



Safety Data Sheet  
According to the (US) Hazard Communication Standard (29 CFR 1910.1200)

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| <b>Product Name</b>        | Sodium Hydroxide Solution, 50% (w/w)                                   |
| <b>NCL Catalog Number</b>  | S-41X                                                                  |
| <b>Product Description</b> | Laboratory chemical                                                    |
| <b>Supplier</b>            |                                                                        |
| NCL of Wisconsin, Inc.     | <b>Telephone:</b> 1-800-648-7836 <b>Fax:</b> 715-449-2454              |
| P.O. Box 8                 | <b>Emergency Contact:</b> 1-800-424-9300 (Chemtrec)                    |
| Biramwood, WI 54414        | <b>Email:</b> <a href="mailto:nclabs@nclabs.com">nclabs@nclabs.com</a> |

**SECTION 2: HAZARDS IDENTIFICATION**

**GHS Classification**

|                     |             |
|---------------------|-------------|
| Corrosive to Metals | Category 1  |
| Skin Corrosion      | Category 1B |
| Serious Eye Damage  | Category 1  |
| Aquatic Acute       | Category 3  |



**Signal Word** Danger

**Hazard Statements**

|      |                                          |
|------|------------------------------------------|
| H290 | May be corrosive to metals.              |
| H314 | Causes severe skin burns and eye damage. |
| H402 | Harmful to aquatic life.                 |

**Precautionary Statements**

|                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P234           | Keep only in original packaging.                                                                                                 |
| P260           | Do not breathe mist/vapors/spray.                                                                                                |
| P264           | Wash exposed skin thoroughly after handling.                                                                                     |
| P273           | Avoid release to the environment.                                                                                                |
| P280           | Wear protective gloves/protective clothing/eye protection/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/shower.                              |
| P363           | Wash contaminated clothing before reuse.                                                                                         |
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                                                       |
| P310           | Immediately call a POISON CENTER or doctor.                                                                                      |
| 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.                                                                                      |
| 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/container to comply with local, state and federal regulations.                                               |

**Other Hazards Not Contributing to the Classification** None under normal conditions.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Identity** Not applicable  
**Common Name** Not applicable

**Mixture**

| Name             | CAS #     | Approximate % |
|------------------|-----------|---------------|
| Water            | 7732-18-5 | 50            |
| Sodium Hydroxide | 1310-73-2 | 50            |

**SECTION 4: FIRST AID MEASURES**

**Description of First Aid Measures**

**General FirstAid Measures** Never give anything by mouth to an unconscious person. Seek medical advice if you feel unwell.

**If Inhaled** Remove person to fresh air and keep comfortable for breathing. Allow victim to rest. Immediately call a POISON CENTER or doctor.

**In Case of Skin Contact** Remove all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor.

**In Case of Eye Contact** Rinse carefully with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

**If Swallowed** Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

**Most Important Symptoms/Effects Acute and Delayed**

**After Inhalation** Coughing, irritation of the respiratory tract, and irritation of the nasal mucous membranes.

**After Skin Contact** Caustic burns/corrosion of the skin.

**After Eye Contact** Causes serious eye irritation.

**After Ingestion** Nausea and vomiting. Abdominal pain. Bleeding of the gastrointestinal tract. Burns to the gastric/intestinal mucosa. Possible esophageal perforation.

**Indication of Immediate Medical Attention and Special Treatment Needed**

Seek medical attention if exposed.

**SECTION 5: FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media** Foam. Dry powder. Sand. Carbon dioxide. Water spray.

**Unsuitable Extinguishing Media** Do not use high pressure water stream.

**Special Hazards Arising from the Chemical**

Thermal decomposition generates corrosive vapors. Reacts with some metals to release highly flammable gases/vapors.

**Special Protective Actions for Fire-Fighters**

Wear self-contained breathing apparatus and protective clothing. Keep exposed containers cool with water spray.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**

**Personal Precautions** Use personal protective equipment (see section 8). Evacuate area of non-essential personnel. Eliminate ignition sources. Ventilate area.

**Environmental Precautions** Prevent entry to surface and ground waters.

**Methods and Materials for Containment and Cleaning Up** Clean up spill with inert absorbent material. Collect spillage. Store away from other materials. Ensure compliance with federal, state and local regulations.

**SECTION 7: HANDLING AND STORAGE**

**Precautions for Safe Handling**

Avoid contact with eyes and skin. Avoid breathing vapors. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

**Conditions for Safe Storage  
Including any Incompatibilities**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Store away from sunlight, which can contribute to instability. Store away from strong acids and metals. Do not store in corrodible metal.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control Parameters**

| <b>Sodium Hydroxide (1310-73-2)</b> |                                     |                     |
|-------------------------------------|-------------------------------------|---------------------|
| USA ACGIH                           | ACGIH Ceiling (mg/m <sup>3</sup> )  | 2 mg/m <sup>3</sup> |
| USA OSHA                            | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 2 mg/m <sup>3</sup> |

**Appropriate Engineering Controls**

Material should be handled or transferred in a fume hood or with equivalent ventilation. Maintain eye-wash fountain and quick-drench facilities in work area.

