Safety Data Sheet · OSHA HCS 2024

Sodium Hydroxide 50% Solution ACS Grade

ACS Grade · 50% w/w

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-19	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Sodium Hydroxide 50% Solution ACS Grade
Grade	ACS Grade
Concentration	50% w/w
CAS Number	1310-73-2
Chemical Formula	NaOH
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Synonyms	Caustic soda solution; lye; sodium hydrate
Recommended Use	Laboratory and analytical reagent (ACS grade); pH adjustment and neutralization; cleaning and degreasing.
Restrictions on Use	For industrial and professional use. Always add caustic slowly to water, never water to caustic.

2 Hazard Identification



Corrosive

Classification	Corrosive to metals, Category 1 Skin corrosion/irritation, Category 1 Serious eye damage/eye irritation, Category 1
Signal Word	**Danger**
Hazard Statements	H290 May be corrosive to metals H314 Causes severe skin burns and eye damage

Precautionary Statements

P234 Keep only in original packaging.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P280 Wear protective gloves, protective clothing, and eye/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P321 Specific treatment (see first-aid information on this label).

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

P405 Store locked up.

P406 Store in a corrosion resistant container with a resistant inner liner.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Sodium hydroxide	1310-73-2	NaOH	50% (w/w)
Water	7732-18-5	H2O	Balance (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion

Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms and Effects

Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.

Immediate Medical Attention and Special Treatment

Immediate medical attention is required after eye or skin contact or ingestion; tissue damage may continue after exposure ends.

5 Fire-Fighting Measures

Suitable Extinguishing Media

Dry chemical, CO2, water spray. Use water spray to cool containers.

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical

Fire may release corrosive and toxic gases. Containers may rupture when heated.

Protective Equipment

Wear self-contained breathing apparatus and full protective clothing.

Hazardous Combustion Products

Sodium oxide and corrosive vapors on strong heating. Contact with metals releases flammable hydrogen gas.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Do not touch spilled material without protective equipment. Neutralize residue only with a method suitable for the material, then collect.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area. Use corrosion-resistant containers. Keep away from incompatible materials (see Section 10). Keep containers tightly closed.
Specific Storage Precautions	Store above 15 °C (59 °F): 50% caustic crystallizes at about 12 °C (54 °F). Use steel, polyethylene or polypropylene containers, never aluminum, zinc, tin or galvanized metal. Keep away from acids.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
OSHA PEL	2 mg/m^3 TWA
ACGIH TLV	2 mg/m^3 Ceiling
NIOSH REL	2 mg/m^3 ceiling
IDLH	10 mg/m^3

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.
Respiratory Protection	Where mist, spray or dust is generated (e.g., spraying, atomization, pressure washing), use a NIOSH-approved half-face air-purifying respirator with combination acid gas / P100 cartridges. Ensure local exhaust ventilation.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Clear, colorless liquid
Odor	Odorless
Odor Threshold	No data available

pH	13–14
Melting Point / Freezing Point	10 to 15 °C (50 to 59 °F), freezing point (aqueous solution)
Boiling Point	142 to 145 °C (288 to 293 °F) (aqueous solution)
Flash Point	Not applicable
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	No data available
Vapor Pressure	1.2 hPa (0.9 mmHg) at 20 °C; 6.3 mmHg at 40 °C
Vapor Density	No data available
Relative Density	1.520 - 1.545 at 20 °C
Solubility	Completely miscible with water (strongly exothermic)
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	Not applicable
Form	Liquid
Density	1.53 g/cm^3 (50% w/w aqueous solution, 20 °C)

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	May be corrosive to metals.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Temperatures below about 15 °C (crystallization), contact with incompatible materials, and adding water to the concentrate (violent heat release).
Incompatible Materials	Acids (violent reaction); aluminum, zinc, tin, magnesium and their alloys, including galvanized metal (releases flammable hydrogen); organic halogen compounds; nitro compounds; flammable liquids; strong oxidizers.
Hazardous Decomposition Products	Sodium oxide and corrosive vapors on strong heating. Contact with metals releases flammable hydrogen gas.

11 Toxicological Information

See below for route-specific acute toxicity data.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.
Delayed and Chronic Effects	No delayed or chronic effects identified beyond the classification in Section 2.

Route	Value

Route	Value
LD50 Dermal (rabbit)	1350 mg/kg

Carcinogen Classification

Agency	Status
IARC	Not listed as carcinogen.
NTP	Not listed as carcinogen.
OSHA	Not listed as carcinogen.

12 Ecological Information

Ecotoxicity	Daphnia EC50: 40.38 mg/L (48 h, Ceriodaphnia dubia (<24 h neonate) — pH-driven; 95% CI 34.59–47.13 mg/L); Fish LC50: 125 mg/L (96 h, Gambusia affinis (mosquitofish) — pH-driven)
Persistence & Degradability	Not applicable (inorganic; dissociates to Na^+ and OH^-)
Bioaccumulative Potential	Not Available
Mobility in Soil	Highly water-soluble

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

If discarded, this material may be a corrosive hazardous waste (EPA RCRA D002, 40 CFR 261.22): aqueous with pH ≤ 2 or ≥ 12.5, or a liquid that corrodes steel at more than 6.35 mm per year. The waste generator must make the final hazardous-waste determination.

14 Transport Information

US DOT (49 CFR)

UN Number	UN1824
Proper Shipping Name	Sodium hydroxide solution
Hazard Class	8
Packing Group	II
Additional US DOT Requirements	A package containing 1,000 lb or more of sodium hydroxide (about 2,000 lb or 160 gal of 50% solution, for example a 275-gal tote) is a hazardous substance: UN1824, Sodium hydroxide solution, 8, II, RQ (Sodium hydroxide). Not a marine pollutant.

IMDG / IATA classifications may differ from US DOT. Verify current regulations before international shipment.

15 Regulatory Information

Inventory / List	Status
California Proposition 65	Not listed

Inventory / List	Status
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Not listed
CERCLA Reportable Quantity (RQ)	Sodium hydroxide (CAS 1310-73-2) 1,000 lb (454 kg), about 2,000 lb of 50% solution.

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-19
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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