



## Material Safety Data Sheet

**MSDS/SDS Number:** 00000123MSDS  
**Latest Revision Date:** June 15, 2009  
**Revision:** B

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Strong Antibody Stripping Solution (10x)  
**Catalogue Number(s):** 2504; Component of 2500  
**Chemical Name:** Aqueous Solution of Sodium Hydroxide and Sodium Azide.  
**Synonyms:** 3.5N Sodium Hydroxide / 0.5% Sodium Azide Solution.  
**Intended Product Use:** Biological Research Reagent

**Manufacturer/Distributor:** Millipore Corporation (Corporate Headquarters)      Millipore S.A.S. (European Headquarters)  
**Postal Address:** 290 Concord Road Billerica MA, USA      Boite Postale 116 67124 Molsheim Cedex, France  
**Telephone Number:** +1-978-715-1335      +33(0)3 90 46 90 00  
**Hours of Operation:** 9:00 am to 4:00 pm ET (GMT -3)      9:00 am to 4:00 pm EU CT (GMT +1)  
**Email:** msds@millipore.com

**CHEMTREC Emergency Telephone Number:** International +1-703-527-3887 (collect)  
North America 1-800-424-9300 (toll free)

### SECTION 2 HAZARDS IDENTIFICATION

**GHS Hazard Class:**



Acute Toxicity: Category 2



Skin Corrosion: Category 1

Serious Eye Damage/Eye Irritation: Category 1

Acute Toxicity: Category 5 (gases, vapors, dusts, mists)

Effects on the Aquatic Environment: Category 3

**Signal Word and Hazard Statement:**

Danger: Fatal if swallowed (oral) (H300)

Danger: Causes severe skin burns and eye damage (H314)

Danger: Causes serious eye damage (H318)

Warning: May be harmful if inhaled (gases, vapors, dusts, mists)

Harmful to Aquatic Life

EU Hazard Symbol  
Pictogram:

T: (R25, R32)



C: (R35, R41)



N: (R52)

### SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Identification of Dangerous Components:**

This product contains the substances listed below, which are defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters*†	R Phrases** †
Sodium Hydroxide	215-185-5	1310-73-2	< 14 %	C	R35 R28
Sodium Azide	247-852-1	26628-22-8	< 1 %	T+ N	R32 R50/53

**Identification of Components Not Classified as Dangerous:**

This product contains the substances listed below, which are not defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Non-Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters *	R Phrases**
Water	231-791-2	7732-18-5	< 85 %	N/A	N/A

\* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **Xi** = Irritant, **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

\*\* The full text of each R phrase is listed in Section 2.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

### SECTION 4 FIRST AID MEASURES

**Contact with Eyes:****Treatment Measures:**

If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately.

**Symptoms of Exposure:**

Possible eye irritation

- Ingestion:** Seek medical attention immediately. Never give an unconscious person anything by mouth. Possible gastrointestinal irritation causing nausea and vomiting.
- Inhalation:** If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention. Possible respiratory tract and mucous membrane irritation.
- Skin Contact:** If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately. Possible skin irritation.

## SECTION 5 FIRE FIGHTING MEASURES

- Suitable Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.
- Special Exposure Hazards:** Hazardous decomposition products that form when the substance or mixture burns
- Special Protective Equipment for Firefighters:** This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact. (See Section 8)
- Small Spills:** Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.
- Large Spills:** In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.
- Environmental Precautions:** Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

## SECTION 7 HANDLING AND STORAGE

- Handling:** Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with

adequate ventilation. See product technical data sheet for details.