**Individual Protection Measures**

Avoid all unnecessary exposure.

**Eye/Face Protection**

Use chemical safety goggles and /or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material.

**Skin Protection**

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

**Respiratory Protection**

Wear appropriate mask.

**Other Information**

Do not eat, drink, or smoke when using this product.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

|                                                  |                  |
|--------------------------------------------------|------------------|
| <b>Physical State</b>                            | Liquid           |
| <b>Color</b>                                     | Colorless        |
| <b>Molecular Mass</b>                            | 40.00 g/mol      |
| <b>Odor</b>                                      | Odorless         |
| <b>Odor Threshold</b>                            | Not determined   |
| <b>pH</b>                                        | ≥ 14             |
| <b>Melting Point/Freezing Point</b>              | Not determined   |
| <b>Initial Boiling Point and Boiling Range</b>   | Not determined   |
| <b>Flash Point</b>                               | Not determined   |
| <b>Evaporation Rate</b>                          | Not determined   |
| <b>Flammability (Solid, Gas)</b>                 | Not determined   |
| <b>Upper/Lower Flammability/Explosive Limits</b> | Not determined   |
| <b>Vapor Pressure</b>                            | Not determined   |
| <b>Vapor Density</b>                             | Not determined   |
| <b>Relative Density</b>                          | 1.5              |
| <b>Solubility</b>                                | Soluble in water |
| <b>Partition Coefficient: n-octanol/water</b>    | Not determined   |
| <b>Auto-Ignition Temperature</b>                 | Not determined   |
| <b>Decomposition Temperature</b>                 | Not determined   |
| <b>Viscosity</b>                                 | Not determined   |

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity**

Contact with metals such as aluminum, tin, and zinc causes formation of flammable hydrogen gas.

**Chemical Stability**

Stable under ordinary conditions of use and storage.

|                                           |                                                                                                                                                                                                                                                                 |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Possibility of Hazardous Reactions</b> | No data available.                                                                                                                                                                                                                                              |
| <b>Conditions to Avoid</b>                | Extremely high or low temperatures. Heat and sunlight can contribute to instability.                                                                                                                                                                            |
| <b>Incompatible Materials</b>             | Aluminum, tin and zinc. Contact with acids, flammable liquids, and organic halogen compounds, especially trichloroethylene, may cause fire or explosion. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. |
| <b>Hazardous Decomposition Products</b>   | When heated to decomposition, can emit toxic gases and carbon dioxide.                                                                                                                                                                                          |

**SECTION 11: TOXICOLOGICAL INFORMATION**

|                                     |                |
|-------------------------------------|----------------|
| <b>Acute Toxicity</b>               | Not classified |
| <b>Sodium Hydroxide (1310-73-2)</b> |                |
| <b>LD50 dermal rabbit</b>           | 1350 mg/kg     |
| <b>Water (7732-18-5)</b>            |                |
| <b>LD50 oral rat</b>                | ≥90000 mg/kg   |

|                                                            |                                                                                                                                             |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Skin Corrosion/Irritation</b>                           | Causes severe skin burns.                                                                                                                   |
| <b>Serious Eye Damage/Irritation</b>                       | Causes serious eye damage.                                                                                                                  |
| <b>Respiratory or Skin Sensitization</b>                   | Not classified                                                                                                                              |
| <b>Germ Cell Mutagenicity</b>                              | Not classified                                                                                                                              |
| <b>Carcinogenicity</b>                                     | Not classified                                                                                                                              |
| <b>Reproductive Toxicity</b>                               | Not classified                                                                                                                              |
| <b>Specific Target Organ Toxicity (Single Exposure)</b>    | Not classified                                                                                                                              |
| <b>Specific Target Organ Toxicity (Repeated Exposure)</b>  | Not classified                                                                                                                              |
| <b>Aspiration Hazard</b>                                   | Not classified                                                                                                                              |
| <b>Potential Adverse Human Health Effects and Symptoms</b> | No data available.                                                                                                                          |
| <b>Symptoms/Injuries After Inhalation</b>                  | Coughing. Irritation of the respiratory tract and the nasal mucous membranes.                                                               |
| <b>Symptoms/Injuries After Skin Contact</b>                | Caustic burns/corrosion of the skin.                                                                                                        |
| <b>Symptoms/Injuries After Eye Contact</b>                 | Causes serious eye damage.                                                                                                                  |
| <b>Symptoms/Injuries After Ingestion</b>                   | Abdominal pain. Bleeding of the gastrointestinal tract. Burns to the gastric/intestinal mucosa. Nausea and possible esophageal perforation. |
| <b>Chronic Symptoms</b>                                    | Not available                                                                                                                               |
| <b>Other Information</b>                                   | Not available                                                                                                                               |

