Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **Sodium Hydroxide Solution - 50%**

Synonyms • Solutions of Caustic; Solutions of Caustic Soda; Solutions of Lye; Solutions of Sodium hydrate

CAS Number • 1310-73-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) • Neutralizing agent, industrial cleaning, pulp and bleaching, soap manufacturing

1.3 Details of the supplier of the safety data sheet

Manufacturer • Westlake Vinyls Company, LP
P.O. Box 228
36045 Highway 30 Geismar, LA 70734
United States
www.westlake.com

Telephone (General) • 225-673-0651

1.4 Emergency telephone number

Manufacturer • (800) 424-9300 - Chemtrec - Transportation emergency

Section 2: Hazards Identification

HMIS Rating:	Health: 3	Fire: 0	Reactivity: 1	PPE: X

EU/EEC
According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Skin Corrosion 1A - H314

DSD/DPD • Corrosive (C)
R35

2.2 Label Elements

CLP

DANGER

Hazard statements
- H314 - Causes severe skin burns and eye damage.

Precautionary statements

Prevention
- P260 - Do not breathe mist/vapours/spray.
  P264 - Wash thoroughly after handling.
  P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response
- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P310 - Immediately call a POISON CENTER or doctor/physician.
  P363 - Wash contaminated clothing before reuse.
  P321 - Specific treatment, see supplemental first aid information.
  P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage/Disposal
- P405 - Store locked up.
  P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases
- R35 - Causes severe burns.

Safety phrases
- S36 - Wear suitable protective clothing.
  S37 - Wear suitable gloves.
  S39 - Wear eye/face protection.
  S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other Hazards

CLP
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD
- This product is considered dangerous according to the European Directive 67/548/EEC.

United States (US)
According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012
- Skin Corrosion 1B - H314
  Serious Eye Damage 1 - H318

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements
- Causes severe skin burns and eye damage. - H314
  Causes serious eye damage - H318

Precautionary statements

Prevention
- Do not breathe mist/vapours/spray. - P260
  Wash thoroughly after handling. - P264
  Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353
  Immediately call a POISON CENTER or doctor/physician. - P310
  Wash contaminated clothing before reuse. - P363
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338
  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. - P301+P330+P331

Storage/Disposal
- Store locked up. - P405
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

2.3 Other hazards

OSHA HCS 2012
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada
According to WHMIS

2.1 Classification of the substance or mixture

WHMIS
- Corrosive - E

2.2 Label elements

WHMIS

- Corrosive – E

2.3 Other hazards

WHMIS • In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

Composition				
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**
Sodium hydroxide	**CAS:**1310-73-2 **EC Number:**215-185-5 **EU Index:**011-002-00-6	50%	NDA	**EU DSD/DPD:** Annex VI, Table 3.2: C R35 **EU CLP:** Annex VI, Table 3.1: Skin Corr. 1A, H314 **OSHA HCS 2012:** Skin Corr. 1B; Eye Dam. 1

3.2 Mixtures

- Material does not meet the criteria of a mixture in accordance with Regulation (EC) No 1272/2008.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation • Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Move victim to fresh air.

Skin • For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing and shoes.

Eye • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.

Ingestion • If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media • In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- In contact with moisture or water sufficient heat may be generated to ignite adjacent combustible materials.
  Sodium hydroxide solutions can react violently when in contact with chlorinated hydrocarbons and metals such as aluminum, zinc or materials galvanized with zinc with resultant generation of hydrogen.

Hazardous Combustion Products
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).
  SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

Emergency Procedures
- Keep unauthorized personnel away. Stay upwind. Do not get water inside container.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Absorb with earth, sand or other non-combustible material.
  Transfer the spilled material to caustic resistant containers labeled: CORROSIVE
  With careful handling, dilute acid, preferable acetic acid, may be used to neutralize final traces of caustic.
  Flush the cleaned area with water.
  LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling
- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage
- Keep container tightly closed. Store in a cool/low-temperature, well-ventilated place. Store separate from the normal work area and away from materials that react with sodium hydroxide. Use corrosion resistant structural materials and lighting and ventilation systems in the storage area.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Sodium hydroxide (1310-73-2)	TWAs	Not established	Not established	2 mg/m3 TWA
	Ceilings	2 mg/m3 Ceiling	2 mg/m3 Ceiling	Not established

8.2 Exposure controls

Engineering Measures/Controls
- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory
- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face
- Wear eye/face protection - Chemical goggles, - Full face shield.

Skin/Body
- Wear appropriate gloves. Wear protective clothing

Environmental Exposure Controls
- Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless to gray, syrupy liquid with a mild, pungent odor.
Color	Colorless to gray.	Odor	Mild, slightly pungent.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	148 C(298.4 F)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	14
Specific Gravity/Relative Density	1.49 Water=1 @ 65.6 C(150.08 F)	Water Solubility	Soluble
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	19 mmHg (torr) @ 65.5 F(18.6111 C)	Vapor Density	Data lacking
Evaporation Rate	Data lacking	Volatiles (Vol.)	50 %
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Not relevant.		

Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Incompatible materials. Excess heat.

10.5 Incompatible materials

- This product reacts with water generating heat. This product reacts violently or explosively with chlorinated hydrocarbons. It attacks leather and wool resulting in destruction of those materials and possible chemical exposure to the individual. Caustic solutions can generate hydrogen gas on contact with aluminum, zinc or materials galvanized with zinc.

10.6 Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Sodium Hydroxide Solution - 50% 1310-73-2								
Test Type	**Dosage**	**Route**	**Species**	**Duration**	**Results**	**Test Class**	**Target Organs**	**Comments**
Irritation	= 1 %	Eye	Rabbit	NDA	NDA	Severe irritation, reversible	NDA	NDA
Irritation	= 500 mg	Skin	Rabbit	24 Hour(s)	NDA	Severe irritation, reversible	NDA	NDA

GHS Properties	Classification
Acute toxicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Aspiration Hazard	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Carcinogenicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Germ Cell Mutagenicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Skin corrosion/Irritation	**EU/CLP**•Skin Corrosion 1A **OSHA HCS 2012**•Skin Corrosion 1B
Skin sensitization	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
STOT-RE	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met

STOT-SE	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Toxicity for Reproduction	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Respiratory sensitization	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Serious eye damage/Irritation	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Serious Eye Damage 1

Route(s) of entry/exposure
- Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

Acute (Immediate)
- May cause corrosive burns - irreversible damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)
- Causes severe skin burns and eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)
- Causes serious eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)
- May cause irreversible damage to mucous membranes.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal distrubances.

Section 12 - Ecological Information

12.1 Toxicity

Sodium Hydroxide Solution - 50%			1310-73-2		
Dosage	**Species**	**Duration**	**Results**	**Exposure Conditions**	**Comments**
144 to 276 mg/L	**Fish:** Poecilia reticulata (Guppy)	96 Hour(s)	LC50	NDA	NDA
= 125 mg/L	**Fish:** Gambusia affinis (Western mosquito fish)	96 Hour(s)	LC50	NDA	NDA

12.2 Persistence and degradability
- Material data lacking.

12.3 Bioaccumulative potential
- Material data lacking.

12.4 Mobility in Soil
- Material data lacking.

12.5 Results of PBT and vPvB assessment
- PBT and vPvB assessment has not been carried out.

12.6 Other adverse effects
- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1824	Sodium hydroxide solution	8	II	NDA
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	8	II	NDA
IMO/IMDG	UN1824	SODIUM HYDROXIDE SOLUTION	8	II	NDA
IATA/ICAO	UN1824	Sodium hydroxide solution	8	II	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute

Inventory						
Component	**CAS**	**Australia AICS**	**Canada DSL**	**Canada NDSL**	**China**	**EU EINECS**
Sodium hydroxide	1310-73-2	Yes	Yes	No	Yes	Yes

Inventory (Con't.)						
Component	**CAS**	**EU ELNICS**	**Japan ENCS**	**Korea KECL**	**New Zealand**	**Philippines PICCS**
Sodium hydroxide	1310-73-2	No	Yes	Yes	Yes	Yes

Inventory (Con't.)		
Component	**CAS**	**TSCA**
Sodium hydroxide	1310-73-2	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)

Canada - WHMIS - Ingredient Disclosure List

•Sodium hydroxide	1310-73-2	1 %

Environment

Canada - CEPA - Priority Substances List

•Sodium hydroxide	1310-73-2	Not Listed

Europe

Other

EU - Hazardous Substances Restricted or Prohibited in Electrical Equipment (2011/65/EU) (RoHS)

•Sodium hydroxide	1310-73-2	Not Listed

EU - Inventory of Cosmetic Ingredients Directive (INCI) (76/768/EEC) - Other Ingredients

•Sodium hydroxide	1310-73-2	Buffering; Denaturant

Japan

Environment

Japan - Pollutant Release Transfer Register (PRTR) - Class 1 Substances

•Sodium hydroxide	1310-73-2	Not Listed

Japan - Pollutant Release Transfer Register (PRTR) - Class 2 Substances

•Sodium hydroxide	1310-73-2	Not Listed

Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)

•Sodium hydroxide	1310-73-2	Not Listed

Other Agency Information

Other

CONEG - Model Toxics in Packaging Legislation

•Sodium hydroxide	1310-73-2	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Sodium hydroxide	1310-73-2	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CAA (Clean Air Act) - Class I Ozone Depletors

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CAA (Clean Air Act) - Class II Ozone Depletors

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification

•Sodium hydroxide	1310-73-2	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

•Sodium hydroxide	1310-73-2	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
•Sodium hydroxide	1310-73-2	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
•Sodium hydroxide	1310-73-2	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
•Sodium hydroxide	1310-73-2	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Sodium hydroxide	1310-73-2	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date	• 05/May/2015
Preparation Date	• 05/May/2015
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Key to abbreviations

NDA = No data available