**Storage:** See product technical data sheet for details.

**Specific use:** See product technical data sheet for details.

## SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

<b>Exposure Limit Values:</b>	OSHA PEL	NIOSH REL	ACGIH TLV	Other
Sodium Hydroxide:	2 mg/m <sup>3</sup> TWA	2 mg/m <sup>3</sup> Ceiling	2 mg/m <sup>3</sup> Ceiling	See Below
Australia:	TWA 2 mg/m <sup>3</sup> , JAN1993			
Denmark:	Ceiling concentration 2 mg/m <sup>3</sup> , OCT 2002			
Finland:	TWA 2 mg/m <sup>3</sup> , JAN1999			
France:	VME 2 mg/m <sup>3</sup> , FEB2006			
Japan:	OEL- continuous 2 mg/m <sup>3</sup> , APR2007			
The Netherlands:	MAC-TGG 2 mg/m <sup>3</sup> , 2003			
Switzerland:	MAK- week 2 mg/m <sup>3</sup> ,KZG- week 2 mg/m <sup>3</sup> , DEC2006			
United Kingdom:	STEL 2 mg/m <sup>3</sup> , 2005			
Sodium Azide:	0.3 mg/m <sup>3</sup> as Sodium Azide (Ceiling) 0.1 ppm as Hydrazoic Acid (Ceiling)	0.1 ppm skin as HN <sub>3</sub> , 0.3 mg/m <sup>3</sup> skin as NaN <sub>3</sub> (Ceiling)	0.11 ppm as HN <sub>3</sub> , 0.29 mg/m <sup>3</sup> as Na N <sub>3</sub> (Ceilings), A4 Not classifiable as a human carcinogen.	See Below
Australia:	TWA 0.1 ppm (0.3 mg/m <sup>3</sup> ), JAN1993			
Belgium:	STEL 0.11 ppm (0.3 mg/m <sup>3</sup> ), JAN1993			
Finland:	TWA 0.1 ppm (0.3 mg/m <sup>3</sup> ), STEL 0.3 ppm (0.9 mg/m <sup>3</sup> ), JAN1999			
France:	VME 0.1 mg/m <sup>3</sup> , VLE 0.3 mg/m <sup>3</sup> , Skin, FEB2006			
Germany:	MAK 0.2 mg/m <sup>3</sup> (inhalable), 2005			
United Kingdom:	TWA 0.1 mg/m <sup>3</sup> ; STEL 0.3 mg/m <sup>3</sup> (skin), 2005			
	<b>Normal Handling Conditions</b>		<b>Emergency Response Conditions</b>	
<b>Engineering Controls:</b>	General room ventilation is adequate for the use of this product.		Provide negative pressure ventilation.	
<b>Respiratory Protection</b>	Use appropriate respiratory protection.		Use appropriate respiratory protection.	
<b>Eye Protection:</b>	Safety glasses with side shields.		Chemical splash goggles or other face protection as appropriate.	
<b>Skin Protection:</b>	Laboratory coat, adequate chemical-resistant gloves.		Chemically resistant boots, clothes, and impermeable gloves as appropriate.	
<b>Environmental Exposure Controls:</b>	Not available.		Not available.	

**Other Equipment:** Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear Colorless Liquid
<b>Odor:</b>	None
<b>Odor Threshold:</b>	Not Available
<b>pH:</b>	Not Available
<b>Melting Point/Freezing point:</b>	Not Available
<b>Initial boiling point and boiling range:</b>	Not Available
<b>Flash Point:</b>	Not Available
<b>Evaporation Rate, 20 °C:</b>	Not Available
<b>Flammability (Solid/Gas):</b>	Not Available
<b>Explosive Limits:</b>	UEL: Not Available                      LEL: Not Available
<b>Vapor Pressure:</b>	Not Available
<b>Vapor Density, 20 °C:</b>	Not Available
<b>Relative Density (Water = 1.0):</b>	Not Available
<b>Solubility:</b>	Not Available
<b>Partition coefficient (n-octanol/water):</b>	Not Available
<b>Auto Ignition Temperature (ASTM D1929):</b>	Not Available
<b>Decomposition temperature:</b>	Not Available
<b>Oxidizing Properties:</b>	Not Available
<b>Viscosity, centipoise:</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Product is stable under normal operating conditions and use as described in the product technical data sheet.
<b>Conditions to Avoid:</b>	See product technical data sheet for details.
<b>Incompatible Materials to Avoid:</b>	Strong acids or bases, strong oxidizers, extreme temperatures, acetaldehyde, allyl alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2-dichloroethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane, barium carbonate, trifluoroacryloyl fluoride, carbon disulfide, chromyl chloride, benzoyl chloride, dimethyl sulfate, dibromomalononitrile, ammonium chloride, trichloroacetoneitrile.
<b>Hazardous Decomposition Products:</b>	Sodium azide forms explosion-sensitive materials with some metals such as lead, silver, mercury, and copper. Carbon disulfide and

aqueous solutions of metal azides interact to produce metal azidodithioformates most of which are explosive, with varying degrees of power and sensitivity to shock or heat metal azides. Sodium hydroxide reacts with formaldehyde hydroxide to yield formic acid and hydrogen.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Toxicology Data:** Toxicological information for this product as a whole does not exist, below is data for the individual components.

