate non-essential personnel; wear full PPE; eliminate ignition sources.
- Environmental Precautions: Prevent entry into drains/watercourses.
- Clean-Up Methods: Small spills: Absorb with inert materials; large spills: Contain and transfer to sealed containers.

SECTION 7: Handling and Storage

- Handling: Operate in well-ventilated areas with explosion-proof equipment; use anti-static tools.
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers; add BHT if stored beyond 3 months.

- Incompatibilities: Strong oxidizers, acids, halogens.
- Shelf Life: 6 months (unopened).

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Local exhaust ventilation; explosion-proof equipment.
- PPE: Chemical safety goggles/face shield; nitrile rubber gloves; organic vapor respirator.
- Exposure Limits: TWA (8h): 10 ppm (OSHA); IARC Group 2B (Suspected carcinogen).

SECTION 9: Physical and Chemical Properties

- Physical State: Liquid; Color: Colorless; Odor: Faint ether-like
- Melting Point: 11.8°C; Boiling Point: 101°C; Flash Point: 12°C
- Density (20°C): 1.034 g/cm³; Viscosity (20°C): 1.3 mPa·s
- Water Solubility: Fully miscible; Vapor Pressure (25°C): 4.8 kPa
- Explosive Limits: 1.9-22.5% (v/v); Autoignition Temperature: 371°C

SECTION 10: Stability and Reactivity

- Stability: Stable with peroxide inhibitor; forms peroxides upon exposure to air/light.
- Hazardous Reactions: Reacts violently with strong oxidizers/acids.
- Conditions to Avoid: Heat, sparks, open flames, air/light.
- Incompatible Materials: Oxidizing agents, strong acids, halogens.
- Hazardous Decomposition Products: CO, CO₂ (when burned).

SECTION 11: Toxicological Information

- Acute Toxicity: Oral (Rat, LD₅₀): 4200 mg/kg; Inhalation (Rat, LC₅₀): 20000 ppm (4h)
- Skin/Eye Irritation: Mild skin irritation; serious eye irritation.
- Chronic Toxicity: Classified as suspected carcinogen; long-term exposure may cause liver/kidney damage.
- Reproductive Toxicity: No known reproductive toxicity.

SECTION 12: Ecological Information

- Aquatic Toxicity: Fish (Rainbow Trout, LC₅₀): 1000 mg/L (96h); Daphnia (EC₅₀): 1500 mg/L (48h)
- Biodegradability: Moderately biodegradable (BOD₅/COD = 0.3-0.4)
- Bioaccumulative Potential: Low (log K_{oc} = 0.4).

SECTION 13: Disposal Considerations

- Product Waste: Dispose as hazardous waste; incinerate in approved facilities.
- Packaging Waste: Rinse with solvent; dispose as hazardous waste or recycle.

SECTION 14: Transport Information

- UN Number: 1165
- UN Proper Shipping Name: DIOXANE (1,4-DIOXANE)
- Transport Hazard Class: 3; Packaging Group: II



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- Marine Pollutant: No
- Transport Precautions: Avoid direct sunlight, high temperature, and collision.

SECTION 15: Regulatory Information

- National Regulations: Hazardous Chemical Safety Management Regulation; Environmental Protection Law.
- International Regulations: GHS (Rev. 9); REACH (EU, listed); TSCA (US, listed); IMDG Code.

SECTION 16: Other Information

- Revision Date: 14 MAR 2026
- Disclaimer: This MSDS is based on current data; supplier not liable for improper use.