**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity** Harmful to aquatic life.

|                                           |                                                        |
|-------------------------------------------|--------------------------------------------------------|
| <b>Sodium Hydroxide 50% (1310-73-2)</b>   |                                                        |
| LC50 fish 1                               | 45.4 mg/l (96 h; Salmo gairdneri, Oncorhynchus mykiss) |
| LC50 other aquatic organisms 1            | 100 mg/l (48 h; Daphnia magna)                         |
| LC50 fish 2                               | 189 mg/l (48 H; Leuciscus idus)                        |
| TLM fish 1                                | 125 ppm (96 h; Gambusia affinis)                       |
| TLM fish 2                                | 99 mg/l (48 h; Lepomis macrochirus)                    |
| Threshold limit other aquatic organisms 2 | 100 mg/l (48 h; Daphnia magna)                         |
| <b>Sodium Hydroxide (1310-73-2)</b>       |                                                        |
| LC50 fish 1                               | 45.4 mg/l (96 h; Salmo gairdneri, Oncorhynchus mykiss) |
| EC50 Daphnia 1                            | 40.4 mg/l (48 h; Ceriodaphnia sp.)                     |
| LC50 fish 2                               | 189 mg/l (48 h; Leuciscus idus)                        |
| TLM fish 1                                | 99 mg/l (48 h; Lepomis macrochirus)                    |
| TLM fish 2                                | 125 ppm (96 h; Gambusia affinis)                       |

**Persistence and Degradability** Not applicable

|                                  |                                                    |
|----------------------------------|----------------------------------------------------|
| <b>Bioaccumulative Potential</b> | Not applicable<br>Log Pow: -3.88 (Estimated value) |
| <b>Mobility in Soil</b>          | Not applicable                                     |
| <b>Other Adverse Effects</b>     | Not applicable                                     |

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Methods of Disposal**

|                                 |                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------|
| <b>Disposal Recommendations</b> | Dispose of contents/containers in accordance with federal, state and local regulations. |
| <b>Other Information</b>        | Avoid release to the surrounding environment.                                           |

**SECTION 14: TRANSPORT INFORMATION**

|                                   |                           |
|-----------------------------------|---------------------------|
| <b>UN Number</b>                  | 1824                      |
| <b>UN Shipping Name</b>           | Sodium Hydroxide Solution |
| <b>Transport Hazard Class(es)</b> | 8                         |
| <b>Packing Group</b>              | II                        |
| <b>Environmental Hazards</b>      | Harmful to aquatic life.  |
| <b>Transport in Bulk</b>          | Not applicable            |
| <b>Other Precautions</b>          | Not applicable            |

**SECTION 15: REGULATORY INFORMATION**

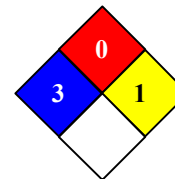
| <b>Sodium Hydroxide, 50%</b>                                              |                                 |
|---------------------------------------------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes                                       | Immediate (acute) health hazard |
| <b>Sodium Hydroxide (1310-73-2)</b>                                       |                                 |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |                                 |
| RQ (Reportable Quantity)                                                  | 1000 lb                         |
| SARA Section 311/312 Hazard Classes                                       | Immediate (acute) health hazard |
| <b>Water (7732-18-5)</b>                                                  |                                 |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |                                 |

**SECTION 16: OTHER INFORMATION**

Revision Date: 02/24/2015

**NFPA Hazards**

|                               |                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------|
| <b>Health Hazard</b>          | 3: Short exposure could cause serious temporary or residual injury even.            |
| <b>Fire Hazard</b>            | 0: Materials that will not burn.                                                    |
| <b>Reactivity/Instability</b> | 1: Normally stable, but can become unstable at elevated temperatures and pressures. |



**HMIS III Rating**

|                            |                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Health</b>              | 3: Major injury likely unless prompt action is taken and medical treatment is given.                                                                                                                              |
| <b>Flammability</b>        | 0: Materials that will not burn.                                                                                                                                                                                  |
| <b>Physical Hazard</b>     | 1: Materials that are normally stable, but can become unstable at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors. |
| <b>Personal Protection</b> | H                                                                                                                                                                                                                 |

| S-41X               |   |
|---------------------|---|
| Health              | 3 |
| Flammability        | 0 |
| Physical Hazard     | 1 |
| Personal Protection | H |

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, NCL of Wisconsin, Inc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for their conditions of use. Accordingly, NCL of Wisconsin, Inc. will not be responsible for damages of any kind resulting from the use of or reliance upon such information.

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**END OF SAFETY DATA SHEET**