Sodium Hydroxide: RTECS #WB4900000

Sodium Azide: RTECS #: VY8050000

	Toxicity Test	Exposure Route	Dose	Observed Effect
<b>Acute Toxicity:</b> Sodium Hydroxide:	LD <sub>10</sub> (Human)	Oral	1.57 mg/kg	Behavioral: Anorexia (human) Nutritional and Gross Metabolic: Body temperature increase Skin: After topical application: Primary irritation <sup>1</sup>
	Lowest Published Toxic Concentration (Rabbit)	Skin	25 pph	Behavioral: Food intake (animal) Nutritional and Gross Metabolic: Body temperature increase Skin: After topical application: Primary irritation <sup>1</sup>
	Sodium Azide: LC <sub>50</sub> (Rat)	Inhalation	37 mg/m <sup>3</sup>	Eye: Other eye effects Behavioral: Convulsions or effect on seizure threshold Lung, Thorax, or Respiration: Structural or functional change in trachea or bronchi <sup>2</sup>
	LD <sub>10</sub> (Human)	Oral	29 mg/kg	Brain and Coverings: Increased intracranial pressure Cardiac: Pulse rate decreased with fall in BP Lung, Thorax, or Respiration: Acute pulmonary edema <sup>3</sup>
	LD <sub>50</sub> (Rat)	Skin	50 mg/kg	N/A <sup>2</sup>
	LD <sub>50</sub> (Rabbit)	Skin	20 mg/kg	N/A <sup>4</sup>
<b>Skin Corrosion/Irritation:</b> Sodium Hydroxide:	Skin Irritation (Human)	Skin	2%/24 hour	Mild <sup>5</sup>
<b>Serious Eye Damage/Eye</b>	Eye Irritation	Eye	1%/24 hour	Severe <sup>6</sup>

<b>Irritation:</b>	(Monkey)		
Sodium Hydroxide:			
<b>Respiratory or Skin Sensitization:</b>	Not Available		
<b>Germ Cell Mutagenicity:</b>	Not Available		
<b>Reproductive Toxicity:</b>	Not Available		
<b>STOST-Single Exposure:</b>	Not Available		
<b>STOST-Repeated Exposure:</b>	Not Available		
<b>Aspiration Hazard:</b>	Not Available		
<b>Carcinogenicity:</b>	Carcinogenic information for this product as a whole does not exist, below is data for the individual components.		
<b>Research Agency:</b>	OSHA:	NTP:	IARC:
Sodium Hydroxide:	Not Listed	Not Listed	Not Listed
Sodium Azide:	Not Listed	Not Listed	Not Listed

## SECTION 12 ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	Ecotoxicity information for this product as a whole does not exist, below is data for the individual components. Sodium Hydroxide: LC <sub>50</sub> Carassius Auratus 24 Hours 160,000 ug/L <sup>7</sup> LC <sub>50</sub> Poecilia Reticulata 24 Hours 145,000 ug/L <sup>8</sup> LC <sub>50</sub> Gambusia Affinis 96 Hours 125,000 ug/L <sup>9</sup> Sodium Azide: LC <sub>50</sub> Lepomis Macrochirus 24 Hours 2,100 ug/L <sup>10</sup> LC <sub>50</sub> Oncorhynchus Mykiss 96 Hours 2,750 ug/L <sup>11</sup> LC <sub>50</sub> Pimephales Promelas 96 Hours 5,460 ug/L <sup>12</sup>
<b>Mobility:</b>	Aquatic Fate: Photolysis of sodium azide may result in metal nitrides initially, with the eventual formation of the free metal and nitrogen gas. <sup>13</sup>
<b>Persistence and Degradation:</b>	The dissipation of azides in soil is not by microbial action but is strictly a chemical process accelerated by increasing acidity and elevated temperatures. Sodium Azide dissipates rapidly in soils by oxidation or by reaction of Hydrazoic Acid with soil organic acids to form Azides of these which decompose by the curtis rearrangement. <sup>14</sup>
<b>Bio Accumulative Potential:</b>	Sodium azide is stable in water in the absence of light but appears to be susceptible to photo-decomposition by solar radiation. Photolysis of sodium azide may result in metal nitrides initially, with the eventual formation of the free metal and nitrogen gas. <sup>7</sup>
<b>Results of PBT Assessment:</b>	Not Available
<b>Other adverse effects:</b>	None known.

## SECTION 13 DISPOSAL INFORMATION

- Substance:** Dispose of unused contents in accordance with international, federal, state, and local regulations.
- Contaminated Packaging:** Dispose of container in accordance with international, federal, state and local requirements.

## SECTION 14 TRANSPORTATION INFORMATION

- UN Number:** UN 1824
- Class:** 8
- Proper Shipping Name:** Sodium Hydroxide Solution
- Packing Group:** PGII
- Marine Pollutant:** Not Listed
- Other Applicable Information:** None

## SECTION 15 REGULATORY INFORMATION

- Australia:** Hazchem Code: 2R; (2W if over 100°C)  
Poisons Schedule Number: S6: Sodium Hydroxide
- California:** Proposition 65 Listed: Not Listed
- Canada:** WHMIS: Class E
- European Union:** Indication if Chemical Safety Assessment has been carried out for the substance or substances in the preparation: Not Required
- Category of danger: C: Corrosive  
T+: Very Toxic  
N: Dangerous for the environment
- Risk phrases: R25: Toxic if swallowed.  
R28: Very toxic if swallowed.  
R32: Contact with acids liberates very toxic gas.  
R35: Causes severe burns.  
R41: Risk of serious damage to eyes.  
R52: Harmful to aquatic organisms.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Safety phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28: After contact with skin, wash immediately with plenty of soap and tepid water.

S37/39: Wear suitable gloves and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately.

S60: This material and its container must be disposed of as hazardous waste.

S61: Avoid release to the environment. Refer to special instructions/safety data sheets.

OECD/High Production Volume (HPV) chemicals: Sodium Hydroxide 1310-73-2

RoHS: Not Listed

**Japan:** Poisonous and Deleterious Substances Control Law: Sodium Hydroxide 1310-73-2 (Deleterious Substance)

Sodium Azide 26628-22-8 (Poisonous Substance)

**United Kingdom** Control of Substances Hazardous to Health Regulations 2002 (COSHH) Rating: Not Listed

## SECTION 16 ADDITIONAL INFORMATION

**Training Advice:** Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

**Technical Contact:** <http://www.millipore.com/support>

### Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
LC <sub>50</sub>	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD <sub>50</sub>	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LDLo	Lowest observed lethal dose
LEL	Lower Explosive Limit

MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STOST	Specific Target Organ Systemic Toxicity
UEL	Upper Explosive Limit
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

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<sup>1</sup> "Vrednie chemicheskije veshstva. Neorganicheskie soedinenia elementov I-IV groopp" (Hazardous substances. Inorganic substances containing I-IV group elements). Filov V.A., *Chimia*, 1988.

<sup>2</sup> "Spravochnik po Toksikologii i Gigienicheskim Normativam (PDK) Potentsial'no Opasnykh Khimicheskikh Veshchestv" Kushneva, V.S., and R.B. Gorshkova, eds. 46, Zhivopisnaya St., 123182, Moscow, Russia, IzDAT 1999

<sup>3</sup> Medical Toxicology and Adverse Drug Experience. (Adis International Ltd., Private Bag 65901, Mairangi Bay, Auckland 10, N.Z.) V.4- 1989-

<sup>4</sup> Farm Chemicals Handbook. (Meister Pub., 37841 Euclid Ave., Willoughby, OH 44094)

<sup>5</sup> Journal of Investigative Dermatology. (Williams & Wilkins Co., 428 E. Preston St., Baltimore, MD 21202) V.1-1938.

<sup>6</sup> Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-

<sup>7</sup> Jensen, R.A., A Simplified Bioassay Using Finfish for Estimating Potential Spill Damage, In: Proc.Control of Hazardous Material Spills, Rockville, MD :104-108, 1978.

<sup>8</sup> Yarzhombek, A.A., A.E. Mikulin, and A.N. Zhdanova, Toxicity of Substances in Relation to Form of Exposure (Toksichnost Vestichestv diya ryb v Zavisimosti ot Sposoba Vozdejstviya), J.Ichthyol / Vopr.Ikhtiol.31(3):496-502(RUS) 31(7):99-106, 1991.

<sup>9</sup> Wallen, I.E., W.C. Greer, and R. Lasater, Toxicity to Gambusia affinis of Certain Pure Chemicals in Turbid Waters, Sewage Ind.Wastes 29(6):695-711, 1957.

<sup>10</sup> Mayer, F.L.Jr., and M.R. Ellersieck, Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals, Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC :505 p. (USGS Data File), 1986.

<sup>11</sup> Klaverkamp, J.F., A. Kenney, S.E. Harrison, and R. Danell, An Evaluation of Phenol and Sodium Azide as Reference Toxicants in Rainbow Trout, In: Proc.2nd Annual Aquatic Toxicity Workshop, 1975, Ontario Ministry of the Environ., Freshwater Inst., Winnipeg, Manitoba, Canada :73-92, 1975.

<sup>12</sup> Geiger, D.L., L.T. Brooke, and D.J. Call, Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI 5:332 p., 1990.

<sup>13</sup> USEPA; Chemical Hazard Information Profile: Sodium Azide p.242 (1977) EPA-560/11-80-011

<sup>14</sup> Weed Science Society of America. Herbicide Handbook. 5th ed. Champaign, Illinois: Weed Science Society of America, 1983., p. 440